

**Energy Task Force**  
Senator John Thune  
Senator Debbie Stabenow  
August 2019

**I. INTRODUCTION**

Since the end of 2017, 29 temporary tax provisions have expired, with more than a dozen other temporary provisions set to expire at the end of this year. As part of the Senate Finance Committee's efforts to address those provisions that have already expired and those set to expire at the end of this year, the Committee formed bipartisan task forces to examine this group of over 40 temporary tax provisions and identify options for their long-term resolution.

The Energy Task Force was charged with examining the temporary energy tax policies that expire between December 31, 2017, and December 31, 2019. The list of these provisions is set out below, and additional background on each was provided in the pamphlet prepared by the Joint Committee on Taxation (JCX-22R-19), which is available at <https://www.jct.gov/publications.html?func=startdown&id=5188>.

The Task Force worked with stakeholders, other Senate offices, and other interested parties to examine the original basis of each provision, determine whether there continues to be a need for the provision as currently drafted, and identify long-term resolutions. The Energy Task Force received and considered comments and proposals from stakeholders and other interested parties with respect to its set of temporary tax policies, which are summarized below. Unless otherwise noted, all sections referenced are to the Internal Revenue Code (IRC).

**II. ENERGY TASK FORCE MEMBERSHIP**

Senator John Thune (R-SD), Co-Lead	Senator Debbie Stabenow (D-MI), Co-Lead
Senator Pat Roberts (R-KS)	Senator Thomas Carper (D-DE)
Senator John Cornyn (R-TX)	Senator Sheldon Whitehouse (D-RI)
Senator Bill Cassidy (R-LA)	Senator Maggie Hassan (D-NH)

We would like to thank Senators Roberts, Carper, Cornyn, Whitehouse, Cassidy, and Hassan for their membership and thoughtful engagement in the Task Force process. We would also like to thank Chairman Grassley and Ranking Member Wyden for their participation as ex-officio members of the Task Force and their professional staffs for the technical assistance they provided. Additionally, we would like to thank the Joint Committee on Taxation (JCT) for making its staff available to provide guidance and revenue estimates. Lastly, thank you to all the stakeholders who submitted comments. Your submissions contributed to a robust and thorough review of the current energy tax policy landscape.

### **III. TEMPORARY PROVISIONS CONSIDERED**

The Energy Task Force examined the following 12 expired or expiring temporary tax provisions:

1. Credit for certain nonbusiness energy property (sec. 25C);
2. Alternative motor vehicle credit for qualified fuel cell motor vehicles (sec. 30B(b));
3. Credit for alternative fuel vehicle refueling property (sec. 30C);
4. Credit for two-wheeled plug-in electric vehicles (sec. 30D(g));
5. Second generation biofuel credit (formerly known as the “cellulosic biofuel producer credit”) (sec. 40(b)(6));
6. Incentives for biodiesel and renewable diesel (secs. 40A, 6426(c), and 6427(e));
7. Credit for electricity produced from certain renewable resources (secs. 45 and 48(a)(5));
8. Credit for production of Indian coal (sec. 45(e)(10));
9. Credit for construction of new energy efficient homes (sec. 45L);
10. Special depreciation allowance for second generation biofuel plant property (sec. 168(l));
11. Special rule for sales or dispositions to implement Federal Energy Regulatory Commission (“FERC”) or State electric restructuring policy (sec. 451(k)); and
12. Incentives for alternative fuel and alternative fuel mixtures (secs. 6426(d) and (e), and 6427(e)).

#### **IV. OVERVIEW OF THE TASK FORCE'S WORK**

The Energy Task Force held a total of 14 meetings, including one meeting with JCT staff to review all 12 expired or expiring tax provisions falling within the Task Force's mandate. The Task Force received 63 submissions expressing views not only on the 12 provisions under the Task Force's express jurisdiction but also on a number of other energy-related tax proposals. Interested stakeholders were asked to provide the Task Force with comments that included the following information:

- Provision you are writing in about;
- Name of organization;
- Geographic footprint of organization;
- Position on short-term and/or permanent extension of provision, or whether it should be left to expire permanently;
- Policy and economic justification for the request;
- Proposal(s) for expansion or modifications to the provision;
- Policy and economic justification for the request; and
- Miscellaneous considerations related to the provision (i.e., other provisions in the Code that interact with the provision that should be considered).

Stakeholders who submitted comments and requested to meet with the Task Force received meetings based on staff availability and member interest. Meetings consisted of a short stakeholder presentation followed by a question-and-answer period. Task Force offices were not prohibited from continuing to meet with individual stakeholders, as might occur in the regular course of business.

#### **V. SUMMARY OF STAKEHOLDER VIEWS RECEIVED**

Stakeholders generally stated an interest in securing certainty and predictability for their particular constituencies, irrespective of technology. Moreover, tax credits were acknowledged to be an effective incentive for bringing nascent technologies to a point of competitive maturity and deployment.

**1. Credit for certain nonbusiness energy property (sec. 25C)**

**Total number of proposals/comments received on the provision: 7**

**Individual stakeholders and groups that met with the Task Force:** Alliance to Save Energy, Air-Conditioning, Heating, and Refrigeration Institute, National Multifamily Housing Council, National Association of Home Builders, and Citizens for Responsible Energy Solutions

**Brief summary of views presented (see appendix for specific details):** Comments expressed support for a forward-looking extension of IRC sec. 25C, along with certain modifications. This included modernizing product-specific efficiency standards, raising the credit rate, and lifting certain product category caps; a proposal to require third-party verification of energy savings and provide whole-building-based incentives; and a proposal to transition the credit to performance-based efficiency standards. In addition, comments noted the credit's role in encouraging investments in efficiency upgrades by reducing upfront investment costs and stimulating jobs in construction and manufacturing, and lowering emissions by reducing energy demand. Comments also raised other energy-efficiency credits in IRC secs. 45L and 179D.

**2. Alternative motor vehicle credit for qualified fuel cell motor vehicles (sec. 30B(b))**

**Total number of proposals/comments received on the provision: 8**

**Individual stakeholders and groups that met with the Task Force:** Electric Drive Transportation Association

**Brief summary of views presented (see appendix for specific details):** Comments discussed extension of the credit and specifically urged support for S. 1094, the Driving America Forward Act, because it would “create jobs, support American manufacturing[,] and reduce emissions in the transportation sector.” In relation to IRC sec. 30B(b), comments also discussed extension of IRC secs. 30C and 6426.

**3. Credit for alternative fuel vehicle refueling property (sec. 30C)**

**Total number of proposals/comments received on the provision: 12**

**Individual stakeholders and groups that met with the Task Force:** Electric Drive Transportation Association and Edison Electric Institute



**Brief summary of views presented (see appendix for specific details):** Comments discussed a five-year extension of the credit and raising the maximum value of the credit. In relation to IRC sec. 30C, comments also discussed extension of IRC secs. 30B, 30D, and 6426.

**4. Credit for two-wheeled plug-in electric vehicles (sec. 30D(g))**

**Total number of proposals/comments received on the provision:** 3

**Individual stakeholders and groups that met with the Task Force:** N/A

**Brief summary of views presented (see appendix for specific details):** Comments discussed the credit's function as a consumer incentive, arguing both that any extension should be on a par with the extension of other expired provisions and that the credit (along with other consumer incentives) should not be extended retroactively because it cannot incentivize past behavior.

**5. Second generation biofuel credit (formerly known as the "cellulosic biofuel producer credit") (sec. 40(b)(6))**

**Total number of proposals/comments received on the provision:** 6

**Individual stakeholders and groups that met with the Task Force:** POET, Biotechnology Innovation Organization, and Second Generation Biofuels Tax Coalition

**Brief summary of views presented (see appendix for specific details):** Comments discussed a five-year extension of the current credit as well as restructuring the credit to mirror the per-facility structure of IRC sec. 45, which would create longer-term certainty with respect to qualifying facilities. Such a proposal would limit eligibility for singular generations of investment to ten years, requiring satisfaction of the 80-20 investment rule to make eligible any subsequent fuel production. Stakeholders agreed that setting such limits would serve as cost-control guardrails for advanced fuels without precluding eligibility for future technologies.

**6. Incentives for biodiesel and renewable diesel (secs. 40A, 6426(c), and 6427(e))**

**Total number of proposals/comments received on the provisions:** 15

**Individual stakeholders and groups that met with the Task Force:** National Biodiesel Board

**Brief summary of views presented (see appendix for specific details):** Comments discussed stakeholder interest in securing both short-term extensions (two- and three-year extensions), to include full retroactive extension through 2018, as well as longer-term extensions to include an industry-supported multi-year extension comprised of full retroactive extension and a

forward-looking phase out to provide prolonged certainty. Stakeholders stressed the importance of restoring the lapsed credit to address the market-wide “pricing-in” of the credit, as well as providing continued investment incentives to afford market stability for farmers, rural lenders, biobased oil suppliers, biodiesel producers, and biodiesel consumers. Proponents of the credit are aligned in preserving the incentive as a blender’s credit, versus a producer’s credit. Agriculture stakeholders are increasingly sensitive to the lapsed credit in light of ongoing, protracted trade negotiations. In the alternative, comments discussed repealing IRC sec. 40A or narrowing the scope of the credit.

**7. Credit for electricity produced from certain renewable resources (secs. 45 and 48(a)(5))**

**Total number of proposals/comments received on the provisions: 13**

**Individual stakeholders and groups that met with the Task Force:** American Wind Energy Association, Siemens, Solar Energy Industries Association, Avangrid, American Council on Renewable Energy, and Business Council for Sustainable Energy

**Brief summary of views presented (see appendix for specific details):** Comments discussed the market distortions caused by frequent credit lapses and the need to provide longer-term certainty. They also suggested that the extenders process could be used to “level [the] playing field for all energy sources and promote needed investment in energy infrastructure.” Additionally, comments proposed modifications to the credits, including changes to recycled paper under IRC sec. 45(c)(1)(G), to make waste-heat-to-power property eligible for IRC sec. 48, and changes to the wind credit, including to allow for limited tax credit transferability.

**8. Credit for production of Indian coal (sec. 45(e)(10))**

**Total number of proposals/comments received on the provision: 1**

**Individual stakeholders and groups that met with the Task Force:** N/A

**Brief summary of views presented:** Comment discussed that the Indian coal production tax credit provides a necessary incentive that levels the playing field for the development of tribal coal resources. Such development can face greater regulatory obstacles than comparable development on non-tribal lands. For coal-producing tribes, mining projects provide a significant source of non-federal revenue, high-paying jobs, and promote tribal self-determination. Support was expressed for permanent extension of the Indian coal production tax credit, as set forth in S. 2029.

**9. Credit for construction of new energy efficient homes (sec. 45L)**

**Total number of proposals/comments received on the provision: 9**

**Individual stakeholders and groups that met with the Task Force:** Alliance to Save Energy, Air-Conditioning, Heating, and Refrigeration Institute, National Multifamily Housing Council, National Association of Home Builders, and Citizens for Responsible Energy Solutions

**Brief summary of views presented (see appendix for specific details):** Comments expressed support for a forward-looking extension of IRC sec. 45L, along with certain modifications. Proposed modifications included modernizing the energy efficiency standards in 45L and rules to prevent “double dipping” between the 45L credit and tax credits for renewable energy. Comments also proposed allowing the credit to be claimed against the Alternative Minimum Tax and allowing it to be claimed by contractors building custom homes on a non-speculative basis. Similar to submissions on IRC secs. 25C and 179D, comments described how 45L has proven successful at stimulating jobs in construction and manufacturing and lowering emissions by reducing energy demand.

**10. Special depreciation allowance for second generation biofuel plant property (sec. 168(l))**

**Total number of proposals/comments received on the provision: 0**

**Individual stakeholders and groups that met with the Task Force:** N/A

**Brief summary of views presented (see appendix for specific details):** N/A

**11. Special rule for sales or dispositions to implement Federal Energy Regulatory Commission (“FERC”) or State electric restructuring policy (sec. 451(k))**

**Total number of proposals/comments received on the provision: 1**

**Individual stakeholders and groups that met with the Task Force:** N/A

**Brief summary of views presented (see appendix for specific details):** Comment suggested the provision “supports retail energy choice.”

**12. Incentives for alternative fuel and alternative fuel mixtures (secs. 6426(d) and (e), and 6427(e))**

**Total number of proposals/comments received on the provisions:** 9

**Individual stakeholders and groups that met with the Task Force:** American Fuel and Petrochemical Manufacturers; additional presentation by JCT and majority and minority Finance staff on retroactivity and “taxable” and “alternative” fuels

**Brief summary of views presented (see appendix for specific details):** The need to extend the incentive was discussed by the Task Force, and comments were received from stakeholders. Discussion and comment centered on the changes in S. 617, congressional intent of the credit, taxpayer reliance and behavior, pending litigation, and revenue implications. A group of 10 senators sent a letter outlining concerns about the changes to the alt-fuel mixture credit proposed in S. 617.

**VI. ADDITIONAL FEEDBACK RECEIVED AND CONSIDERED**

In addition to reviewing the twelve core provisions assigned by the Chairman and Ranking Member, the Energy Task Force received and considered significant feedback on associated energy tax policies.

**1. Credit for new qualified plug-in electric drive motor vehicles (30D)**

**Total number of proposals/comments received on the provision:** 13

**Individual stakeholders and groups that met with the Task Force:** Electric Drive Transportation Association, Edison Electric Institute, Americans for Tax Reform, American Energy Alliance, Freedomworks, and American Consumer Institute

**Brief summary of views presented (see appendix for specific details):** Comments and discussion presented a variety of views. Comments included favorable perspectives on the proposed reforms to and expansion of IRC sec. 30D in the bipartisan Driving America Forward Act (S. 1094). Comments argued that access to the 30D credit benefits domestic manufacturing and jobs, consumers, and reduces emissions within the transportation sector. Comments also argued that the proposed expansion of 30D would enable the electric drive market to reach self-sustaining economies of scale and market penetration. Comments likewise opposed expanding the 30D credit, arguing that the electric vehicle (EV) industry is sufficiently mature to compete without further federal incentives, that expanding the credit is costly, and that EVs

increase lifecycle emissions. Comments argued that fully electric EVs do not pay into the Highway Trust Fund and that the existing incentive benefits high-income earners.

## **2. Credit for offshore wind facilities (sec. 48(a)(5))**

**Total number of proposals/comments received on the provision: 10**

**Individual stakeholders and groups that met with the Task Force:** American Wind Energy Association and Siemens

**Brief summary of views presented (see appendix for specific details):** Comments suggested that the offshore and onshore wind industries in the United States are in different developmental stages, and that therefore offshore wind should be treated differently from onshore wind in the tax code. Comments discussed the importance of providing a long-term extension of the existing wind investment tax credit (ITC) for offshore wind at 30 percent to help stimulate continued offshore wind investment over the next decade. Comments also discussed the importance of retroactively eliminating the ITC phase down only for offshore wind to ensure early actors are not disadvantaged and to reduce any possible market disruptions. Support was expressed for the Incentivizing Offshore Wind Power Act (S. 1988) and the Offshore WIND Act (S. 1957).

## **3. Credit for energy storage technologies (secs. 25D and 48(a))**

**Total number of proposals/comments received on the provisions: 14**

**Individual stakeholders and groups that met with the Task Force:** Energy Storage Association

**Brief summary of views presented (see appendix for specific details):** Comments expressed support for making standalone energy storage eligible for ITCs, and in particular mentioned support for the Energy Storage Tax Incentive and Deployment Act (S. 1142). Comments discussed the narrow set of conditions under which energy storage currently qualifies for the ITCs available under IRC secs. 25D and 48 and the benefits of expanding ITC-eligibility for this particular technology, including: accelerating the deployment of clean energy, addressing rural energy needs, and improving the efficiency and resiliency of our current electric system. One submission recommended legislative text to modify the Energy Storage Tax Incentive and Deployment Act to “enable regulated utilities to account for an investment tax credit in a manner that is at parity with a non-regulated entity.”

#### **4. Technology-neutral clean energy credits and incentives**

**Total number of proposals/comments received on such provisions: 9**

**Individual stakeholders and groups that met with the Task Force:** Alliance to Save Energy, American Council on Renewable Energy, American Wind Energy Association, Solar Energy Industries Association, and Biotechnology Innovation Organization

**Brief summary of views presented (see appendix for specific details):** Comments expressed support for broader, technology-neutral reform to expired and expiring energy tax provisions, along the lines of the Clean Energy for America Act (S. 1288) or the Energy Sector Innovation Credit Act (H.R. 7196, 115th Congress). While the submissions were not in agreement about the continuation of individual energy tax incentives, should Congress move away from providing incentives for specific energy sources, comments were provided on the merits of a long-term, technology-neutral approach as a means for establishing greater certainty and parity in the tax code.

#### **5. Allowing expiring energy tax extenders to expire or eliminating incentives**

**Total number of proposals/comments received on the proposal: 2**

**Individual stakeholders and groups that met with the Task Force:** Americans for Tax Reform, Freedomworks, and American Consumer Institute

**Brief summary of views presented (see appendix for specific details):** Comments discussed the market distortion and inefficient economic outcomes that result from tax credits that give preference to one technology over another. Comments also suggested, “The only way to achieve a truly level playing field is by eliminating all sources of subsidies for all forms of energy. Allowing the temporary energy tax credits to expire would be a good first step.”

## **VII. APPENDIX OF SUBMISSIONS**

Senate Finance Energy Taskforce,

I'm reaching out on behalf of the NAFA Fleet Management Association (NAFA) to see what information or data we could provide that would be of use to you as you work on long term solutions for temporary energy tax policy.

We represent the fleet managers of corporations, universities, government agencies, utilities, and other entities who utilize clean alternative and non-traditional transportation fuels in their normal conduct of business. Many of our members have historically utilized the expired alt. fuels and biodiesel excise tax credits, as well as the alt. fuels refueling infrastructure credit.

Please let me know if there is any specific information we could provide related to the tax credits.

Thanks!  
Dane

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Dear Members of the Senate Energy Task Force,

We are writing to inform you of the importance of extending the biodiesel blenders tax credit (“BTC”). FTI Consulting authored the attached report in November showing the following economic benefits of the U.S. biodiesel industry:

- Economic output (economy-wide sales) valued at \$21.6 billion across the economy, which translates to U.S. GDP of \$6.5 billion;
- Employment for approximately 61,900 workers, 2,300 of which were employed directly in the biodiesel industry;
- Paid wages and benefits totaling \$3.8 billion;
- Federal tax and state and local tax contributions of \$1.2 billion and \$600 million, respectively; and,
- A reduction in GHG emissions by 14.8 million tons, which is equivalent to taking 3.2 million cars off U.S. roads and equal to approximately \$750 million in social benefits.

The BTC is a critical element in maintaining the viability of the biodiesel industry – and the realization of the benefits listed above – because it helps mitigate industry exposure to fluctuations in market prices for petroleum diesel. Our study found that biodiesel producers would have suffered an average loss of \$0.25 per gallon produced in 2017 without the retroactive BTC. As such, certainty regarding the future of the BTC is vital for the biodiesel industry and, without legislative action retroactively implementing the BTC for 2018 and extending the BTC for 2019, compromises the significant economic, environmental and energy security-related benefits the industry provides.

Regards,  
Ken Ditzel and Venki Venkateshwara

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NOVEMBER 2018



# THE BIODIESEL INDUSTRY: IMPACTS ON THE ECONOMY, ENVIRONMENT AND ENERGY SECURITY

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## Executive Summary

This study considers the impact of the biodiesel industry on the U.S. economy, environment and energy security. It also examines the impact on the industry's financial health if an important incentive – the biodiesel blenders tax credit (“BTC”) – were discontinued.

The following points provide a profile of the biodiesel industry in the U.S.:

- Biodiesel production totaled 1.6 billion gallons in 2017, a significant increase over just nine million gallons produced in 2001.<sup>1</sup>
- Current production occurs at over 120 plants in 38 states with capacity exceeding 2.5 billion gallons.<sup>2</sup>
- Biodiesel is essentially interchangeable with conventional diesel but with lower greenhouse gas (“GHG”) emissions.

By analyzing 2017 production and financial data, FTI Consulting found that the biodiesel industry generated the following impacts for the U.S. economy and environment:

- Economic output (economy-wide sales) valued at \$21.6 billion across the economy, which translates to U.S. GDP of \$6.5 billion;
- Employment for approximately 61,900 workers, 2,300 of which were employed directly in the biodiesel industry;
- Paid wages and benefits totaling \$3.8 billion;
- Federal tax and state and local tax contributions of \$1.2 billion and \$600 million, respectively; and,
- A reduction in GHG emissions by 14.8 million tons, which is equivalent to taking 3.2 million cars off U.S. roads and equal to approximately \$750 million in social benefits.

In addition to these benefits, biodiesel can help the U.S. decrease its reliance on foreign oil, particularly imports from members of the Organization of the Petroleum Exporting Countries (“OPEC”) as well as OPEC-friendly countries, which comprised over 37 percent of U.S. oil imports in 2017.<sup>3</sup>

The BTC is a critical element in maintaining the viability of the biodiesel industry – and the realization of the benefits listed above – because it helps mitigate industry exposure to fluctuations in market prices for petroleum diesel. This study finds that biodiesel producers would have suffered an average loss of \$0.25 per gallon produced in 2017 without the retroactive BTC. As such, certainty regarding the future of the BTC is vital for the biodiesel industry and, without legislative action retroactively implementing the BTC for 2018 and extending the BTC for 2019, compromises the significant economic, environmental and energy security-related benefits the industry provides.

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<sup>1</sup> <https://afdc.energy.gov/data/10325>

<sup>2</sup> <http://www.biodieselmagazine.com/plants/listplants/USA/>

<sup>3</sup> [https://www.eia.gov/dnav/pet/pet\\_move\\_impqus\\_a2\\_nus\\_ep00\\_im0\\_mbbbl\\_m.htm](https://www.eia.gov/dnav/pet/pet_move_impqus_a2_nus_ep00_im0_mbbbl_m.htm)

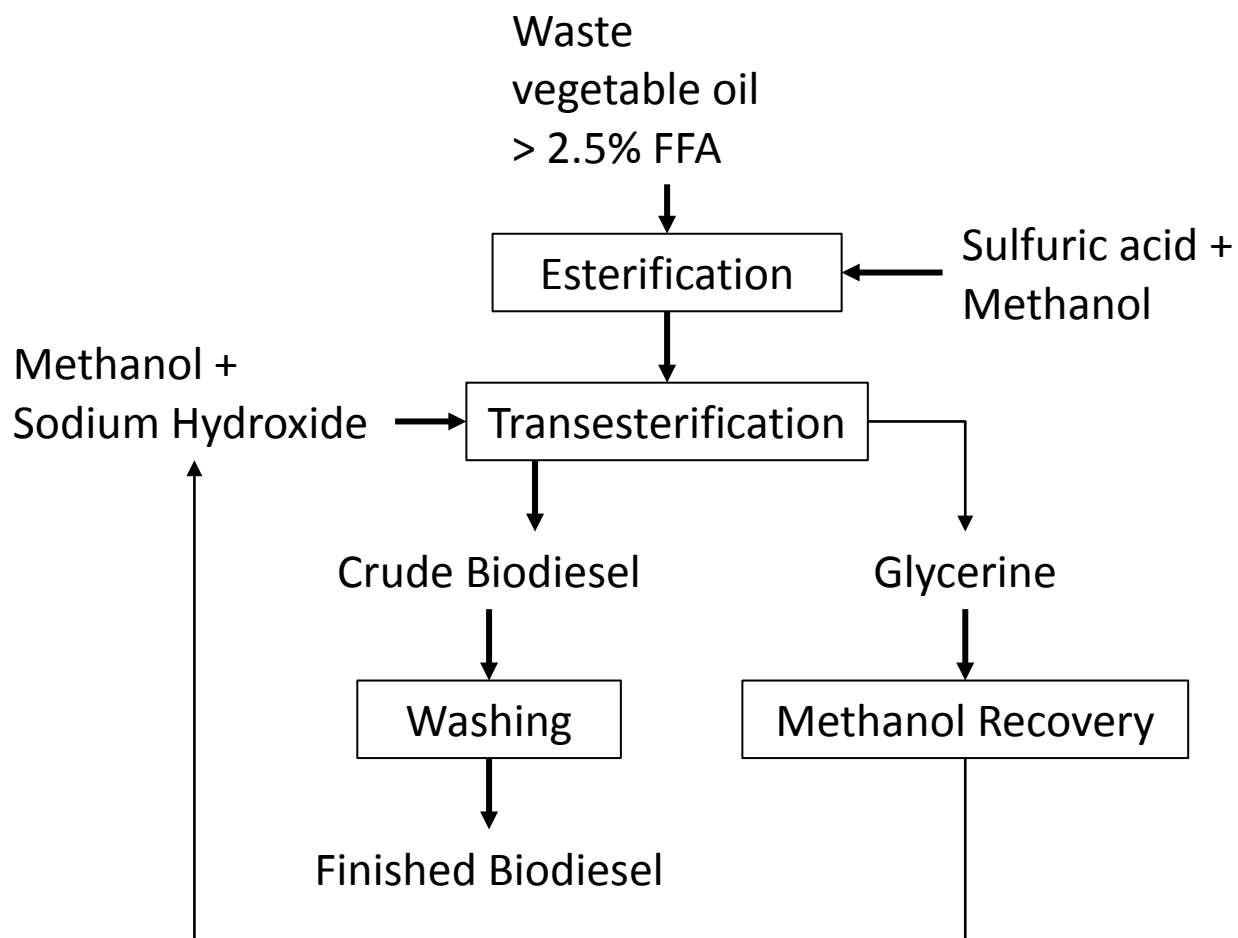
## Introduction

The biodiesel industry has grown into a substantial industry in the U.S., making important economic, environmental and energy security contributions to the nation. This report provides an overview of the principal industry drivers, develops an industry profile, estimates the industry's contributions to the economy and environment and examines the industry's exposure if an important incentive – the BTC – were discontinued.

### What is Biodiesel

Biodiesel is a green alternative to conventional diesel fuel. It is produced from a variety of natural oils such as soybean oil or soy oil, animal fats, such as chicken fat, and waste cooking oils and greases. Since the fuel is made from natural organic material, biodiesel is both renewable and biodegradable. Using a chemical process called transesterification, feedstocks such as soybean oil, canola oil, animal fats or yellow grease can be converted to biodiesel. Transesterification is a process by which oils such as soybean oil are made to react with an alcohol in the presence of a catalyst to yield an alkyl ester (the technical name for biodiesel) and glycerine. Methanol is the commonly used alcohol for this purpose. Figure 1 below shows a schematic of the biodiesel production process.

Figure 1: Biodiesel Production Flow Chart<sup>4</sup>



<sup>4</sup> The feedstock used in this example is waste vegetable oil with 2.5 percent free fatty acid ("FFA") content. See [https://www.researchgate.net/figure/Biodiesel-production-flow-chart-Based-on-the-experiments-described-above-and-on-the\\_fig4\\_221914441](https://www.researchgate.net/figure/Biodiesel-production-flow-chart-Based-on-the-experiments-described-above-and-on-the_fig4_221914441).

## Overview of the U.S. Biodiesel Industry

Increasing use of biodiesel and other renewable transportation fuels contribute towards four major policy objectives:

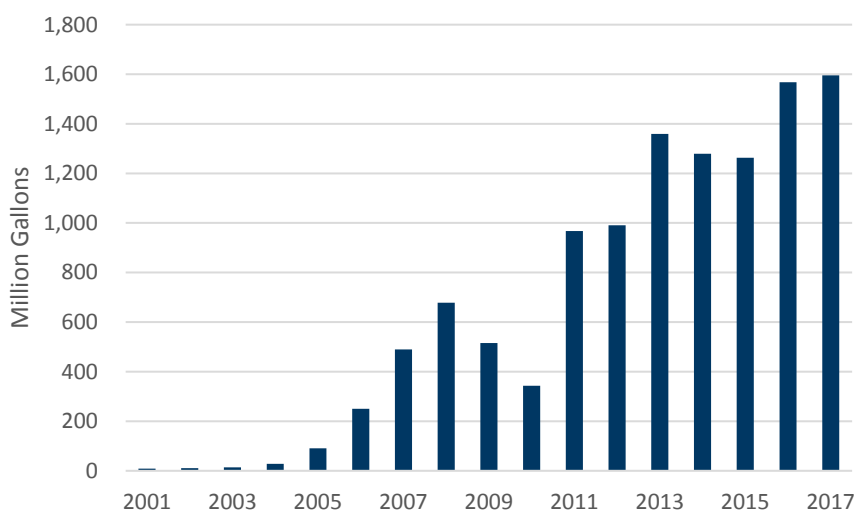
- (1) Improving air quality by introducing additional oxygenates to the country's fuel supply, especially for transportation fuels;
- (2) Lowering GHG emissions;
- (3) Improving rural economic viability by increasing demand for agricultural products; and,
- (4) Reducing U.S. dependence on foreign oil.

These policy objectives have led to the enactment of several pieces of federal legislation to promote renewable fuels. Together, these actions have facilitated the development of a domestic biodiesel industry in the U.S, as well as contributed to the U.S. economy and environment.

An early action to promote biodiesel was included in the American Jobs Creation Act of 2005, which provided the BTC to a blender/refiner that blends qualified renewable fuels (i.e., biodiesel) with conventional fuels (i.e., conventional diesel). Subsequently, through the Energy Policy Act of 2005 ("EPAAct of 2005") and Energy Independence and Security Act of 2007 ("EISA"), Congress mandated the use of certain renewable fuels in the nation's transportation fuel supply. The EPAAct of 2005 and EISA increased demand for renewable fuels, including biodiesel, by requiring "obligated parties" (i.e., refiners and importers) to meet annual volume targets, referred to as renewable volume obligations, ("RVOs") by blending a specified volume of renewable fuel into the fuel supply each year. Notably, the Environmental Protection Agency ("EPA") establishes the RVOs for four categories of renewable fuel, one of which is biodiesel, each year. The EPA tracks compliance with the RVOs through the retirement of renewable identification numbers ("RINs"), where each gallon of renewable fuel receives a unique RIN. Obligated parties can satisfy their RVO by either purchasing and blending renewable fuel or purchasing RINs in the market to satisfy any RVO deficit they may have.

In practice, the BTC and the RVO for biodiesel have increased the use of biodiesel in the nation's fuel supply. Figure 2 below shows the trajectory of biodiesel production in the U.S. from 2001 to 2017. Notably, the industry was virtually non-existent in the early 2000s and has grown to support a 2017 domestic production level of 1.6 billion gallons, which supports tens of thousands of jobs in the economy.<sup>5</sup>

*Figure 2: U.S. Biodiesel Production (2001-2017)<sup>6</sup>*



<sup>5</sup> The total supply of biodiesel in the U.S. economy is larger than domestic production because it includes renewable fuel produced by non-esterification processes and imports.

<sup>6</sup> <https://www.eia.gov/biofuels/biodiesel/production/>

In 2017, over 120 production facilities in 38 states produced approximately 1.6 billion gallons of biodiesel. Sold across the U.S., biodiesel is available, as a blend, at retail gasoline stations across the country.

### Biodiesel Tax Credit

The BTC, established as part of the American Jobs Creation Act of 2005, was set at a level of \$1 per gallon of biodiesel blended. Several aspects of the BTC are important for the biodiesel industry:

- The original legislation only provided the BTC through 2009; thus, the ability of blenders to use the BTC after 2009 has been subject to congressional action to extend and/or retroactively renew it every year. Congress allowed the biodiesel tax credit to expire at the end of 2009, 2011, 2013 and 2016, which meant that the credit was not initially in place for 2010, 2012, 2014, 2015 and 2017. However, in each of these years, Congress retroactively reinstated the BTC through various pieces of legislation in December or the early months of the following year. This situation has created uncertainty for the industry, as the availability of the BTC affects the ability of blenders to incent producers in the price paid for biodiesel as well as to hold down prices for end-use consumers. For example, in March 2018, Congress retroactively extended the BTC for 2017 as part of the Consolidated Appropriation Act of 2018 but did not extend it for 2018.<sup>7</sup> Whether or not blenders can realize the BTC in 2018 and future years, thus, depends on Congressional action to retroactively apply it to 2018 and/or implement legislation for future years.
- The blender, rather than the producer, of biodiesel claims the BTC, and there is no requirement for the blender to provide all or part of the BTC to the producer. Since the implementation of the BTC, however, producer-blender contracts for the sale of biodiesel have provided for producers to receive a portion of the credit. Thus, in practice, the BTC is a mechanism by which blenders can share the credit with producers to incentivize production (i.e., by effectively raising the price received by the producer).<sup>8</sup>

This study quantifies the economic impact of the industry measured in terms of key variables such as GDP, employment, labor income, as well as taxes paid at the federal and state levels. It also examines the environmental, fuel diversity and energy security benefits provided by the industry. Finally, the study looks at the role that the BTC has played and its importance to maintaining a viable industry.

## Socioeconomic Contributions of the Biodiesel Industry

The biodiesel industry makes three important socioeconomic contributions to the U.S. and states. First, the biodiesel industry provides economic stimulus through its investments, operations, purchases and employment. As a consumer of feedstock oils, such as soybean oil and canola oil, and chemicals, such as methanol, the biodiesel industry represents a sizable source of demand and for the agricultural and petrochemical sectors. In 2017, the industry consumed more than \$3.4 billion of agricultural feedstock (e.g., soybean oil, canola oil) and \$0.5 billion of animal fats, waste grease and waste oil. This consumption led to the production of approximately 1.6 billion gallons of biodiesel at over 120 facilities across the country, which provided over 2,300 direct jobs and generated revenues of over \$5.1 billion in 2017. Moreover, the industry and its supply chain's employment support jobs in other sectors through employee spending on items such as food, clothing, real estate, restaurants, hotels and other consumer goods and services.

Second, the industry makes a direct positive environmental contribution by displacing a portion of conventional diesel oil with biodiesel, which is less carbon intensive and reduces GHG emissions. Third, the industry makes a direct contribution to energy security by helping to reduce the use of foreign oil in the production of transportation fuels for U.S. consumption.

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<sup>7</sup> <http://biodieselmagazine.com/articles/2516276/retroactive-biodiesel-tax-credit-signed-into-law-for-2017-only>

<sup>8</sup> <https://farmdocdaily.illinois.edu/2017/04/blender-and-producer-sharing-retroactively.html>

## Estimating Contributions to the Economy

The economic impacts of the biodiesel industry fall into three categories: (1) direct, (2) indirect and (3) induced. The following describes the economic mechanism by which each of these three impacts works its way through the economy:

- (1) **Direct impacts** refer to the economic activity resulting from the biodiesel industry's capital and operational outlays on items such as materials, labor, management and consulting and technical services. Direct impacts are the first order impacts of the industry. The increase in demand for methanol by the biodiesel industry would be a direct impact.
- (2) **Indirect impacts** refer to the economic activity resulting from the "direct" industries spending a portion of their revenues on goods and services provided to them by their own supply chain. For example, an indirect impact would be the addition of workers and increase in material purchases by methanol producers at their facilities to meet the increased demand for methanol by the biodiesel industry. These supply chain industry impacts represent the second order impacts.
- (3) **Induced impacts** refer to the economic activity resulting from the spending of income earned by employees within the "directly" and "indirectly" affected industries. The beneficiaries of induced impacts are primarily consumer-related businesses such as retail stores, restaurants and personal service industries. These "induced" impacts represent the third order impacts.

FTI Consulting applied the IMPLAN model to estimate direct, indirect and induced impacts at a state level. IMPLAN model is a general input-output modeling system that tracks the movement of money through an economy, looking at linkages between industries along the supply chain, to measure the cumulative effect of an industry's impact. Additional information on IMPLAN is included in Appendix A. The IMPLAN datasets represent all industries within the regional economy – rather than extrapolating from national averages – and are derived primarily from data collected by federal agencies.<sup>9</sup>

## Economic Contribution Metrics

For this study, we analyzed the following six key metrics to determine the contribution of the biodiesel industry:

- **Economic Output** or sales is the value of production, equal to value added plus intermediate expenditures, which consist of the monies spent purchasing goods and services to create an industry's production.
- **GDP** measures the industry's value of production over the cost of its purchasing the goods and services required to make its products. GDP includes wages and benefits paid to employees and profits earned by self-employed individuals (i.e., labor income), monies collected by industry that are not paid into operations (e.g., profits, capital consumption allowance, payments for rent, royalties and interest income), and all payments to government (e.g., excise taxes, sales taxes and customs duties) with the exception of payroll and income taxes.
- **Employment** measures the direct, indirect and induced jobs for full-time, part-time and seasonal employees and self-employed workers created by the industry.
- **Labor Income** is measured by wages and salaries, as well as profits earned by self-employed individuals, attributable to the industry's activity.
- **Federal Taxes** is measured by the payments to the federal government from employer-collected and paid social security taxes on wages, excise taxes, sales taxes, customs duties, property taxes, severance taxes, personal income taxes, corporate profits taxes and other taxes.
- **State and Local Taxes** is measured by the payments to state and local governments from employer-collected and paid taxes on wages, excise taxes, sales taxes, customs duties, property taxes, personal income taxes, corporate profits taxes and other taxes.

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<sup>9</sup> The 2016 IMPLAN Dataset includes data from the US Bureau of Labor Statistics ("BLS") Covered Employment and Wages program; US Bureau of Economic Analysis ("BEA") Regional Economic Information System program; US BEA Benchmark I/O Accounts of the US; BEA Output estimates; BLS Consumer Expenditure Survey; US Census Bureau County Business Patterns Program; US Census Bureau Decennial Census and Population Surveys; US Census Bureau Censuses and Surveys; and US Department of Agriculture Census.



## Input Assumptions

IMPLAN represents more than 500 industry sectors in the U.S. economy. To represent the biodiesel industry within IMPLAN, the first step was to construct an economic profile of the industry based on a “bottom-up” understanding of the industry and its operations. In this work, FTI Consulting relied upon the most recent complete calendar year data available (i.e., 2017) as a basis for constructing a bottom-up profile. The industry profile shows:

- Feedstock is a major input cost for the biodiesel industry. Common feedstocks include oil from crops such as soybean, canola (rapeseed), and palm, animal oil/fats, tallow, yellow grease and waste cooking oil.
- Table 1 below shows representative plant process performance (e.g., the efficiency of feedstock conversion to biodiesel) based on industry/trade information.

*Table 1: Representative Plant Process Performance<sup>10</sup>*

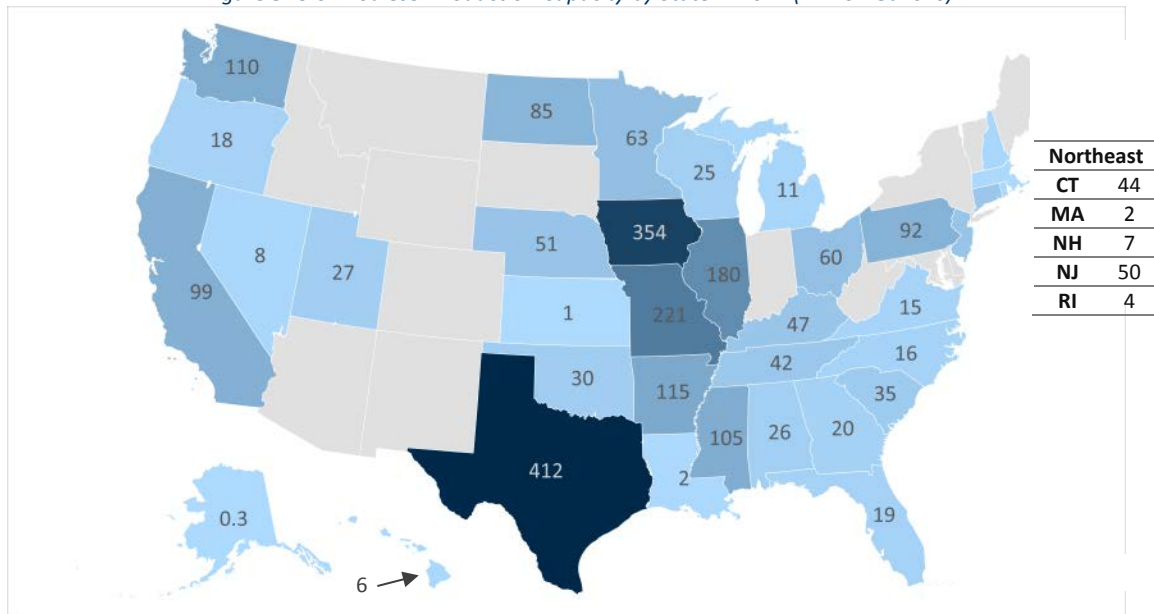
INPUT	PROCESS EFFICIENCY PER GALLON OF BIODIESEL
Feedstock Use	7.55 lbs.
Methanol Use	0.71 lbs.
Natural Gas Intensity	7 cu. ft.
Electricity Intensity	0.6 kWh.
Water Use	2.0 gal.

- The biodiesel industry consists of 124 facilities with a total capacity of 2.5 billion gallons spread across multiple states, as shown in Figure 3 below.
- 2017 production in the U.S. was approximately 1.6 billion gallons, representing a capacity utilization rate of 64 percent.

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<sup>10</sup> <https://www.extension.iastate.edu/agdm/energy/xls/d1-15biodieselprofitability.xlsx>

Figure 3: U.S. Biodiesel Production Capacity by State in 2017 (Million Gallons)<sup>11</sup>



FTI Consulting constructed a 2017 industry profile based on the number of plants in the U.S., engineering estimates of representative biodiesel process costs and performance (as shown in Table 2, below), and biodiesel production.

<sup>11</sup> <http://www.biodieselmagazine.com/plants/listplants/USA/>

Table 2: 2017 Biodiesel Industry Profile

INDUSTRY PROFILE	AMOUNT (2017 \$ MILLIONS)
Labor (Employees)	2,311
Revenues (2017 \$ Millions)	
Biodiesel	\$5,061.6
Glycerine	\$43.2
Total	\$5,104.8
Purchases (2017 \$ Millions)	
Soybean Oil	\$3,429.4
Animal Fats	\$461.2
Methanol and Other Chemicals	\$301.7
Natural Gas	\$58.4
Electricity	\$48.0
Water	\$11.2
Transportation	\$160.0
Marketing & Procurement	\$64.0
Margin (2017 \$ Millions)	
EBITDA <sup>12</sup>	\$335.9

As shown in Table 2 above, FTI Consulting estimates that the biodiesel industry generated \$5.1 billion in revenue, supported 2,311 direct employees at the plants, and generated an EBITDA of \$336 million in 2017.

Based on the industry profile, FTI Consulting distributed these inputs by industry based on the preexisting industry mixture at the state level within the IMPLAN model to estimate the economic impact and jobs created from the biodiesel industry's 2017 activities. IMPLAN characterizes more than 500 economic sectors. As such, we allocated each of the purchases listed in Table 2 above within representative sectors. For example, the procurement of soy oil feedstock by the industry was represented as an addition to demand in the soybean and other oilseed processing industry of IMPLAN (NAICS 311224). Similarly, the procurement of methanol for industry operations was represented as an addition to demand in the petrochemical industry of IMPLAN (NAICS 32519).

### IMPLAN-Estimated Economic Impacts

After incorporating the biodiesel industry profile, as shown above in Table 2, into IMPLAN, FTI Consulting used the model to estimate the economic impacts of biodiesel industry activity in 2017. Table 3 below shows the results of our analysis, emphasizing the biodiesel's impact on major macroeconomic metrics.

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<sup>12</sup> Earnings before interest, tax, depreciation and amortization ("EBITDA") represents a company's operating performance.

Table 3: Industry Economic Contributions to U.S. Economy in 2017

U.S. Level	DIRECT	INDIRECT	INDUCED	TOTAL
<b>Economic Output (2017 \$ millions)</b>	5,100	12,400	4,100	21,600
<b>GDP (2017 \$ millions)</b>	300	3,900	2,300	6,500
<b>Employment</b>	2,300	34,400	25,200	61,900
<b>Labor Income (2017 \$ millions)</b>	100	2,400	1,300	3,800
<b>Federal Taxes (2017 \$ millions)</b>				1,200
<b>State and Local Taxes (2017 \$ millions)</b>				600

As shown above, the biodiesel industry had a significant impact on the U.S. economy in 2017, generating \$21.6 billion in economic output, which translates to \$6.5 billion in GDP. In addition, the industry supported approximately 61,900 jobs, paying over \$3.8 billion in wages and benefits. Notably, 2,300 of these workers were employed directly by the biodiesel industry. The biodiesel industry's activities also generated \$1.2 billion and \$600 million in federal taxes and state and local taxes.

### Environmental Benefits

A major goal of government policy supporting renewable fuels is reducing GHG emissions. Obligated parties can only use renewable fuels approved by the EPA as lowering GHG emissions to satisfy an RVO. Specifically, the EPA considers the feedstock used, production process and intended use of each fuel to assess its lifecycle GHG emissions and determine whether that fuel pathway can satisfy an RVO.<sup>13</sup>

The use of biodiesel produces lower GHG emissions than conventional diesel because a gallon of biodiesel has a lower lifecycle GHG impact than a gallon of conventional diesel. Thus, replacing amounts of conventional diesel with biodiesel lowers GHG emissions. Table 4 and Figure 4 below estimate the effect that replacing conventional diesel with biodiesel has on GHG emissions, considering the full lifecycle GHG impact of each fuel. Based on 1.6 billion gallons of biodiesel (which equals 2017 U.S. biodiesel production), the biodiesel industry reduced GHG emissions by approximately 14.8 million tons.

<sup>13</sup> <https://www.epa.gov/renewable-fuel-standard-program/what-fuel-pathway>

Table 4: Biodiesel's Contribution to GHG Reduction<sup>14</sup>

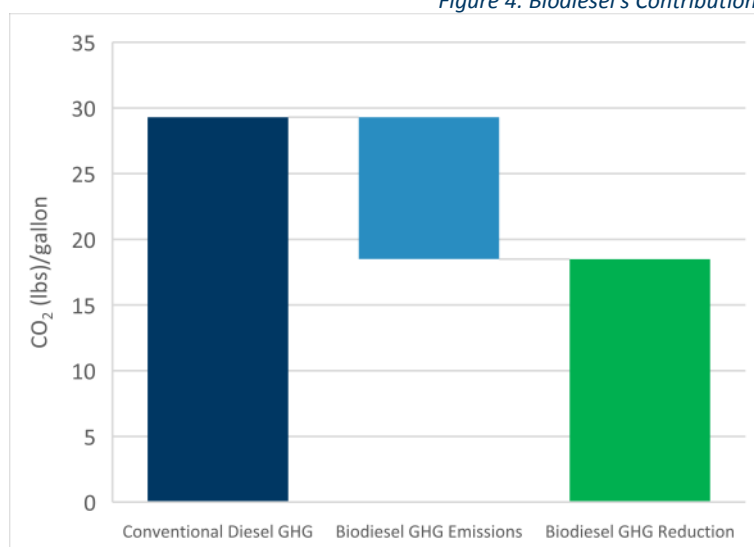
CONVENTIONAL DIESEL GHG IMPACT	BIODIESEL GHG IMPACT*	GHG REDUCTION FROM DISPLACEMENT	ANNUAL DIESEL DISPLACED	GHG REDUCTION, TONS/YEAR
29.3 lbs./gallon	10.8 lbs./gallon	18.5 lbs./gallon	1.6 billion gallons	14.8 million tons/year

*\*Based on a feedstock mix of oils and fats*

Source: EPA

While measures for the monetary benefits of GHG reduction vary, the EPA and other federal agencies use estimates of the social cost of carbon emissions. The EPA has relied on approximately \$50 per ton of carbon dioxide avoided as the social cost of carbon.<sup>15</sup> Based on this estimate, the biodiesel industry provided \$750 million in GHG reduction benefits to the U.S. economy in 2017, also shown below in Figure 4.

Figure 4: Biodiesel's Contribution to GHG Reduction



#### **Impact on U.S. GHG Emissions:**

- GHG Reduction: 14.8 million tons/year
- Impact equivalent to: 3.2 million passenger vehicles off the road

### Energy Security Benefits and Value as a “Drop-in” Fuel

The most common types of biodiesel blends in the U.S. are diesel products consisting of up to five percent (“B5”) and between six and 20 percent (“B20”) biodiesel. B20 is a direct substitute for petroleum diesel because it can be used in current diesel engines without requiring any modifications to the vehicle or engine. Engines operating on B20 have similar fuel consumption, horsepower and torque compared to engines running on petroleum diesel and, despite a one to two percent decrease in energy per gallon compared to petroleum diesel, most B20 drivers do not notice a difference in engine performance.<sup>16</sup> Thus, biodiesel is considered a “drop-in fuel” since it is almost completely interchangeable with petroleum diesel.

Biodiesel’s interchangeability with petroleum-based diesel is an important factor in U.S. efforts to reduce its reliance on foreign oil. In 2017, the U.S. consumed approximately 7.3 billion barrels of crude oil and petroleum products, 51 percent of which, or approximately 3.7 billion barrels, were imports.<sup>17</sup> As such, the U.S. remains a net importer of oil. Table 5 below

<sup>14</sup> <https://www.gpo.gov/fdsys/pkg/FR-2010-03-26/pdf/2010-3851.pdf>

<sup>15</sup> EPA: [https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon\\_.html](https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon_.html);

<sup>16</sup> [https://afdc.energy.gov/fuels/biodiesel\\_blends.html](https://afdc.energy.gov/fuels/biodiesel_blends.html)

<sup>17</sup> [https://www.eia.gov/dnav/pet/pet\\_cons\\_psup\\_dc\\_nus\\_mbbbl\\_a.htm](https://www.eia.gov/dnav/pet/pet_cons_psup_dc_nus_mbbbl_a.htm)

breaks down U.S. oil imports in 2017 by country, showing the top 10 sources of U.S. oil imports and which of these countries are members of OPEC.

*Table 5: U.S. Imports of Crude Oil and Petroleum Products by Country in 2017<sup>18</sup>*

Region/Country	Million Barrels (2017)	% of Total U.S. Imports	Rank
<b>OPEC</b>			
Saudi Arabia	349	9.4%	2
Venezuela	246	6.6%	4
Iraq	220	6.0%	5
Nigeria	122	3.3%	8
Ecuador	76	2.0%	10
<b>OPEC Top 10 Total</b>	<b>1,013</b>	<b>27.4%</b>	
<b>All OPEC Total</b>	<b>1,229</b>	<b>33.2%</b>	
<b>Non-OPEC</b>			
Canada	1,480	40.0%	1
Mexico	249	6.7%	3
Russia	142	3.8%	6
Colombia	132	3.6%	7
Brazil	82	2.2%	9
<b>Non-OPEC Top 10 Total</b>	<b>2,085</b>	<b>56.3%</b>	
<b>All Non-OPEC Total</b>	<b>2,474</b>	<b>66.8%</b>	
<b>Total U.S. Imports</b>	<b>3,703</b>		

As shown above in Table 5, the U.S. receives one-third of oil imports from OPEC countries and two-thirds of imports from non-OPEC countries, the majority of which are from Canada. In addition, the U.S. imports almost four percent of oil from Russia, which, while not a member of OPEC, is considered one of the group's strongest allies.<sup>19</sup> Notably, the U.S. has reduced its dependence on OPEC in the 21<sup>st</sup> century, as OPEC imports have declined from 45 percent of all oil imports in 2000 to 33 percent in 2017. OPEC imports remain sizeable, however, as does U.S. consumption of oil from Russia. Thus, increasing U.S. consumption of biodiesel, which, as described above, is a nearly interchangeable substitute for petroleum diesel, can further help the U.S. reduce its reliance on foreign oil, benefiting both the U.S. economy and national security.

<sup>18</sup> [https://www.eia.gov/dnav/pet/pet\\_move\\_impqus\\_a2\\_nus\\_ep00\\_im0\\_mbbi\\_a.htm](https://www.eia.gov/dnav/pet/pet_move_impqus_a2_nus_ep00_im0_mbbi_a.htm)

<sup>19</sup> <https://www.reuters.com/article/us-oil-opec/opec-russia-rebuff-trumps-call-for-immediate-boost-to-oil-output-idUSKCN1M30DK>

## Biodiesel Plant Economics

The economics of biodiesel at the plant level are driven not only by the market price for diesel and the underlying cost structure of producing plants, but also by demand created by the RVOs and revenue generated by the BTC. Economics at the plant level are best understood by examining each element of an income statement for a representative plant. Thus, to examine the economics of a plant, we analyze the income statements of plants using two different types of feedstocks below: (1) soybean oil, shown in Table 6, and (2) animal fats, shown in Table 7. Because 2017 is the most recent full calendar year for which information is available, FTI Consulting has benchmarked the representative plants using 2017 as a basis.

### Revenues

The market value of biodiesel per gallon can be viewed in terms of three components:

- (1) The value of conventional diesel, which biodiesel can displace as a drop-in substitute.
- (2) The RIN value, driven by the RVO, that a blender would be willing to pay.
- (3) The portion of the BTC value that a blender shares with the producer through a negotiated contract.<sup>20</sup>

In addition to biodiesel, plants produce a small amount of marketable glycerine as a by-product.

### Costs

Described further below, FTI Consulting relied on Iowa State University's monthly profitability of biodiesel production model ("ISU model") to develop the inputs for the representative plant income statements shown in Table 6 and Table 7.<sup>21</sup>

#### Variable Costs

##### **Feedstock Costs**

Feedstocks represent a major portion of total plants accounting for upwards of 70 percent of costs. Feedstock costs are driven by commodity markets, and, during certain periods, can account for as much as 85 percent or more of plant costs. Of the feedstocks examined at the two representative plants examined, fats are less expensive than oils (in the range of 15 to 20 percent less) but harder to aggregate in large volumes.

##### **Methanol and Other Chemicals**

Methanol is the preferred alcohol used in the transesterification process where it reacts with oils in the presence of a catalyst. For the cost of methanol and the catalyst, FTI Consulting relied upon the ISU model.

##### **Utilities and Transportation**

Production of biodiesel requires gas, electricity and water as inputs. In addition, the final product must be transported to the blender or refiner. FTI Consulting used the ISU model to determine the amount of gas, electricity and water required to produce one gallon of biodiesel produced and average costs.

##### **Marketing and Procurement**

A biodiesel plant incurs costs for input procurement (e.g., feedstock, methanol, catalysts and utilities), as well as to market the final product. FTI Consulting also used the ISU model to estimate these costs.

#### Annual Costs

Annual costs, based on estimates from the ISU model, include costs associated with labor at the plant, overhead labor at the plant, and maintenance items (e.g., routine replacement of parts during maintenance, routine overhauls). Long-lived capital expenditures that maintain the plant but are not annual expenses are also estimated as a separate line item. In general, annual costs depend on the production capacity at the plant, but they do not vary based on production at the plant. For

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<sup>20</sup> Our research found that blenders and producers often share the value of the BTC to provide a degree of regulatory and market protection to the producer. See <https://farmdocdaily.illinois.edu/2017/04/blender-and-producer-sharing-retroactively.html>.

<sup>21</sup> <https://www.extension.iastate.edu/agdm/energy/html/d1-15.html>

capitalized costs and property taxes, FTI Consulting relied on the ISU model, in addition to various other industry sources, to estimate these line items.<sup>22</sup>

*Table 6: 2017 Representative Plant Annual Economics with Soybean Oil as Feedstock*

	\$	\$ / GALLON
<b>Revenue</b>		
Biodiesel Revenue	64,127,044	3.16
Glycerine Revenue	547,318	0.03
<b>Total Revenue</b>	<b>64,674,363</b>	<b>3.19</b>
<b>Variable Costs</b>		
Soybean Oil Cost	49,940,325	2.46
Animal Fats Cost	0	0.00
Methanol and Other Chemical Cost	3,821,927	0.19
Natural Gas Cost	740,231	0.04
Electricity Cost	608,132	0.03
Water Cost	141,897	0.01
Transportation Cost	2,027,105	0.10
Marketing & Procurement	810,842	0.04
<b>Total Variable Costs</b>	<b>58,090,459</b>	<b>2.87</b>
<b>Annual Costs</b>		
Operations - Labor	1,196,000	0.06
Operations - Maintenance - Labor	144,000	0.01
Operations - Maintenance - Ongoing & Other	608,132	0.03
Operations - Maintenance - Capital	608,132	0.03
Overhead - Labor	270,000	0.01
Property Taxes, Insurance, etc.	75,938	0.00
<b>Total Annual Costs</b>	<b>2,902,201</b>	<b>0.14</b>
<b>EBITDA</b>	<b>3,681,704</b>	<b>0.18</b>

<sup>22</sup> See <http://www.collectivebiodiesel.org/presentations/2013presentations/cbc2013-rudypruszko-strategiesforsmallplants.pdf>; see also Gerpen, Jon Van, et al., *Building a Successful Biodiesel Business*. 2nd ed., Biodiesel Basics, 2006.



Table 7: 2017 Representative Plant Annual Economics with Fats as Feedstock

	\$	\$ / GALLON
<b>Revenue</b>		
Biodiesel Revenue	47,452,188	3.16
Glycerine Revenue	405,000	0.03
<b>Total Revenue</b>	<b>47,857,188</b>	<b>3.19</b>
<b>Variable Costs</b>		
Soybean Oil Cost	0	0.00
Animal Fats Cost	33,258,977	2.22
Methanol and Other Chemical Cost	2,828,117	0.19
Natural Gas Cost	547,750	0.04
Electricity Cost	450,000	0.03
Water Cost	105,000	0.01
Transportation Cost	1,500,000	0.10
Marketing & Procurement	600,000	0.04
<b>Total Variable Costs</b>	<b>39,289,844</b>	<b>2.62</b>
<b>Annual Costs</b>		
Operations - Labor	1,196,000	0.08
Operations - Maintenance - Labor	144,000	0.01
Operations - Maintenance - Ongoing & Other	450,000	0.03
Operations - Maintenance - Capital	450,000	0.03
Overhead - Labor	270,000	0.02
Property Taxes, Insurance, etc.	63,281	0.00
<b>Total Annual Costs</b>	<b>2,573,281</b>	<b>0.17</b>
<b>EBITDA</b>	<b>5,994,062</b>	<b>0.40</b>

### Total Costs

The total cost, which is the sum of the variable and annual costs, can be stated on dollar per gallon (“\$/gallon”) of biodiesel produced, although the annual cost components do not vary by production level. The total cost, stated in \$/gallon, is a useful metric because it represents the amount of revenues required in \$/gallon for the plant to be profitable.

### Margins

The plant margin is the difference between the revenues and total costs. It is a metric calculated before interest, taxes or depreciation and is similar to EBITDA.

## Impact of the BTC

The 2017 income statement for a representative biodiesel plant is useful in understanding the impact of the BTC. As discussed earlier, the revenues available to a producer consist of three components: the market value of conventional diesel, the RIN, and the share of BTC provided to the producer. In the 2017 income statement developed, the producer's share of the BTC (\$0.46 per gallon) was estimated as the difference between the total revenues to the plant (\$3.19 per gallon) less the sum of the glycerine value (\$0.03 per gallon), the average biodiesel RIN value (\$1.01 per gallon), and the price of conventional diesel (\$1.69 per gallon). As shown in Figure 5 below, the 2017 representative plant analysis shows that without the BTC, the plant would have incurred an average loss of \$0.25 per gallon.

*Figure 5: 2017 Estimated Profitability of Representative Soy Oil Plant*

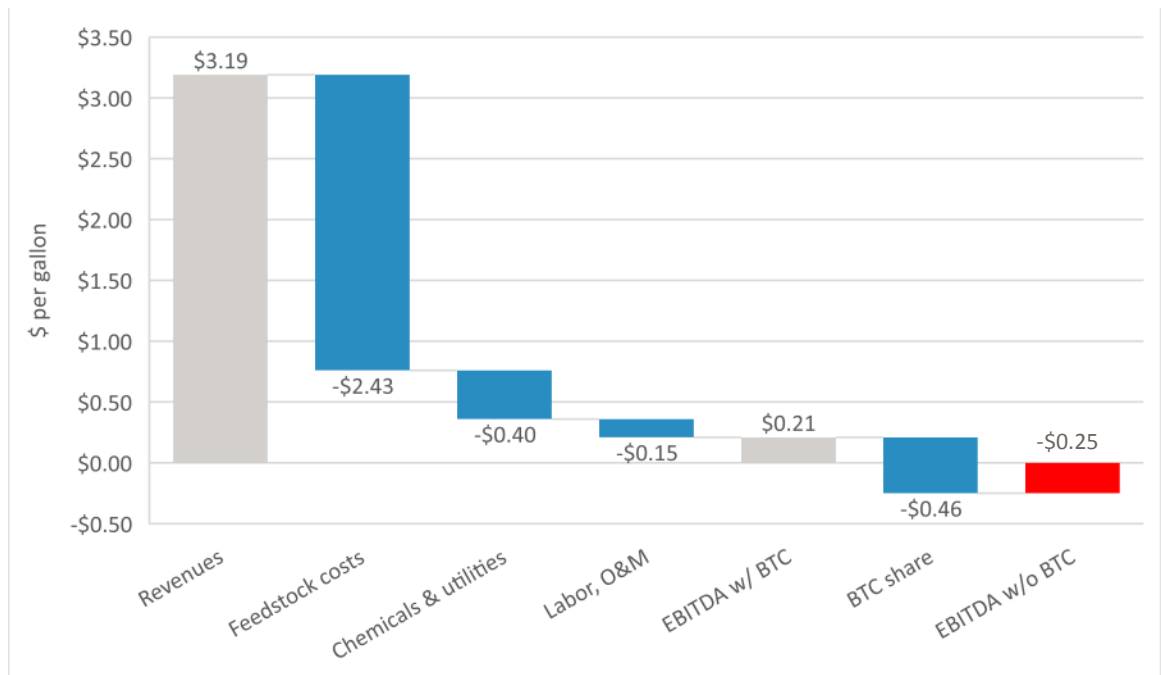
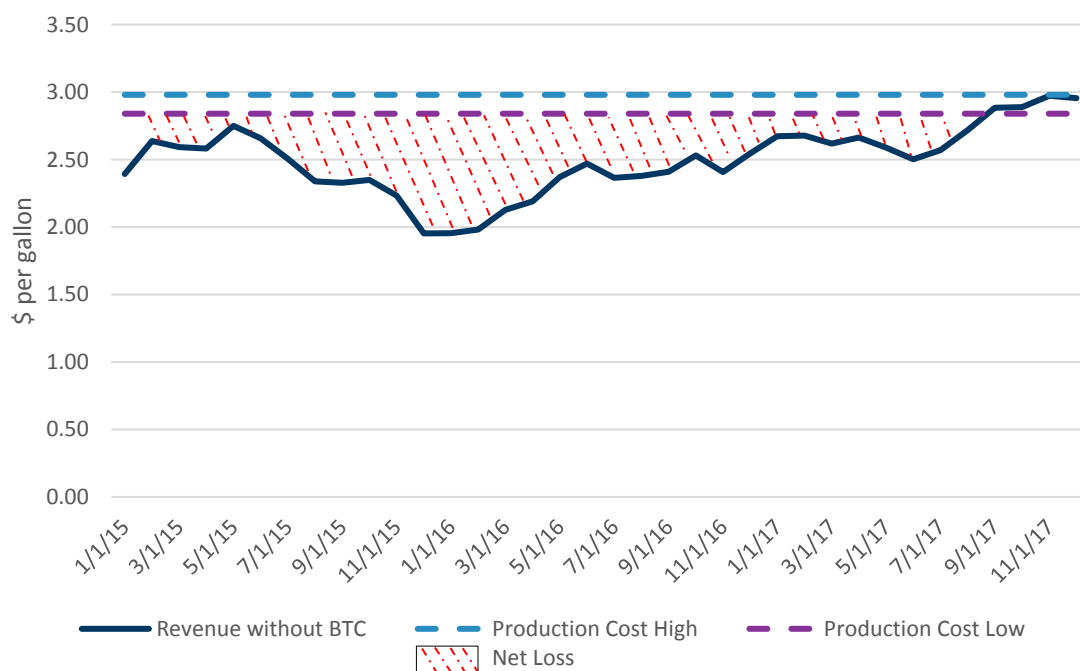


Figure 6 shows the monthly revenues without the BTC, going back to 2015, as well as a range of production costs. The “Low” end of the range corresponds to costs observed in 2015, a relative low, while the “High” end of the range represents current costs observed in 2017. In analyzing the BTC, several points are worth emphasizing:

- The BTC is generally shared between producer and blender and the producer does not automatically receive the BTC.
- The economics of biodiesel plants can vary across plants and from year-to-year for multiple reasons, including:
  - Sudden declines in diesel prices, thereby lowering the price paid to a producer;
  - Sudden increases in feedstock costs or methanol costs (due to commodity market conditions); and,
  - Structural factors that may make some plants have higher costs – e.g., lower conversion efficiency, unanticipated maintenance costs due to equipment failures, higher labor costs in some regions.

Figure 6: Revenues Without BTC vs. Costs



As Figure 6 shows, in the absence of the BTC, the industry does not recover its production costs for many months. The revenues from month to month vary as diesel prices and RIN prices vary. Costs can also fluctuate, especially for feedstock. In the face of uncertainties, the BTC acts as a mechanism to partially mitigate the economic risk from exposure to market prices for diesel, feedstock market fluctuations, and the dynamics of the RIN mechanism that threaten the viability of individual plants and hence the industry. Because the tax credit flows to the blender and is shared with the producer, blenders can adjust the level that is shared with producers, potentially using the remaining amount to lower the amount of biodiesel costs passed onto to ultimate customers in the retail price of diesel. Therefore, the BTC remains an important incentive to preserve industry viability. Without the BTC, the many benefits the industry brings would be put at risk.

## Conclusions

Biodiesel is a green alternative to conventional diesel presents numerous benefits to the U.S. economy and environment, including lower GHG emissions, improved rural economic viability through more demand for agricultural products, and reduced U.S. dependence on foreign oil. Support for these objectives in the public policy realm has resulted in two legislative mechanisms designed to support biodiesel production:

- (1) The provision of a BTC to blenders, which reduces costs for blenders and producers alike; and,
- (2) The requirement for refiners and importers to meet a volume-based target (RVO) for blending renewable fuels (including biodiesel) into the conventional fuel and diesel supply.

As a result of these initiatives, the U.S. biodiesel industry has grown substantially over the past decade, reaching a production level of 1.6 billion gallons of biodiesel in 2017. Based on production and financial data, FTI Consulting found that 2017 biodiesel production generated \$21.6 billion in economic output, added \$6.5 billion to GDP, supported approximately 61,900 jobs across the economy, and paid over \$3.8 billion in labor income.

Notably, the BTC, which blenders share with producers through their purchase contracts, helps both entities mitigate exposure to fluctuations in market prices for diesel and feedstock that threaten the viability of the industry. Without the BTC, FTI Consulting found that a representative plant in the industry would have suffered a loss of \$0.25 per gallon produced in 2017. Despite the socioeconomic benefits the biodiesel industry yields, producers face uncertainty over whether Congress will retroactively extend the BTC beyond 2017 and/or provide certainty for future years. Failure to extend the BTC in future years will likely threaten industry viability in the long term and jeopardize the significant, quantifiable benefits provided by the industry.

## Appendix A: Description of IMPLAN Model

IMPLAN, produced by MIG, Inc.,<sup>23</sup> is a software program containing an IO model of the U.S. or regional economies. Our version of the software here includes the U.S., as well as Alabama, Arkansas, Georgia, Oregon and Wisconsin. IMPLAN sees wide application throughout economic impact analysis and policy research.<sup>24</sup>

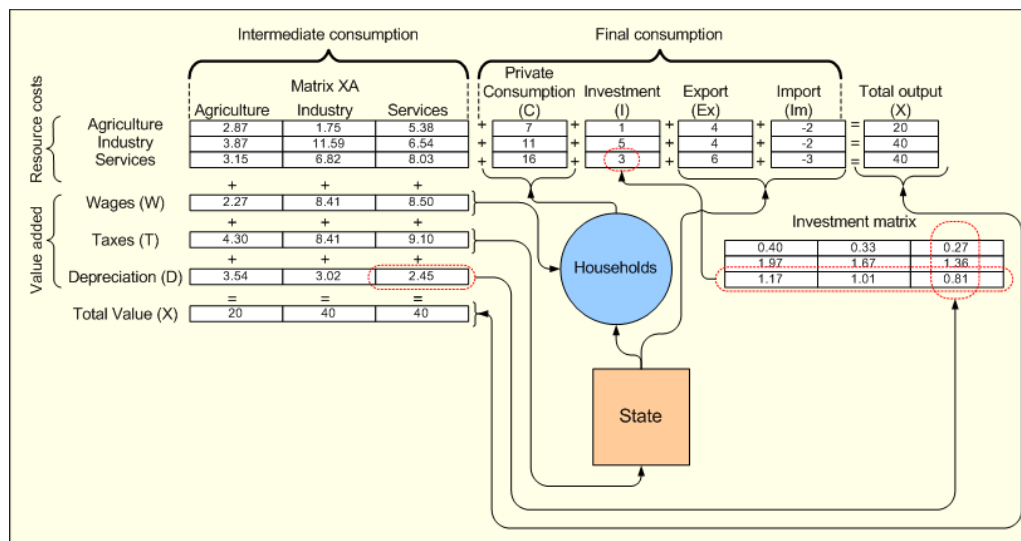
IMPLAN works by constructing a series of multipliers throughout the economy where an initial, “direct” activity stimulates a supply chain and related industry. A classic example involves automotive manufacturing in the Midwest or Southeast, where an automobile assembly plant has a complex supply chain of parts suppliers feeding into it from throughout the region, the U.S., and even the rest of the world in a long and complex production process.

The suppliers needed to construct a final automobile—parts, materials suppliers of glass, rubber, leather, electronics, legal and accounting—are “indirect” impacts in the IMPLAN model. The direct and indirect industries pay wages and salaries to their employees, which support the living expenses of households. These include the standard accoutrements of daily life in any family budget, such as housing and groceries. IMPLAN calls the impact of consumer spending the “induced” effect, which it also includes inside of its modeling and the overall impact results.

The core of IMPLAN is in IO model, otherwise known as a Leontief model. Named for Wassily Leontief, a Nobel Laureate for this and other research,<sup>25</sup> an IO model imagines the economy as a series of transactions between buyers and sellers. Every transaction must have both sides to exist. Most transactions are between industries (the supply chain) though there are also transactions between businesses and households (through either consumption or wages).

Leontief built a matrix, with inputs and outputs from each industry and households on each axis, to show the volume of the transactions between every sector to one another and allow for the computation of changes to the existing structure. The matrix then shows how initial spending flows through into other industries.

Figure 7: Structure of an example input-output model with three industries<sup>26</sup>



<sup>23</sup> <<http://implan.com/>>

<sup>24</sup> <<http://www.ci.richmond.ca.us/DocumentCenter/Home/View/6474>>

<sup>25</sup> <<http://www.econlib.org/library/Enc/bios/Leontief.html>>

<sup>26</sup> <<http://dankozub.com/simulation/>>

## Appendix B: State IMPLAN Analysis Results

### Employment – 2017

STATE	DIRECT EMPLOYMENT	INDIRECT EMPLOYMENT	INDUCED EMPLOYMENT	TOTAL EMPLOYMENT
Alabama	24	616	440	1,080
Alaska	0	2	7	9
Arizona	0	59	93	151
Arkansas	106	1,448	875	2,429
California	91	2,081	1,667	3,838
Colorado	0	39	97	136
Connecticut	40	67	96	204
Delaware	0	12	18	30
District of Columbia	0	4	11	15
Florida	18	274	392	684
Georgia	18	789	614	1,421
Hawaii	5	75	58	138
Idaho	0	43	43	86
Illinois	166	3,163	2,147	5,475
Indiana	102	1,984	1,308	3,394
Iowa	325	2,803	1,927	5,056
Kansas	1	614	437	1,052
Kentucky	43	674	491	1,209
Louisiana	2	285	227	515
Maine	1	6	14	22
Maryland	0	139	129	268
Massachusetts	2	248	219	469
Michigan	10	344	307	661
Minnesota	58	1,757	1,299	3,114
Mississippi	96	641	390	1,127
Missouri	203	1,829	1,236	3,268
Montana	0	51	44	95
Nebraska	47	1,279	914	2,240
Nevada	7	187	138	332
New Hampshire	6	9	19	34
New Jersey	46	203	241	490
New Mexico	0	22	28	50

STATE	DIRECT EMPLOYMENT	INDIRECT EMPLOYMENT	INDUCED EMPLOYMENT	TOTAL EMPLOYMENT
New York	0	200	288	487
North Carolina	15	441	386	842
North Dakota	78	419	292	789
Ohio	55	2,675	1,709	4,439
Oklahoma	28	1,063	641	1,732
Oregon	16	128	122	267
Pennsylvania	85	580	501	1,166
Rhode Island	4	426	256	685
South Carolina	32	245	201	478
South Dakota	0	269	194	463
Tennessee	39	1,107	766	1,912
Texas	379	3,271	2,435	6,085
Utah	25	69	78	172
Vermont	0	45	29	74
Virginia	14	151	184	349
Washington	101	1,035	744	1,880
West Virginia	0	69	52	121
Wisconsin	23	398	330	751
Wyoming	0	26	20	46
United States	2,311	34,364	25,155	61,830

## GDP – 2017

STATE	DIRECT GROSS DOMESTIC PRODUCT	INDIRECT GROSS DOMESTIC PRODUCT	INDUCED GROSS DOMESTIC PRODUCT	TOTAL GROSS DOMESTIC PRODUCT
Alabama	\$3.5	\$67.3	\$39.5	\$110.3
Alaska	\$0.0	\$0.9	\$0.7	\$1.7
Arizona	\$0.0	\$6.9	\$8.9	\$15.7
Arkansas	\$15.4	\$152.8	\$74.5	\$242.7
California	\$13.2	\$238.7	\$162.2	\$414.1
Colorado	\$0.0	\$6.7	\$9.1	\$15.8
Connecticut	\$5.9	\$8.4	\$9.6	\$23.9
Delaware	\$0.0	\$2.1	\$1.8	\$3.9
District of Columbia	\$0.0	\$0.7	\$1.2	\$1.8
Florida	\$2.6	\$29.9	\$36.3	\$68.7
Georgia	\$2.7	\$86.5	\$56.5	\$145.7
Hawaii	\$0.7	\$7.5	\$5.4	\$13.7
Idaho	\$0.0	\$4.6	\$3.8	\$8.4
Illinois	\$24.1	\$365.9	\$198.9	\$588.9
Indiana	\$14.8	\$216.7	\$115.4	\$346.9
Iowa	\$47.3	\$312.7	\$165.2	\$525.2
Kansas	\$0.2	\$71.4	\$39.8	\$111.3
Kentucky	\$6.3	\$68.9	\$44.4	\$119.6
Louisiana	\$0.3	\$36.3	\$19.8	\$56.5
Maine	\$0.2	\$0.7	\$1.3	\$2.2
Maryland	\$0.0	\$15.8	\$12.5	\$28.3
Massachusetts	\$0.3	\$29.8	\$21.5	\$51.6
Michigan	\$1.4	\$38.8	\$28.3	\$68.5
Minnesota	\$8.4	\$199.3	\$118.0	\$325.6
Mississippi	\$14.0	\$61.0	\$32.1	\$107.0
Missouri	\$29.5	\$192.2	\$107.9	\$329.7
Montana	\$0.0	\$5.7	\$3.9	\$9.6
Nebraska	\$6.8	\$153.5	\$81.0	\$241.3
Nevada	\$1.1	\$21.1	\$12.9	\$35.1
New Hampshire	\$0.9	\$1.0	\$1.8	\$3.6
New Jersey	\$6.7	\$28.6	\$23.6	\$58.9
New Mexico	\$0.0	\$3.4	\$2.5	\$5.9
New York	\$0.0	\$26.4	\$30.0	\$56.4



STATE	DIRECT GROSS DOMESTIC PRODUCT	INDIRECT GROSS DOMESTIC PRODUCT	INDUCED GROSS DOMESTIC PRODUCT	TOTAL GROSS DOMESTIC PRODUCT
North Carolina	\$2.2	\$48.7	\$35.7	\$86.6
North Dakota	\$11.4	\$48.5	\$25.5	\$85.4
Ohio	\$8.0	\$289.3	\$153.5	\$450.8
Oklahoma	\$4.0	\$119.8	\$55.6	\$179.4
Oregon	\$2.4	\$14.9	\$11.0	\$28.3
Pennsylvania	\$12.3	\$67.8	\$46.0	\$126.1
Rhode Island	\$0.5	\$47.6	\$23.2	\$71.3
South Carolina	\$4.7	\$25.1	\$18.0	\$47.7
South Dakota	\$0.0	\$31.9	\$17.5	\$49.3
Tennessee	\$5.6	\$120.1	\$69.8	\$195.5
Texas	\$55.1	\$400.1	\$219.4	\$674.6
Utah	\$3.6	\$7.0	\$6.8	\$17.4
Vermont	\$0.0	\$4.5	\$2.6	\$7.1
Virginia	\$2.0	\$17.6	\$17.8	\$37.3
Washington	\$14.7	\$117.9	\$70.4	\$203.0
West Virginia	\$0.0	\$7.8	\$4.7	\$12.6
Wisconsin	\$3.3	\$46.0	\$30.0	\$79.4
Wyoming	\$0.0	\$4.0	\$1.8	\$5.8
United States	\$335.9	\$3,880.8	\$2,279.5	\$6,496.2

## Labor Income – 2017

STATE	DIRECT LABOR INCOME	INDIRECT LABOR INCOME	INDUCED LABOR INCOME	TOTAL LABOR INCOME
Alabama	\$1.4	\$41.9	\$22.1	\$65.4
Alaska	\$0.0	\$0.3	\$0.4	\$0.7
Arizona	\$0.0	\$4.2	\$4.9	\$9.1
Arkansas	\$6.1	\$94.4	\$40.8	\$141.3
California	\$5.2	\$150.0	\$90.7	\$245.9
Colorado	\$0.0	\$5.5	\$5.1	\$10.6
Connecticut	\$2.3	\$6.5	\$5.5	\$14.3
Delaware	\$0.0	\$1.2	\$1.0	\$2.1
District of Columbia	\$0.0	\$0.5	\$0.7	\$1.2
Florida	\$1.0	\$18.6	\$20.0	\$39.6
Georgia	\$1.1	\$54.1	\$31.5	\$86.6
Hawaii	\$0.3	\$4.8	\$3.0	\$8.1
Idaho	\$0.0	\$3.0	\$2.1	\$5.1
Illinois	\$9.5	\$217.9	\$111.4	\$338.8
Indiana	\$5.8	\$134.2	\$65.0	\$205.1
Iowa	\$18.7	\$201.9	\$90.9	\$311.6
Kansas	\$0.1	\$43.9	\$22.2	\$66.2
Kentucky	\$2.5	\$43.5	\$25.0	\$70.9
Louisiana	\$0.1	\$21.9	\$11.1	\$33.1
Maine	\$0.1	\$0.5	\$0.7	\$1.3
Maryland	\$0.0	\$9.6	\$7.0	\$16.5
Massachusetts	\$0.1	\$19.4	\$12.4	\$32.0
Michigan	\$0.6	\$24.2	\$15.8	\$40.6
Minnesota	\$3.3	\$127.0	\$67.3	\$197.6
Mississippi	\$5.5	\$38.0	\$17.3	\$60.8
Missouri	\$11.7	\$119.8	\$60.0	\$191.5
Montana	\$0.0	\$3.4	\$2.2	\$5.6
Nebraska	\$2.7	\$95.1	\$45.2	\$143.0
Nevada	\$0.4	\$12.7	\$7.0	\$20.1
New Hampshire	\$0.3	\$0.7	\$1.0	\$2.1
New Jersey	\$2.6	\$18.0	\$13.4	\$34.0
New Mexico	\$0.0	\$1.8	\$1.4	\$3.2
New York	\$0.0	\$16.1	\$16.7	\$32.8
North Carolina	\$0.9	\$30.2	\$19.9	\$51.0

STATE	DIRECT LABOR INCOME	INDIRECT LABOR INCOME	INDUCED LABOR INCOME	TOTAL LABOR INCOME
North Dakota	\$4.5	\$29.2	\$14.3	\$48.0
Ohio	\$3.2	\$172.7	\$85.1	\$261.0
Oklahoma	\$1.6	\$72.0	\$31.2	\$104.8
Oregon	\$0.9	\$9.1	\$6.2	\$16.2
Pennsylvania	\$4.9	\$43.9	\$26.0	\$74.7
Rhode Island	\$0.2	\$29.3	\$13.0	\$42.5
South Carolina	\$1.9	\$15.6	\$9.9	\$27.4
South Dakota	\$0.0	\$20.3	\$9.8	\$30.1
Tennessee	\$2.2	\$73.4	\$39.9	\$115.5
Texas	\$21.8	\$242.5	\$123.2	\$387.5
Utah	\$1.4	\$4.4	\$3.7	\$9.5
Vermont	\$0.0	\$2.7	\$1.5	\$4.2
Virginia	\$0.8	\$10.6	\$9.8	\$21.1
Washington	\$5.8	\$73.3	\$39.0	\$118.1
West Virginia	\$0.0	\$4.4	\$2.6	\$7.1
Wisconsin	\$1.3	\$28.1	\$16.8	\$46.2
Wyoming	\$0.0	\$2.2	\$0.9	\$3.2
United States	\$132.9	\$2,398.7	\$1,273.4	\$3,805.0

## Economic Output – 2017

STATE	DIRECT ECONOMIC OUTPUT	INDIRECT ECONOMIC OUTPUT	INDUCED ECONOMIC OUTPUT	TOTAL ECONOMIC OUTPUT
Alabama	\$52.8	\$211.0	\$71.5	\$335.3
Alaska	\$0.6	\$1.1	\$1.3	\$3.0
Arizona	\$0.0	\$20.4	\$16.0	\$36.5
Arkansas	\$233.5	\$545.3	\$134.2	\$913.0
California	\$200.0	\$740.2	\$284.8	\$1,225.0
Colorado	\$0.0	\$12.7	\$16.3	\$29.0
Connecticut	\$89.4	\$21.2	\$16.0	\$126.5
Delaware	\$0.0	\$6.6	\$3.1	\$9.7
District of Columbia	\$0.0	\$1.5	\$2.0	\$3.6
Florida	\$39.0	\$87.1	\$65.2	\$191.3
Georgia	\$40.6	\$266.9	\$101.4	\$409.0
Hawaii	\$11.2	\$25.3	\$9.7	\$46.2
Idaho	\$0.0	\$15.3	\$7.0	\$22.2
Illinois	\$366.2	\$1,168.0	\$349.7	\$1,883.9
Indiana	\$224.4	\$716.7	\$206.7	\$1,147.8
Iowa	\$718.9	\$1,017.8	\$296.2	\$2,032.9
Kansas	\$2.4	\$215.4	\$71.8	\$289.6
Kentucky	\$95.7	\$211.2	\$80.7	\$387.5
Louisiana	\$4.5	\$116.3	\$35.8	\$156.5
Maine	\$3.0	\$1.6	\$2.4	\$7.1
Maryland	\$0.0	\$56.2	\$21.9	\$78.1
Massachusetts	\$4.5	\$112.2	\$37.3	\$153.9
Michigan	\$21.5	\$112.3	\$51.0	\$184.7
Minnesota	\$127.9	\$564.7	\$212.1	\$904.7
Mississippi	\$212.2	\$210.9	\$58.5	\$481.7
Missouri	\$448.8	\$612.4	\$192.7	\$1,253.9
Montana	\$0.0	\$20.9	\$7.1	\$28.0
Nebraska	\$103.6	\$446.1	\$145.5	\$695.3
Nevada	\$16.2	\$76.8	\$22.9	\$116.0
New Hampshire	\$13.2	\$2.2	\$3.1	\$18.5
New Jersey	\$101.5	\$83.5	\$40.7	\$225.8
New Mexico	\$0.0	\$5.7	\$4.6	\$10.3
New York	\$0.0	\$91.7	\$51.3	\$142.9

STATE	DIRECT ECONOMIC OUTPUT	INDIRECT ECONOMIC OUTPUT	INDUCED ECONOMIC OUTPUT	TOTAL ECONOMIC OUTPUT
North Carolina	\$32.9	\$149.4	\$64.4	\$246.7
North Dakota	\$172.6	\$136.0	\$46.0	\$354.6
Ohio	\$121.9	\$945.2	\$273.8	\$1,340.8
Oklahoma	\$60.9	\$450.3	\$100.8	\$612.0
Oregon	\$36.4	\$44.8	\$19.6	\$100.7
Pennsylvania	\$186.9	\$207.0	\$80.3	\$474.1
Rhode Island	\$8.1	\$214.9	\$40.7	\$263.7
South Carolina	\$71.5	\$77.4	\$32.5	\$181.4
South Dakota	\$0.0	\$98.6	\$31.6	\$130.2
Tennessee	\$85.3	\$371.0	\$125.2	\$581.5
Texas	\$836.8	\$1,293.9	\$389.2	\$2,520.0
Utah	\$55.2	\$18.6	\$12.3	\$86.2
Vermont	\$0.0	\$21.6	\$4.7	\$26.3
Virginia	\$30.3	\$49.6	\$31.7	\$111.6
Washington	\$223.4	\$372.4	\$124.3	\$720.1
West Virginia	\$0.0	\$23.2	\$8.5	\$31.7
Wisconsin	\$50.8	\$137.5	\$54.1	\$242.3
Wyoming	\$0.0	\$6.6	\$3.3	\$9.9
United States	\$5,104.8	\$12,415.4	\$4,063.4	\$21,583.5

June 28, 2019

The Honorable John Thune, Co-lead  
The Honorable Debbie Stabenow, Co-lead  
Finance Committee Energy Task Force  
Washington, D.C. 20510  
VIA Email: [energy\\_taskforce@finance.senate.gov](mailto:energy_taskforce@finance.senate.gov)

Dear Senators Thune and Stabenow:

The Clean Air Task Force is an environmental non-profit dedicated to catalyzing the development and global deployment of low-carbon energy technologies, and other climate protective technologies, through research, public advocacy leadership, and partnerships with the private sector. We are pleased to submit the following comments to the Senate Energy Finance Committee's Energy Tax Task Force.

The goal of energy tax policy should be to drive technology innovation across a range of zero carbon technology options in order decarbonize our global energy system as soon as possible and within a matter of decades. The US should facilitate this transition by becoming a leader in multiple zero carbon-emitting energy technologies that are affordable and rapidly scalable, including renewables, carbon capture utilization and storage, and nuclear energy as well as zero carbon-emitting fuels and electrification technologies for transportation and industrial systems.

To reach this objective, energy policy must focus on creating technology options that are cost competitive, can deploy rapidly, can easily access competitive financing, have adequate infrastructure and clear regulatory pathways. By encouraging technology deployment, such policies will help drive technologies down the cost curve, create more standard financial deal structures, and the volume of activity will facilitate the development of factory supply chains and modularization, as well as infrastructure and regulatory pathways.

It should also be noted that tax policy alone will not be not be enough. it will also be important to adopt complementary policies for the earlies stage of innovation. Stages, such as concept creation and R&D, are more likely to benefit from direct investment such as grants for engineering studies and pilot project development. Assisting technologies across the commercial demonstration "valley of death" can be addressed by tax policies, or by other methods such as grants, procurement, or a

contract for the difference between a commodity and the market price. Finally, such innovations policies should be adopted in conjunction with emission limits, carbon fees, or energy and fuel standards that require decarbonization by mid-century.

## **Key recommendations**

We recommend the following general approaches in federal energy tax policy:

### *Any Production Tax Credit and Investment Tax Credit Policies Need to Ensure the Playing Field is Level for All Zero Carbon Energy Technologies*

Zero carbon-emitting energy technologies are in various stages of development. Current generation photovoltaics and wind have moved substantially down the cost curve, with energy tax policy playing a significant role in that outcome<sup>1</sup>. However, next generation nuclear, carbon capture energy, and power storage technologies are at an earlier stage and only beginning commercial deployment. While these earlier stage technologies may be more expensive now, their costs may fall dramatically in the future. To avoid premature technology “lock-in” tax policy should not discriminate against early stage technologies. Therefore, in order to ensure multiple options are available, the credits for the earlier stage technologies should be of a higher value.

One approach to this issue would be to include a time-limited high value credit for firm power sources relative to variable power sources. A significant period of time would be needed to allow for a meaningful number of project to be built and drive the more capital-intensive technologies to more modular and standardized designs, accelerating potential deployment speed. The current PTC and ITC have been in place for roughly thirty years. The additional technologies would likely need more than one decade to reach a similar level. Once the period is over, technologies could compete on a more level playing field.

### *Short commence construction widows create uncertainty and depress investment*

As was seen with wind and PV, the inability to rely on a commence construction window over a longer period of time depresses investment potential<sup>2</sup>. And a short commence construction period is particularly problematic for technologies that have longer construction times.

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<sup>1</sup> Trancik, et al, “Technology Improvement and Emissions Reductions as Mutually Reinforcing Efforts: Observations from the Global Development of Solar and Wind Energy. Technical Report. Institute for Data, Systems, and Society, MIT, 2015. <http://energy.mit.edu/publication/technology-improvement-and-emissions-reductions-as-mutually-reinforcing-efforts/>

<sup>2</sup> “Impacts of Federal Tax Credit Extensions on Renewable Deployment and Power Sector Emissions”, Mai et al, NREL, 2016 <https://www.nrel.gov/docs/fy16osti/65571.pdf>

The 45Q tax credit commence construction window, for example, is problematic because the window of six years is too short, given the long lead times for carbon capture construction on power plants. Moreover, nearly two of the six years has already passed, but projects haven't moved forward while they wait for final guidance or rules from the Department of Treasury. A 10-year window for the 45Q would provide a meaningful time period to allow for the planning and development of many carbon capture projects

Any tax credit value for advanced nuclear would likely need a construction window for multiple decades. It's unlikely that many advanced reactors would begin construction for at least ten years, given the length of time for licensing and construction

*Either 45Q or a PTC should be an option for carbon capture*

The 45Q tax credit for carbon capture and storage should be retained in order to help ensure its application in power and industrial sectors and in the development of zero carbon fuels. Power plants that capture their carbon should be allowed to choose between 45Q or a production tax credit. In part this is because such accredits can have differential value, depending on the carbon capture application.

For example, developing carbon capture on gas power plants will be crucial due to the likely reliance on gas power in the decades to come. And while coal's role is diminishing in the US, the number of coal plants in China will dominate power generation there for decades - therefore, a commercial carbon capture option for coal will be crucial. Because gas plants are highly efficient, the concentration of CO<sub>2</sub> in their emissions is dilute, and cost of capture as measured on a \$/MWh basis is relatively small. For these plants, the production tax credit structure is easier to access than a credit expressed on a \$/tonne basis such as 45Q. For coal plants, the concentration of CO<sub>2</sub> emissions are more concentrated so a 45Q credit will be more valuable for coal power carbon capture than a PTC.

Creating flexibility by allowing carbon capture technologies to choose between selecting a PTC or 45Q will help accelerate innovation.

*Tax Advantaged Financing Should Apply to All Zero Carbon Technologies*

In order to drive energy system decarbonization, the tax treatment of zero carbon energy technology should be at least equivalent to, if not better than carbon emitting technologies.

The ability to form a master limited partnership (MLP) is currently primarily available to carbon emitting technologies. Renewable energy, carbon capture across all applications, and nuclear energy should be able to develop projects under an MLP structure. By developing a project as an MLP, the cost of equity for the project can be reduced. The proposed Financing Our Energy Future Act, S.1841, is an example of this approach.



In addition, zero carbon technologies should have access to tax-exempt private activity bonds (PABs), which would reduce the cost of debt to projects. The proposed Carbon Capture Improvement Act, S. 1763, is an example of such an approach.

*Policies Should Ensure Credit Value*

Tax policies should be designed to ensure credits can have value to the taxpayer. Tax credits should have reasonable but limited transferability to parties that are involved in developing zero carbon technology projects. The 45J nuclear tax credit provides an important precedent for other technologies, allowing equity investors, lenders, construction firms and equipment suppliers to be eligible for the credit. A similar approach would be to allow companies to offer bonds that allowed for interest rate payments in the form of tax credits.

In addition, energy tax credits should not be disallowed under the Base Erosion and Anti-Abuse (BEAT) tax. Business can recognize up to 80% of the value of energy tax credits under their BEAT obligation. However, only the wind PTC and solar ITC are eligible for such tax treatment after 2025. All energy tax credits for zero carbon technologies, including 45Q and 45J should be eligible in the same manner.

We greatly appreciate the opportunity to submit the following comments to the Energy Tax Task Force. Please let us know if we can provide any additional information or answer any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Kurt Waltzer", with a stylized flourish at the end.

Kurt Waltzer  
Managing Director  
[kwaltzer@catf.us](mailto:kwaltzer@catf.us)



May 29, 2019

## **Fuel Cell and Hydrogen Energy Association Comment for House Ways and Means Committee Hearing on “The Economic and Health Consequences of Climate Change”**

The Fuel Cell and Hydrogen Energy Association appreciates the opportunity to provide comments to the House Ways and Means Committee for the hearing on “The Economic and Health Consequences of Climate Change.” The Fuel Cell and Hydrogen Energy Association (FCHEA) represents the leading companies and organizations that are advancing innovative, clean, safe, and reliable energy technologies. FCHEA member organizations represent the full global supply chain for hydrogen and fuel cells, including automakers; material, component, stack and system manufacturers; hydrogen producers and energy companies; trade associations; utilities; and end users.

As the Committee assesses the impact of climate change on our nation’s economic stability and well-being of its citizens, they should also consider potential solutions to these challenges, including fuel cell and hydrogen technologies. One way to accomplish this is through the extension of the 30B and 30C tax credits for Fuel Cell Vehicles and Hydrogen Fueling Infrastructure.

Fuel cells generate electricity through an electrochemical reaction of hydrogen and oxygen, not combustion. Fuel cell systems generate no or low emissions, are extremely efficient, quiet, and scalable, allowing versatility in nearly every power application. Today in America, there are more than 6,500 fuel cell-powered light-duty vehicles being driven by consumers, dozens of fuel cell buses operating in revenue service in multiple states, over 26,000 fuel cell forklifts deployed in warehouses and distribution plants centers across the country, and over 500 megawatts of installed fuel cells powering data centers, hospitals, universities, neighborhoods, and more.

By supporting development of zero-emission fuel cell vehicles (FCVs), hydrogen infrastructure, and fuel cell systems for stationary applications, America can enable future expansion of environmentally friendly alternatives for transportation and power generation, provide economic growth by maintaining leadership in this innovative technology, and improve local air quality to support public health.

On transportation, several factors make supporting zero-emission FCVs a feasible and prudent use of monies. FCVs get excellent fuel economy by offering 300-400 miles of driving range per tank of hydrogen fuel, refuel in three to five minutes, experience minimal effects from cold weather, and operate quietly with highly responsive performance characteristics, all with zero-emissions. In other words, FCVs offer American consumers the option of Zero Emissions with Zero Compromises.

FCVs are zero-emission vehicles (ZEVs) with water as the only tailpipe emission. No matter the source of hydrogen, FCVs dramatically reduce emissions on a well-to-wheel basis compared to combustion vehicles and are on par in reductions with battery electric vehicles (BEVs). When hydrogen is generated from renewable or zero-carbon sources – such as wind, solar, nuclear, biomethane, or natural gas with carbon capture and sequestration – carbon emissions are completely eliminated. Just as battery electric vehicles are getting cleaner as the utility grid adopts more renewable power generation, so too is hydrogen production driving its emissions lower. In fact, in September 2018 the Hydrogen Council, a global CEO coalition of fuel cell and hydrogen companies, announced an ambitious goal of fully

decarbonizing hydrogen fuel for transport by 2030.<sup>1</sup> This goal would set the stage for a significant environmental impact and put hydrogen fueled transport on a much faster path to zero-carbon intensity than the one charted by utilities for the grid. Supporting FCV deployment will help reduce our nation's environmental impact and reduce air pollution.

While certain methods of generating hydrogen do produce some greenhouse gas, many studies, including those by the U.S. Department of Energy's Argonne National Laboratory, have demonstrated that no matter the source of hydrogen, FCVs still dramatically reduce carbon emissions compared to gasoline vehicles and are comparable in emissions to battery electric vehicles (BEVs) that use grid electricity. In addition, due to the much higher efficiencies of fuel cell electrochemistry, an FCV using hydrogen derived from natural gas would allow a vehicle to travel two to three times further than a compressed natural gas vehicle using the same amount of fuel. FCVs offer a much more efficient and environmentally friendly means of using domestically-produced resources.

Operating an FCV is no different than the gasoline vehicles consumers use today, beyond the increased performance and maintenance benefits of electric drive. When fuel is running low, a driver simply pulls into a station with a hydrogen dispenser, swipes a credit card, inserts the fuel pump, and in a few short minutes they are back on the road. By giving the option to maintain their driving habits of returning to a centralized stations whenever they need more fuel, FCVs can provide a zero-emission option for consumers that live in multi-family dwellings, have off-street parking, or anyone else without access to recharge their vehicle at work or home. Therefore, fuel cells can expand access to zero-emission vehicles to new markets and customers.

In the lead up to and rollout of commercial offerings of these vehicles, the U.S. Department of Energy, automobile manufacturers, and industrial gas companies have and are continuing to invest billions of dollars in fuel cell and hydrogen technologies. While California has committed to \$200 million over a period of ten years to support hydrogen infrastructure development, industry has already far exceeded that with recent announcements of investments collectively totaling hundreds of millions of dollars from multiple companies into hydrogen production for future fuel cell transportation use.

Like fuel cells for transportation, stationary fuel cells offer significant reductions in carbon emissions, as well as emit virtually no NOx, SOx, or particulate matter that contribute to climate change and air pollution. In addition, these systems can be an efficient use of our domestic resources, utilizing hydrogen directly or natural gas and other sources as the feedstock. Fuel cells can also provide continuous power and operate in tandem or separate from the grid, offering resiliency and mitigating the economic, environmental, and even emotional impact of significant weather events due to climate change. Fuel cells are installed as part of microgrids and at other critical facilities, such as police stations, grocery stores, and hospitals. They have already achieved an impressive record of servicing communities across the country with food, water, and shelter in times of weather disasters such as hurricanes, derechos, and more.

While America currently is the world leader in fuel cell technologies, home to double the number of FCVs as the next largest country Japan, a leading manufacturer of key fuel cell hydrogen components, and a significant exporter of stationary fuel cell systems, that gap is quickly tightening due to government interest abroad. Europe, Japan, South Korea, and China are investing heavily and moving rapidly to deploy thousands of zero-emission fuel cell cars, buses, and trucks, the hydrogen fueling

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<sup>1</sup> <http://hydrogencouncil.com/our-2030-goal/>

stations needed to support them, and installing fuel cells for power generation. Now is the time to pursue programs to expand fuel cell and hydrogen systems to maintain our competitive advantage and ensure American technology leadership, as well as preserving future jobs, manufacturing, and growth that the industry will bring.

As the Committee considers ways of mitigating the impact of climate change, we ask that you consider support for H.R.2256, “Driving America Forward Act.” This bill is a compromise solution that would support deployment of zero-emission vehicles, both BEVs and FCVs, by raising the cap on BEV incentives for automakers, as well as reinstating and extending the 30B Fuel Cell Vehicle Tax Credit. In addition to H.R.2256, we are also seeking the inclusion of the 30C Alternative Fuel Vehicle Refueling Property Credit in whatever tax package moves forward, which would support the development of necessary hydrogen refueling infrastructure by the federal tax code.

We would also appreciate the opportunity to discuss modifying the 30C credit by raising the cap from \$30,000, which is prohibitively low. The compliance costs far outweigh the benefit of the credit. Addressing this and allowing for hydrogen infrastructure that supports material handling equipment to qualify, will allow the Code to reflect Congressional intent, and help seed new stations. Lastly, reauthorization and a simple modification of the language in Section 6426 is needed to include sale of gaseous hydrogen for use onboard a vehicle, which is the pathway being considered by automobile manufacturers and allows material handling equipment refueling to qualify.

We thank the Committee for their past support of our industry, particularly with the reinstatement of the Investment Tax Credit (ITC) that was included in the Bipartisan Budget Act of 2018 for stationary and material handling fuel cells, which reestablished a level playing field for alternative energy power solutions. This was a win for our industry, is protecting our environment, creating good-paying American manufacturing and service jobs across the country, and we look forward to working with the Committee to advance efforts for other segments of the industry. We understand that conversations are on-going regarding the extension of the ITC, and we request that the Committee include fuel cells in any such extension effort and would welcome the opportunity to discuss this further.

By supporting development fuel cell and hydrogen technologies, America can both mitigate the causes of climate change, while supporting our economic future and protecting public health. Thank you for your consideration.

To Energy leadership,

I am president of a small commercial construction management company that builds and renovates Schools, Courthouses, Libraries and any number public and governmental buildings. Once I learned of the 179D program it really helped me focus on pushing for a more energy efficient design. I consul my owners ( IE mayors, city engineers, commissioners etc. ) on payback for funds invested in construction projects. This program is a true Win-Win program for all. Smart money spent on energy efficiencies for tax payers and incentives for Construction/Design vendors.

Please vote to keep the 179D program.

Thanks

Mike

Michael Witteveen  
President & LEED AP  
***Tecton Construction Mgmt Inc.***

(Work) 765-429-5232 (Cell) 765-426-5577  
[WWW.Tectoncm.com](http://WWW.Tectoncm.com)

Good Afternoon,

On behalf of Kelly Speakes-Backman, the Chief Executive Officer of the Energy Storage Association, I am writing to request a meeting with you next week to discuss S. 1142, bipartisan legislation that would clarify energy storage's qualification under the ITC. Inclusion of this bill in any energy tax bill would level the playing field for energy storage with other technologies already eligible for the Investment Tax Credit. We are hoping to meet with you next week and are available Wednesday, Thursday or Friday. Please let me know if you have an opening in that time frame—

Thank you,

Isaac

**Isaac Brown**

38 North Solutions | Partner

o: 202.540.9162 | m: 202.531.8277



*Kern Oil & Refining Co.*

7724 E. PANAMA LANE  
BAKERSFIELD, CALIFORNIA 93307-9210  
(661) 845-0761 FAX (661) 845-0330

**VIA ELECTRONIC FILING**

June 7, 2019

The Honorable Charles Grassley, Chairman, Senate Committee on Finance  
The Honorable Ron Wyden, Ranking Member, Senate Committee on Finance  
The Honorable John Thune, Chairman, Energy Task Force  
The Honorable Debbie Stabenow, Ranking Member, Energy Task Force

**RE: Alternative Fuel Mixture and Biodiesel Blenders Tax Credits**

Dear Chairmen and Ranking Members:

Thank you for the opportunity to provide a written statement to the Senate Finance Energy Task Force. Kern Oil & Refining Co. (Kern) respectfully requests your support to extend the Alternative Fuel Mixture Tax Credit, Tax Code, § 6426(e), and the Biodiesel Mixture (Blenders) Excise Tax Credit, Tax Code, § 6426(c), both of which expired at the end of 2017.

The Alternative Fuel Mixture and Biodiesel Blenders Tax Credits advance important Federal Renewable Fuel Standard (RFS) and California Low Carbon Fuel Standard policy goals by incentivizing the continued use and expansion of renewable fuels in our national (and state) motor vehicle fuel portfolio. Under RFS, Congress mandates the blending of renewable fuels not commercially viable on their own merits. These Tax Credits provide obligated parties like Kern a pathway to RFS compliance through economic renewable diesel production and biodiesel blending. Even with the credits, Kern's renewable fuel production and blending falls short, requiring Kern to purchase Renewable Identification Numbers (RINs) to satisfy its RFS obligation.

The ongoing uncertainty of credit availability and pricing continues to impose operational challenges – affecting manufacturing and processing decisions and resource allocation. To reduce uncertainty, Kern strongly supports a long-term or even permanent extension and/or a phase-out of the credits. A fixed longer term credit expiration will enable businesses like Kern to plan, invest and adjust to regulatory mandates.

The recently enacted tax reform bill does not alter the RFS dynamic or provide a substitute for these tax credits. As evidenced by the recent bankruptcy filing of Philadelphia Energy Solutions, lower federal income tax rates only benefit a business with taxable income. The tax credits themselves can result in additional taxable income; consequently, the tax credits effectuate a smaller benefit for profitable refiners and a larger benefit for unprofitable refiners.

Kern is a small, privately-owned petroleum refiner in Bakersfield, California, and the only producer of gasoline and diesel fuel between San Francisco and Los Angeles. Kern has operated for 85 years and employs approximately 145 people. In addition to California Air Resources Board (CARB) Reformulated Gasoline and CARB Ultra-Low Sulfur Diesel Fuel, Kern blends biodiesel and, separately, produces renewable diesel via co-processing with a distillate stream. Kern does not own or operate upstream production or downstream retail or marketing facilities. All of Kern's gasoline and diesel is sold across its refinery loading rack to a broad range of customers in central California. Kern plays an important role in this market by leveling the supply and price playing fields for petroleum products in the San Joaquin Valley.

### **Alternative Fuel Mixture Excise Tax Credit**

The Alternative Fuel Mixture Excise Tax Credit provides a tax incentive of \$0.50 per gallon of alternative fuel used to produce an alternative fuel mixture. Kern has developed, permitted and registered the co-processing of biomass with petroleum to produce renewable diesel meeting ASTM specification D-975, which qualifies for the Alternative Fuel Mixture Tax Credit. Kern was the second refiner in the United States to obtain an EPA fuel registration for renewable diesel co-processed with a petroleum stream. The production economics of co-processing biomass are negative without the tax credit because – despite additional processing, maintenance, and capital costs – renewable diesel fuel receives no higher price in the marketplace than petroleum diesel. Kern cannot recover the cost of co-processing biomass without the credit because co-processing biomass to make renewable diesel is more expensive than the price at which Kern can sell the blended fuel.

### **Biodiesel Mixture (Blenders) Excise Tax Credit**

The Biodiesel Blenders Credit provides a \$1.00 per gallon tax incentive to blenders of biodiesel with petroleum diesel. Kern began purchasing biodiesel (B100) for blending in 2012, and currently purchases a blended biodiesel (B99). Kern faces stiff competition for biodiesel supply, which has limited availability in California and the general market. Kern cannot recover the cost of biodiesel without the credit, as the cost of biomass-based diesel is higher than the price at which Kern can sell the blended fuel.

Kern opposes misguided efforts to transform the Biodiesel Blenders Tax Credit to a domestic production credit. A production credit will disincentivize the domestic blending of biodiesel by insulating U.S. producers from foreign competition and increasing the price of domestic biodiesel. A production credit provides no guarantee that the biodiesel receiving the credit will be available to domestic blenders. With the benefit of the credit, a domestic producer could sell its biodiesel to the highest foreign bidder at a premium price, resulting in less biodiesel available



for domestic blenders and consumers. As a blenders credit, the biodiesel must be blended in the U.S. to receive the benefit of the credit.

The change to a production credit is also unnecessary given that most if not all producers are already receiving the benefit of the blenders credit. Under industry practice, blenders negotiate a split of the credit (or the anticipated credit) with producers. Shifting to a production credit would eliminate important competing biodiesel supply and domestic producers' incentive to split the credit. The result will be less biodiesel in the nation's fuel stream and higher fuel prices for consumers.

### **Permanent Extension/Extension and Phase-down Approach**

Kern supports permanent extension of these tax credits to incentivize the production of renewable fuels. In the alternative, Kern supports an extension and longer term phase-down of the tax credits to provide certainty and stability in the industry. In the past, Kern has supported legislation that would extend the alternative fuel mixture and biodiesel blenders tax credits for two full years with a gradual phase-down of the credits over three years as a reasonable transition for obligated parties to prepare for eventual elimination of the tax credits. This five year phase-down (or seven as proposed by previous Chairman Brady) will enable the biodiesel and renewable diesel markets to mature and become more competitive when the credits expire.

Timing is critical for both the Alternative Fuel Mixture and the Biodiesel Blenders Tax Credits as they expired at the end of 2017. Tax filing for the 2018 filing year was due April 15, 2019. Kern and other affected parties operated without the benefit of the credits for operational and planning purposes in 2018 and now in 2019. We urge you to act quickly to give guidance to the industry and support permanent credits or a multi-year extension to provide market certainty.

In conclusion, Kern urges the Committee to enact a permanent or long-term extension of the Alternative Fuel Mixture and Biodiesel Blenders Tax Credits. Kern supports a seven or five-year phase-down of the credits as previously proposed which will enable an orderly transition for businesses that have relied upon these tax credits for regulatory compliance. Kern is available to work with you and your staff to provide any further information and detail that may be needed and we would welcome the opportunity to meet.

Sincerely,



Jennifer M. Haley  
President

Hello,

Please find attached a letter in regards to the Senate Finance Committee's Energy Tax Extender Task Force on the New Energy Efficient Home Credit (IRC Section 45L). Please find below contact information for each signatory organization (each is copied to this email):

**National Multifamily Housing Council**

Cindy Chetti  
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Thanks,

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June 7, 2019

The Honorable John Thune  
Co-Lead Energy Task Force  
Senate Committee on Finance  
219 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow  
Co-Lead Energy Task Force  
Senate Committee on Finance  
219 Dirksen Senate Office Building  
Washington, DC 20510

Dear Senators Thune and Stabenow:

The undersigned real estate associations would like to take this opportunity to encourage the Senate Finance Committee's Energy Task Force to support a long-term extension of the New Energy Efficient Home Credit (IRC 45L). While we strongly support the *Tax Extender and Disaster Relief Act of 2019* (S. 617) that would extend the New Energy Efficient Home Credit through 2019, we believe a permanent renewal would provide tax certainty and spur the development of high-performance residential properties.

The New Energy Efficient Home Credit enables builders of new single-family homes and low-rise multifamily properties (three stories or less) to claim a \$2,000 per-unit tax credit for those residences that achieve a 50 percent energy savings for heating and cooling over the 2006 International Energy Conservation Code. The provision has provided a powerful incentive for contractors to install higher performance building systems and upgraded appliances than they otherwise could justify within the *pro forma* for developing the property.

The New Energy Efficient Home Tax Credit is very well designed and managed:

First and foremost, home builders and multifamily developers appear willing to modify their designs and specifications to take advantage of this incentive, which is exactly the type of behavior Congress should use a tax credit to encourage. In other words, the credit truly modifies behavior.

Second, the tax incentive provides home buyers and multifamily residents a downstream benefit as well. Residents receive ongoing benefits from the provision through reduced utility expenditures associated with high-efficiency building systems.

Third, the credit is designed only to reward true energy efficiency: Utilization of the Section 45L credit requires additional upfront engineering, construction costs, and expenses for a third-party professional to certify that the property has achieved the required metrics.

Fourth, the *Tax Cuts and Jobs Act* (Public Law 115-97) enhanced the credit. By significantly reducing the incidence of the individual alternative minimum tax (AMT), Congress removed a key impediment preventing some home builders, multifamily developers, and investors from using the incentive. As a general business credit, Section 45L is ineligible to offset the AMT.

We strongly believe that the New Energy Efficient Home Credit should be made permanent so that it can continue to motivate the development of high-performance residential properties.

Thank you considering our views.

Sincerely,

National Multifamily Housing Council  
National Apartment Association  
National Association of Home Builders  
National Association of REALTORS®  
National Leased Housing Association  
Leading Builders of America  
The Real Estate Roundtable

CC:

Senate Finance Committee Chairman Charles Grassley  
Senate Finance Committee Ranking Member Ron Wyden  
Senator Pat Roberts  
Senator John Cornyn  
Senator Bill Cassidy  
Senator Thomas Carper  
Senator Sheldon Whitehouse  
Senator Maggie Hassan



June 11, 2019

The Honorable John Thune  
Co-Lead, Energy Taskforce  
511 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Debbie Stabenow  
Co-Lead, Energy Taskforce  
731 Hart Senate Office Building  
Washington, D.C. 20510

Dear Senators Thune and Stabenow,

The Large Public Power Council (LPPC), comprised of 27 of the nation's largest publicly-owned electric utilities serving over 30 million U.S. customers, encourages the Senate Finance Committee Bipartisan Energy Taskforce to consider the unique characteristics of public power entities when determining its recommendations for addressing the latest round of expiring provisions.<sup>1</sup> LPPC supports your efforts to work in a bipartisan manner to develop long-term solutions to temporary tax policies and appreciates the invitation to be part of the conversation.<sup>2</sup>

As taxpayer-owned entities, LPPC members rely on tax-exempt municipal bonds to fund their energy infrastructure projects. Because they are public entities, they cannot use tax credits that are available to private-sector, taxable electric utilities without entering into complex, costly, and inefficient third-party arrangements. Therefore, without comparable incentives, LPPC's 30 million customers will not get the full benefit of our national renewable energy goals.

As a general matter, LPPC supports direct-pay bonds (not subject to sequestration) as a comparable renewable energy tax incentive to efficiently deliver taxpayer dollars to publicly-owned energy projects. LPPC also supports technology-neutral energy tax policy that provides the flexibility of fuel choices to achieve the national objectives of the policy. **A combination of a technology-neutral energy tax policy combined with public power entities' ability to monetize those incentives through direct-pay bonds would deliver the strongest results in support of Congress' goals.**

Thank you very much for your consideration, and the invitation for stakeholders to work with you to help develop long-term solutions to temporary tax policy. LPPC looks forward to working with you and if you have any additional questions, please do not hesitate to reach out to me directly at 202-298-3723.

Sincerely,

John Di Stasio, President  
Large Public Power Council

---

<sup>1</sup> LPPC's members have a presence in 21 states including Washington, Texas, Maryland, Pennsylvania, Georgia, North Carolina, New York, Michigan, Arizona, Colorado, Virginia, California, and Ohio. Its members own and operate more than 71,000 megawatts of generation capacity in technologies such as wind, solar, hydroelectric, natural gas, nuclear, and other renewable energy sources. Additionally, LPPC members are firmly committed to maintaining affordable rates, and their customers, on average, pay ten percent less than the national average for electricity.

<sup>2</sup> Although LPPC's priorities do not cover a specific expiring energy tax incentive, public power utilities will be impacted by any short or long-term solutions.

#### LARGE PUBLIC POWER COUNCIL MEMBER COMPANIES

American Municipal Power (AMP) / Austin Energy / Chelan County PUD No.1 / Clark Public Utilities / Colorado Springs Utilities / CPS Energy / ElectriCities of NC, Inc. / Grand River Dam Authority / Grant County PUD / Imperial Irrigation District / JEA / Long Island Power Authority / Los Angeles Department of Water & Power / Lower Colorado River Authority / MEAG Power / Nebraska Public Power District / New York Power Authority / Omaha Public Power District / Orlando Utilities Commission / Platte River Power Authority / Puerto Rico Electric Power Authority / SMUD / Salt River Project / Santee Cooper / Seattle City Light / Snohomish County PUD No.1 / Tacoma Public Utilities

## COALITION FOR ENERGY EFFICIENT JOBS & INVESTMENT

June 5, 2019

The Honorable Mike Crapo  
Co-Lead  
Senate Finance Committee  
Taskforce on Cost Recovery  
239 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Benjamin Cardin  
Co-Lead  
Senate Finance Committee  
Taskforce on Cost Recovery  
509 Hart Senate Office Building  
Washington, D.C. 20510

Dear Senator Crapo and Senator Cardin,

The members of the Coalition for Energy Efficient Jobs & Investment (“Coalition”) commend your efforts to bring certainty to the temporary provisions of the tax code. We strongly agree with the sentiment expressed by Chairman Grassley and Ranking Member Wyden upon launching the taskforces, namely that long-term certainty is critical for these provisions to achieve their intended goal of promoting growth and investment. This is especially true of the Section 179D deduction for energy efficient commercial buildings, which has a proven track record of driving economic and employment growth in communities nationwide. **We strongly urge you to preserve and amplify these benefits by making permanent Section 179D and strengthening the incentive to further broaden its positive impact.**

### **Section 179D’s Broad Support and Impact**

Our organizations and companies represent a broad spectrum of the U.S. economy. As set forth on [Exhibit A](#), they include real estate, manufacturing, architecture, contracting, engineering, building services, financing, labor, education, environmental and energy efficiency advocates with a presence in communities large and small across all 50 states. We represent many small businesses that drive and sustain American job growth in urban and rural areas alike.

The breadth and diversity of our coalition underscores the broadly distributed impact of Section 179D. In fact, the provision’s title belies its true breadth because Section 179D applies to both commercial buildings as well as properties owned by federal, state, and local governments. These kinds of buildings can be found in every community, making Section 179D one of the most broadly-applicable temporary provisions in the tax code. As an illustration, the maps included as [Exhibit B](#) to this statement highlight the Section 179D projects that have been undertaken in the home states of Taskforce members by just one of our coalition members. Across our coalition’s full membership and the country as a whole, the number and diversity of Section 179D projects is many times greater.

The sweep of Section 179D’s support and impact – bridging industries and advocacy groups, businesses small and large, and organizations from coast-to-coast – is a testament to the tremendous success that Section 179D has already achieved, as well as its potential for the future.

## **A Proven Engine of Economic and Employment Growth**

Section 179D has leveraged billions of dollars in private capital, resulted in energy efficient enhancements to thousands of buildings, and created and preserved hundreds of thousands of jobs. This track record is why Section 179D has been extended on multiple occasions in the past. The certainty of permanence or a long-term extension of Section 179D, together with targeted reforms to the provision, can boost its contributions to our economy even more.

The benefits of Section 179D are confirmed by a recent economic impact study conducted by Regional Economic Models, Inc. (“REMI”), which is attached to this statement as [Exhibit C](#). The study in its entirety can be found [here](#). REMI’s conclusion is unequivocal, finding that “Section 179D is an engine of economic and employment growth.” In particular, an enhanced tax incentive for energy efficient commercial buildings, including reforms along the lines of those envisioned in Senator Cardin’s *Energy Efficiency Tax Incentives Act* (S. 2189 in the 113th Congress), could support up to 76,529 jobs and contribute almost \$7.4 billion toward our national GDP each year.

These results represent a significant return on the taxpayer investment in Section 179D, well in excess of the provision’s revenue cost. The study also confirms that long-term extension/permanence of the current version of Section 179D or making more modest changes to the incentive would have a substantial positive impact on economic and employment growth. Such approaches, which would strengthen the application of Section 179D in the context of non-profits, tribal governments, and pass-through entities such as partnerships and S-corporations, have been adopted by the Senate Finance Committee in the past on a bipartisan basis, as well as reflected in H.R. 3507, bipartisan legislation introduced in the House by Reps. Dave Reichert (R-WA), Earl Blumenauer (D-OR) and Tom Reed (R-NY), all members of the House Ways and Means Committee, in the 115th Congress.

## **The Continuing Need for Energy Efficiency Incentives**

The targeted incentive provided by Section 179D is essential to promote the proper allocation of incentives in the real estate development process. Commercial buildings are responsible for more than a third of U.S. electricity consumption, and the Department of Energy has set ambitious energy reduction goals to enhance the environment, bolster energy security, and prioritize economic resources. However, neither the owners nor tenants of commercial buildings have an adequate incentive to make the upfront investment associated with energy efficient improvements, because their higher cost is recouped by reduced energy consumption over time. In the case of building owners, this is because energy costs are generally borne by tenants. However, in multitenant structures a single tenant is unlikely to invest in improvements on their own.

Section 179D solves this incentive problem by encouraging building owners to install energy-efficient improvements that help their tenants save money on electricity, water, and climate control costs. It does so by accelerating the cost recovery of these improvements, which in turn stimulates additional investment and growth. While the Tax Cuts and Jobs Act (“TCJA”) modified and expanded certain cost recovery rules, these changes do not deliver the same impact



as Section 179D. In particular, while Section 179D provides a form of 100% expensing for certain real estate investments, the 100% expensing provision of TCJA (Section 168(k)) has limited applicability in the real estate context. Furthermore, the cost of the investments undertaken under Section 179D often exceed the limitation under the small business expensing provision (Section 179). Thus, while many of the reforms enacted in the TCJA are tremendously beneficial, they are not a substitute for the targeted incentive provided by Section 179D.

Beyond cost recovery, Section 179D's unique impact is amplified by the provision's high energy efficiency criteria, which stimulate innovation, entrepreneurship, and environmental enhancement in a way that the more generalized provisions of tax reform do not. In addition, Section 179D includes a unique allocation feature that provides an incentive for state and local governments to undertake energy efficiency projects – creating additional jobs and economic growth – notwithstanding the fact that they cannot take the tax deduction into account on their own. This feature provides cost-effective support for the development of energy-efficient buildings by school districts, state governments, and other public sector entities and ultimately saves taxpayer dollars through lower energy costs for public buildings. All of these reasons attest to the continued importance of retaining Section 179D in the tax code, along with enhancements to ensure that it continues to drive economic and employment growth, as well as enhance the environment and energy security.

### **The Importance of Long-Term Certainty**

The Joint Committee on Taxation's recent analysis of temporary tax provisions cites the negative consequences of uncertain tax policy, including "inefficiently reducing economic activity, depressing profits for businesses, and reducing individual well-being." These consequences are amplified in the context of Section 179D because the incentive is tied to construction projects that require considerable lead-time for planning and development. The uncertain availability of the Section 179D deduction from year-to-year substantially diminishes the incentive to incorporate energy efficient features into new and existing buildings, because the deduction can only be claimed in the year construction is completed. Even if Section 179D is extended through the end of this year as some have proposed, a developer planning a building that will be completed several years in the future would have no certainty about the availability of Section 179D going forward, and thus no tax incentive to include energy efficient upgrades. The end result is that the U.S. economy could lose out on billions of dollars of economic activity that would otherwise be driven by Section 179D. This underscores the urgency for Congress to move away from the practice of providing stopgap year-to-year extensions, and toward permanence to provide long-term certainty.

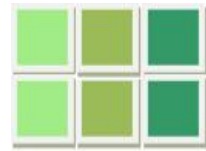
Given its role in supporting jobs and economic growth in communities across the country and its strong contribution to U.S. energy policy priorities, we strongly urge you to include the extension and enhancement of Section 179D among your priorities for this Congress. We look forward to working with you to ensure that tax incentives for energy efficient investment continue to be an engine of growth for our economy. Thank you for your consideration.

Sincerely,  
Coalition for Energy Efficient Jobs & Investment

## Exhibit A: Coalition for Energy Efficient Jobs & Investment Members

Air Conditioning Contractors of America  
Alliance to Save Energy  
Alliantgroup, LLC  
Ameresco  
American Council of Engineering Companies  
American Institute of Architects  
Associated General Contractors of America  
BLUE Energy Group  
Building Owners and Managers Association (BOMA) International  
Business Council for Sustainable Energy  
CCIM Institute  
Citizens for Responsible Energy Solutions  
Concord Energy Strategies  
Consolidated Edison Solutions  
Daikin US Corporation  
E2 (Environmental Entrepreneurs)  
Energy Systems Group  
Energy Tax Savers, Inc.  
ENGIE Services U.S.  
Entegrity  
Independent Electrical Contractors  
Institute of Real Estate Management  
Insulation Contractors Association of America  
Johnson Controls, Inc.  
Lexicon Lighting Technologies  
LightPro Software, LLC  
LuNex Lighting  
Micromega Systems, Inc.  
National Apartment Association  
National Association of College and University Business Officers (NACUBO)  
National Association of Electrical Distributors  
National Association of Energy Service Companies (NAESCO)  
National Association of REALTORS®  
National Electrical Manufacturers Association (NEMA)  
National Leased Housing Association  
National Multifamily Housing Council  
Rampart Partners LLC  
Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)  
Silicon Valley Leadership Group  
Smardt Chillers, Inc.  
Sustainable Performance Solutions LLC  
U.S. Green Building Council

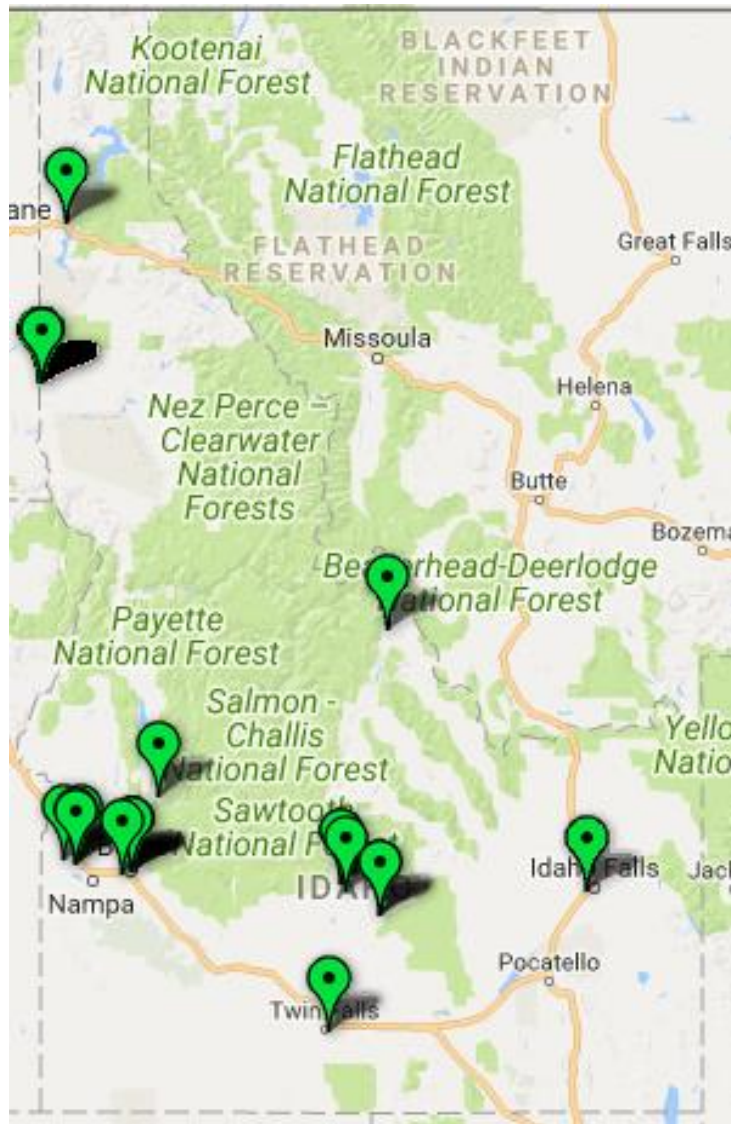
Exhibit B: Example Project Maps



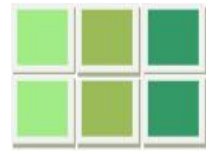
**Energy Tax Savers, Inc.**

The EPAct 179D Experts

# Idaho EPAct Project Map



## Idaho Area Projects

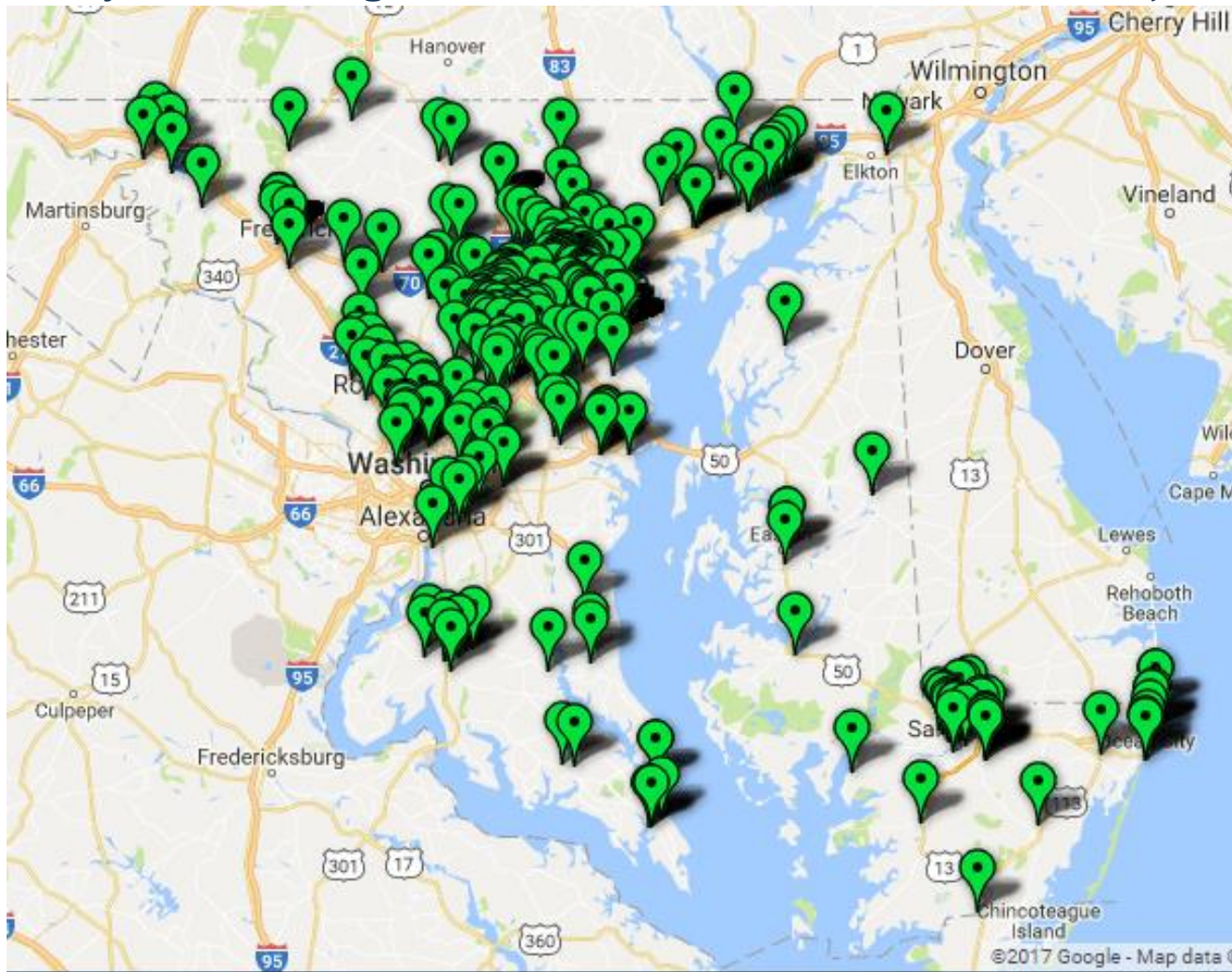


Energy Tax Savers, Inc.

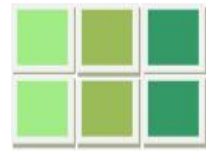
The EPAct 179D Experts

# Maryland, Washington DC, Baltimore, & Delaware EPAct Project Map

Maryland, Washington DC, Baltimore, and Delaware Area Projects





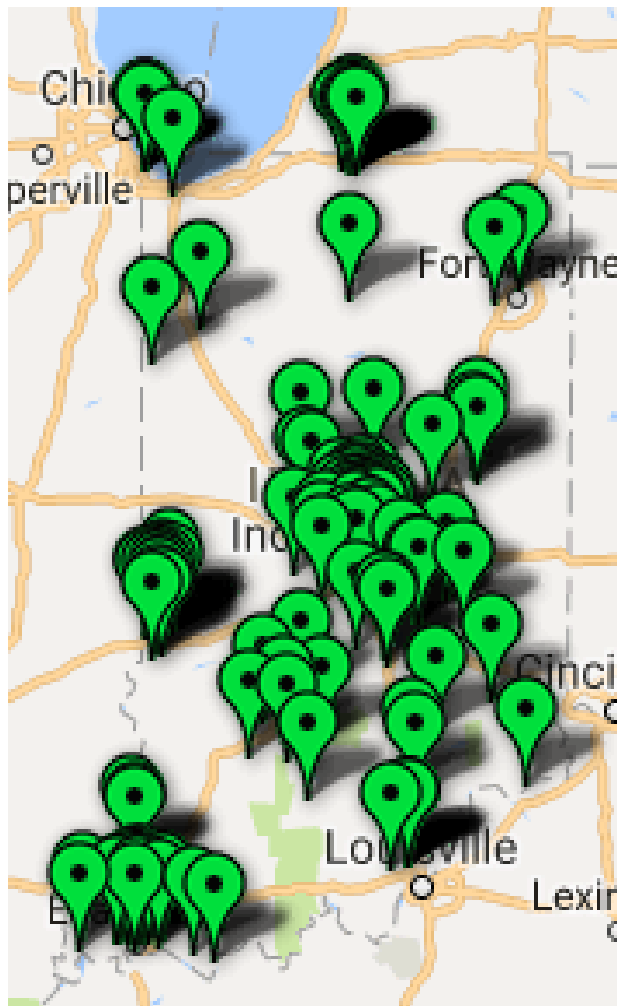


**Energy Tax Savers, Inc.**

The EPAct 179D Experts

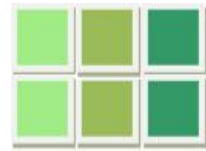
# Indiana EPAct Project Map

**Indiana Area Projects**



**Indianapolis Area Projects**



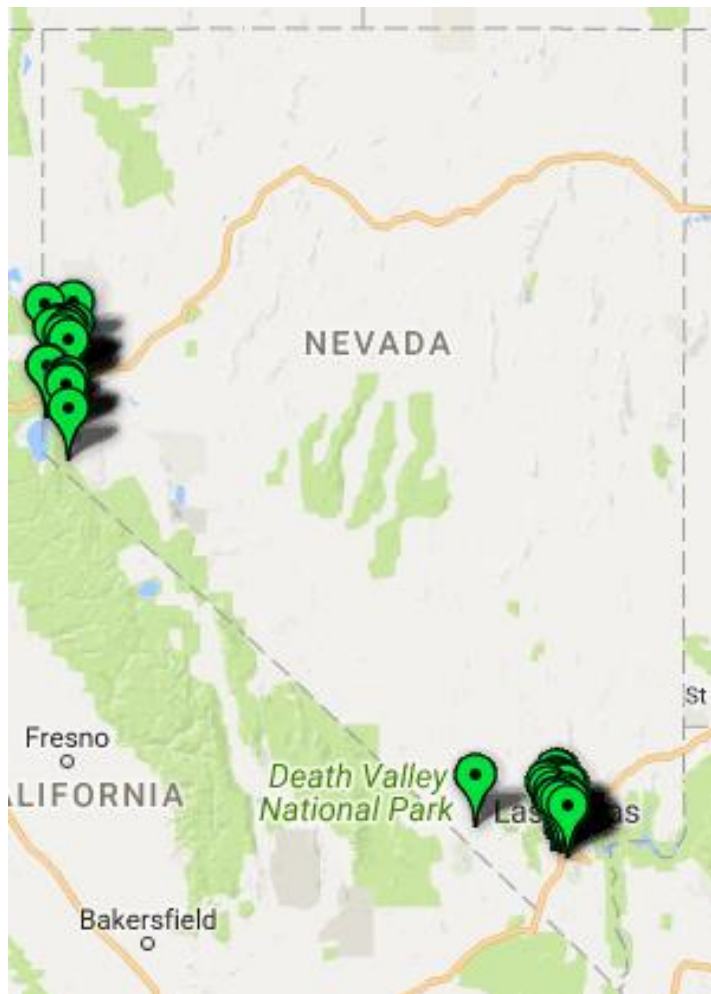


**Energy Tax Savers, Inc.**

The EPAct 179D Experts

# Nevada EPAct Project Map

## Nevada Area Projects (Las Vegas & Reno)



## Las Vegas Area Projects

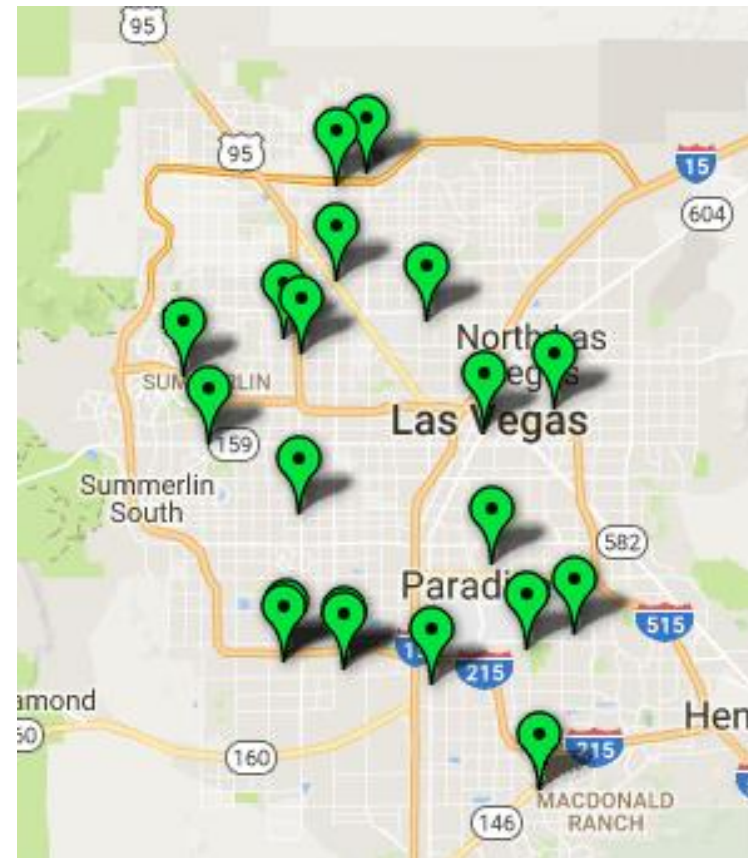


Exhibit C: REMI Study





**Analysis of Proposals to Enhance and Extend the Section  
179D Energy Efficient Commercial  
Buildings Tax Deduction**

**Prepared by Regional Economic Models, Inc. (REMI) May 2017**



REMI (Regional Economic Models, Inc.) is the nation's leading regional economic modeling and policy analysis firm. REMI provides PI+, TranSight, and Tax-PI modeling software, and technical analysis to federal, state, and regional government agencies, leading non-profit and trade organizations, universities, and consulting firms. We serve as economists, policy experts, and economic policy analysis modelers.

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## Executive Summary

Section 179D of the Internal Revenue Code, the Energy Efficient Commercial Buildings Deduction, was originally enacted by Congress as part of the Energy Policy Act of 2005 to promote energy independence. Section 179D promotes the proper allocation of incentives in the real estate development process. A key challenge to realizing the benefits of energy-efficient improvements is that the associated cost savings flow to building occupants, not developers. By helping offset the cost of energy efficient investments, Section 179D allows building owners to share in the incentive to install energy-efficient improvements that help their occupants save money on electricity, water, and climate control costs. In so doing, Section 179D promotes private-sector solutions to improve conservation practices and modernize national infrastructure.

In this analysis, REMI evaluates the economic impact of three potential approaches to the Section 179D deduction, which most recently expired at the end of 2016:

1. **Strengthening and Modernizing Section 179D**,<sup>1</sup> which would increase the value of the deduction to \$3.00 per square foot from \$1.80, increase the applicable energy efficiency standards, make it available to support improvements to existing as well as new buildings, and extend the deduction.
2. **Extension of Current Law Section 179D plus Expansion to Non-Profits and Tribal Governments**,<sup>2</sup> modeled on 2015 legislation developed by the Senate Finance Committee under Chairman Orrin Hatch (R-UT), which would extend the deduction, expand availability of the deduction to nonprofit organizations and tribal governments and increase the applicable energy efficiency standards.
3. **Extension of Current Law Section 179D**,<sup>3</sup> modeled on the two-year extension of current law enacted as part of the Protecting Americans from Tax Hikes (“PATH”) Act of 2015.

The results of this analysis show that in addition to advancing the goal of energy independence, **Section 179D is an engine of economic and employment growth**. As captured in the table below, this study quantifies these impacts, finding that:

- Strengthening and extending the Section 179D Energy-Efficiency Commercial Buildings Deduction will create jobs and expand the nation’s economy. These benefits would be compounded by increasing the dollar value of the deduction in accordance with several Congressional and administration proposals.
- These enhancements to Section 179D would support up to 76,529 jobs annually and contribute annually almost \$7.4 billion to national gross domestic product (“GDP”), as well as over \$5.7 billion towards national personal income.

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<sup>1</sup> Proposals along these lines include Title I of S. 2189, sponsored by Senator Cardin (D-MD) in the 113<sup>th</sup> Congress and the President’s FY 2017 Budget Proposal. See Description of Certain Revenue Provisions Contained in the President’s Fiscal Year 2017 Budget Proposal, Joint Committee on Taxation, July 2016, JCS-2-16.

<sup>2</sup> See Description of the Chairman’s Mark of a Bill to Extend Certain Expired Tax Provisions, July 17, 2015, JCX-101-15, and Description of the Chairman’s Modification to the Chairman’s Mark of a Bill to Extend Certain Expired Tax Provisions, July 21, 2015, JCX-103-15. In addition to the Senate Finance Committee extenders bill, other proposals along these lines include H.R. 6376, sponsored by Congressman Reichert (R-WA) in the 114<sup>th</sup> Congress.

<sup>3</sup> General Explanation of Tax Legislation Enacted in 2015, Joint Committee on Taxation, March 2016, JCS-1-16.

- Expanding the availability of the deduction to nonprofit organizations and tribal governments, while increasing the applicable energy efficiency standards, also provide clear positive impacts to the economy.

Table 1. Average Annual Economic Impacts for First Ten Years

	Strengthen and Modernize	Extension plus Expansion	Extension of Current Law
Jobs	76,529	39,388	40,749
GDP (millions of dollars)	7,398	3,730	3,860
Personal Income (millions of dollars)	5,729	3,017	3,128

## Introduction

Section 179D offers an enhanced tax deduction to offset the cost of investments in certain energy efficient commercial building property. A deduction of up to \$1.80 per square foot is available to owners of new or existing buildings who install (1) interior lighting, (2) building envelope, or (3) heating, cooling, ventilation, or hot water system improvements that reduce the building's total energy and power cost by 50% or more in comparison to a building meeting minimum requirements set by ASHRAE Standard 90.1-2001 (for buildings and systems placed in service before January 1, 2016) or 90.1-2007 (for buildings and systems placed in service before January 1, 2017).

A deduction of up to \$0.60 per square foot is available to owners of buildings in which individual lighting, building envelope, or heating and cooling systems partially qualify to meet the applicable target levels, or through an interim rule for lighting fixtures promulgated by the IRS.

Table 2. Summary of 179D Tax Deductions <sup>4</sup>						
	Fully Qualifying Property	Partially Qualifying Property				Interim Lighting Rule
		IRS Notice (Effective Dates)	Envelope	HVAC and HW	Lighting	
Savings Requirements*	50%	2006-52 (1/1/06 - 12/31/08)	16 2/3%	16 2/3%	16 2/3%	25%-40% lower lighting power density (50% for warehouses)
		2008-40 (1/1/06 - 12/31/13)	10%	20%	20%	
		2012-26 (3/12/12 - 12/31/16)	10%	15%	25%	
Tax Deduction (not to exceed cost of qualifying property)	\$1.80/ft <sup>2</sup>		\$0.60/ft <sup>2</sup>	\$0.60/ft <sup>2</sup>	\$0.60/ft <sup>2</sup>	\$0.60/ft <sup>2</sup> times applicable percentage**

\* Savings refer to the reduction in the energy and power costs of the combined energy for the interior lighting, HVAC, and HW systems as compared to a reference building that meets the minimum requirements of ASHRAE Standard 90.1-2001 for buildings placed in service prior to 1/1/2016 and ASHRAE Standard 90.1-2007 for buildings placed in service on or after 1/1/2016.

\*\* The tax deduction is prorated depending on the reduction in LPD. See IRS Notice 2006-52 for the definition of "applicable percentage."

<sup>4</sup> ENERGY.GOV, Office of Energy Efficiency & Renewable Energy. <https://energy.gov/eere/buildings/179d-commercial-buildings-energy-efficiency-tax-deduction>

Energy savings must be calculated using qualified computer software, and certified by an independent third party in accordance with procedures established by the IRS.

Section 179D also includes an allocation provision that allows tax-exempt public entities to allocate the deduction to the designer of a building or efficiency project (such as an architect or engineer). This provision allows tax-exempt entities to transfer the value of the deduction to taxpayers that are able to realize its value, providing cost-effective support for the development of energy-efficient buildings by school districts, state governments, and other public sector entities. Ultimately, it helps save taxpayer money through lower energy costs.

As noted above, Section 179D was originally passed by Congress as part of the Energy Policy Act of 2005 in order to enhance the participation of the commercial building sector in the national effort to achieve energy independence through increased energy efficiency. According to the U.S. Department of Energy's Buildings Energy Data Book (March 2012)<sup>5</sup>, commercial buildings accounted for 18.6% of all primary energy consumption in the U.S. in 2010. Of this, electricity accounted for 77%, the majority of which (62.9%) went for lighting, heating, cooling, and ventilation.

Due to budget constraints, the deduction was initially enacted on a temporary, albeit multi-year, basis. Section 179D has since been included among a package of temporary tax provisions that have expired and been reinstated many times over the years. The provision was most recently extended through December 31, 2016 by the PATH Act of 2015 (Division Q of H.R. 2029).

The proposals considered in this analysis represent three potential approaches to continuing to provide tax incentives for energy efficient commercial buildings. These potential approaches are not exhaustive, but instead are intended to be illustrative in terms of the magnitude of economic and jobs impact that may be garnered from various ways to use the tax code to overcome barriers to investment in energy efficiency technologies. The proposal to strengthen and modernize Section 179D is a reform proposal, aimed at incentivizing the next generation of energy efficiency enhancements to new and existing commercial building stock. The model is based on previous proposals to reform Section 179D and, although it cannot be directly extrapolated, provides a proxy baseline for a proposal along the lines of a technology-neutral energy efficiency incentive in the context of tax reform. The remaining two proposals considered in the analysis demonstrate the significant economic and jobs impact of extending current law with modest expansions to the allocation provision to include nonprofit organizations and tribal governments while increasing the applicable energy efficiency standards, as well as merely extending current law.

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<sup>5</sup> The Buildings Energy Data Book, developed by the Building Technologies Program within the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy, includes statistics on residential and commercial building energy consumption. <http://buildingsdatabook.eren.doe.gov/>

Figure 1. Buildings Share of U.S. Primary Energy Consumption, 1980-2010

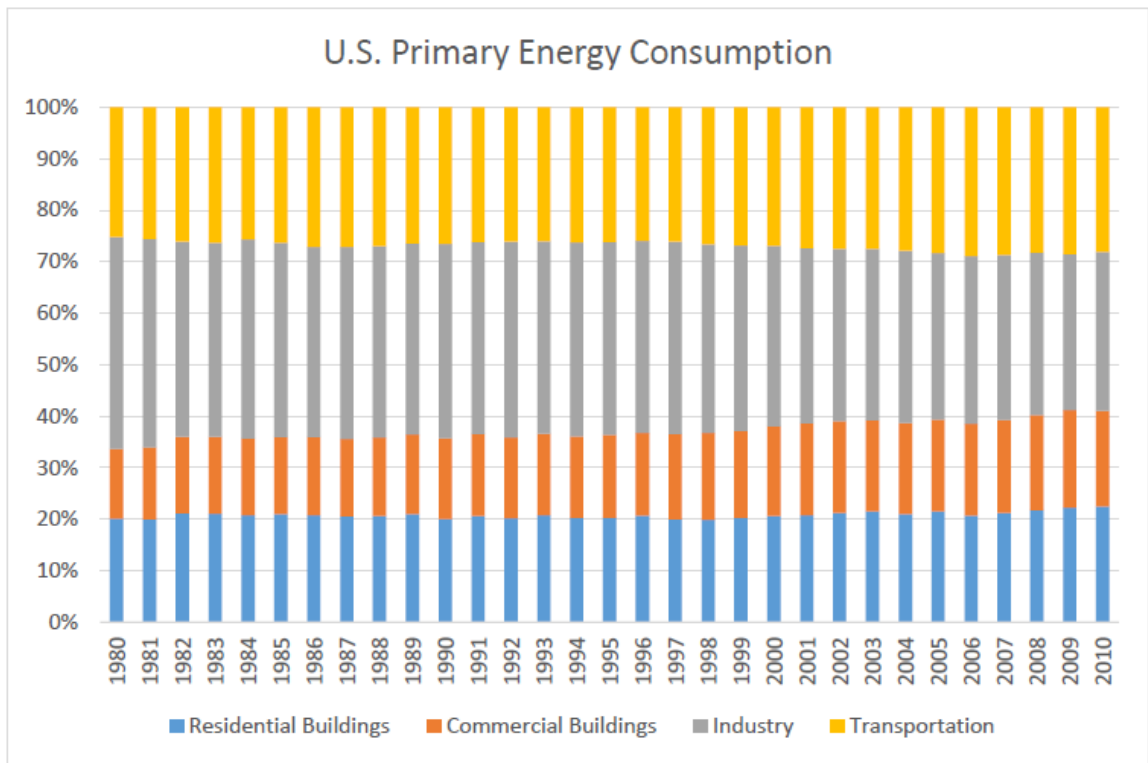


Figure 2. Commercial Sector Energy Consumption, 1980-2010

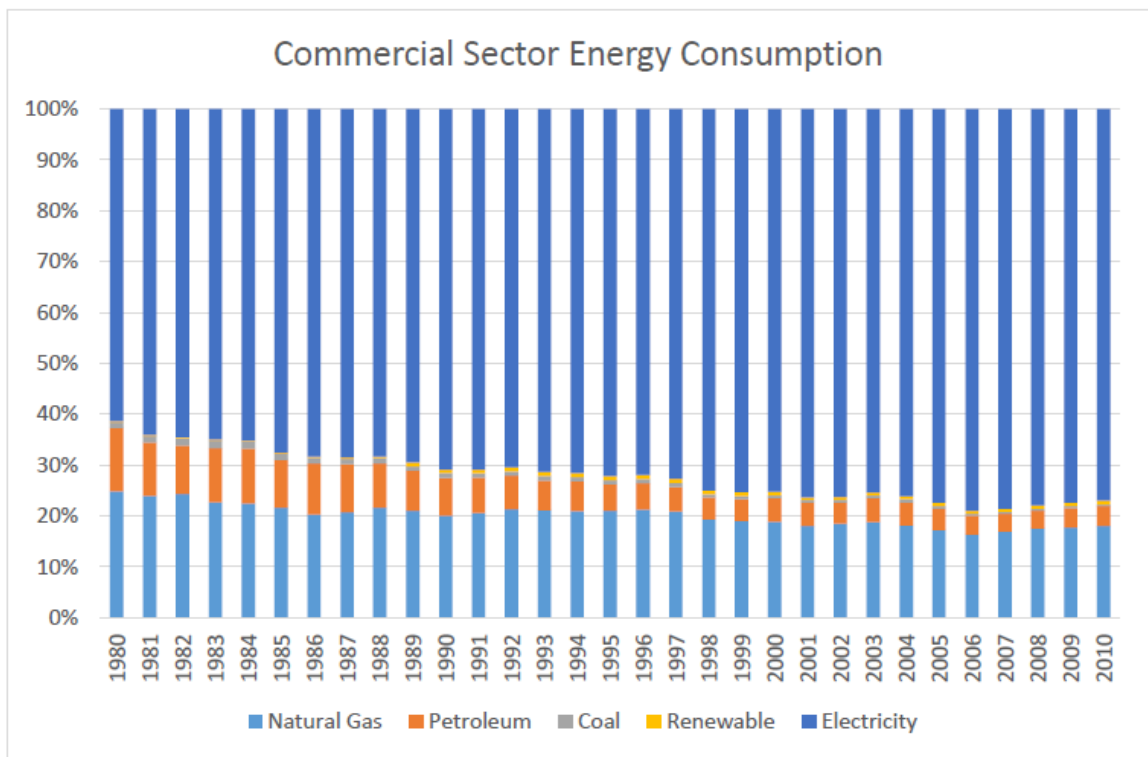
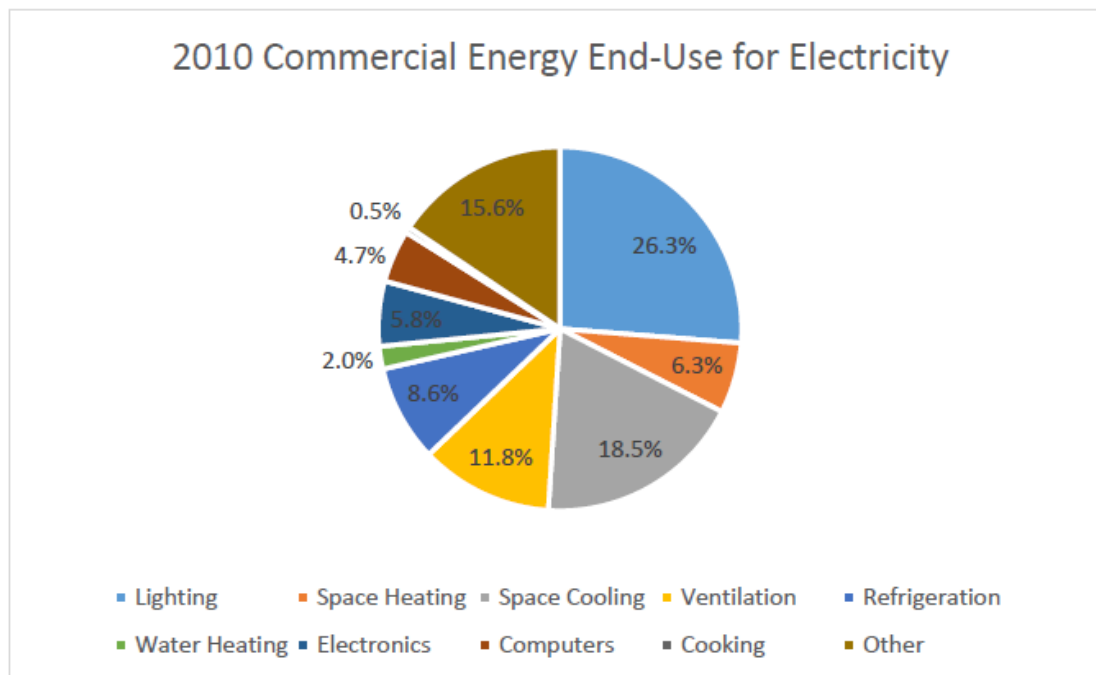




Figure 3. 2010 Commercial Energy End-Use for Electricity



## Policy Context and Modeling Approach

Energy efficiency policies, from regulations to tax incentives, result in significant implications for industries that design, construct, and maintain commercial buildings, as well as those that innovate, develop, and manufacture energy efficient enhancements. These industries play an important role in state and local economies, creating jobs and revenue. Public policies that support these businesses can have both direct and indirect effects on a region's employment, economic output, and personal income.

Expanding, modifying, and extending Section 179D would reduce utility bills, lower energy costs, cut pollution, and increase jobs and economic growth. Commercial buildings have high energy needs. In addition to large energy bills for building owners and tenants (an estimated \$38 billion a year goes towards lighting alone, according to the U.S. Department of Energy), commercial buildings can also put great strain on the nation's power grids during peak periods. Developing more efficient buildings helps ensure a steady supply of affordable power and significantly lowers operating costs for businesses and taxpayers alike.

Section 179D promotes the proper allocation of incentives in the real estate development process. As noted above, a key challenge to realizing the benefits of energy efficient improvements is that the associated cost savings flow to building occupants, not developers. In the short-term, Section 179D enables building owners to offset the often costly investments associated with energy efficiency enhancements. In the longer term, occupants of buildings that take advantage of the deduction realize significantly lower energy costs, the benefits of leading-edge design and construction that enhances the building's long-term market value, and the benefits of a reduced environmental footprint.

Section 179D has been an extremely effective tool in both respects. Since its enactment in 2005, the

deduction has leveraged billions of dollars in private capital, resulting in the energy efficient construction and renovation of thousands of buildings, while creating and preserving hundreds of thousands of jobs. It has also encouraged the research and development of new energy efficient innovations, enhancing its contributions to economic and employment growth. As such, it stands as of the best examples of the tremendous impact that tax incentives can have on financing energy efficient property<sup>6</sup>.

While different tax structures are likely to result in different economic outcomes, one can only estimate the likely effect of tax proposals with integrated fiscal and economic analysis. To conduct this analysis, we first estimate the direct tax implications of the proposed changes. Next, we translate these direct tax changes into “policy variables” which are input into the REMI PI+ 70-sector model of the United States. We then run the model, which calculates the macroeconomic effect of the policy change, including detailed employment, output, income and other macroeconomic changes.

The REMI model is an integrated econometric/input-output/general equilibrium model of the US economy. It incorporates income and product accounts, demographics, price and production costs changes, and the labor market. Changes in taxes result in economic changes throughout the economy. While tax policy proposals should be carefully considered, we can best evaluate the economic implications of these policies using fiscal and economic analysis. This includes not only the direct tax changes to firms and individuals, but also how these changes affect the dynamic responses of firms and individuals in the overall economy.

A more detailed overview of the REMI model and its structure is available in Appendix 1.

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<sup>6</sup> Statement for the Record of The American Institute of Architects for the Hearing on “Benefits of Permanent Tax Policy for America’s Job Creators”, before the U.S. House of Representatives Committee on Ways & Means, April 8, 2014.

<http://waysandmeans.house.gov/wp-content/uploads/2015/10/The-American-Institute-of-Architects-040814SFR.pdf>

# Economic Impact Analysis: Strengthening and Modernizing Section 179D

## Overview

Strengthening and modernizing Section 179D is a reform proposal, aimed at incentivizing the next generation of energy efficiency enhancements to new and existing commercial building stock. The economic model presented below is based on the President's FY 2017 Budget Proposal, which would have increased the value of the deduction to \$3.00 per square foot from \$1.80, made it available to support improvements to existing as well as new buildings, and extended the availability of the provision. In addition, it would have updated the applicable energy efficiency standard of a reference building to the minimum requirement of ASHRAE Standard 90.1-2010. Many of these modifications and enhancements are also reflected in Title I of the Energy Efficiency Tax Incentives Act (S. 2189 in the 113th Congress).

As noted above, although this model is based on previous Section 179D proposals and it cannot be directly extrapolated, it provides a proxy baseline for a proposal along the lines of a technology neutral energy efficiency incentive in the context of tax reform.

## Methodology and Model Inputs

In order to analyze the potential economic impact of modifying and extending the deduction for energy efficient commercial building property, REMI evaluated both the costs and benefits of the program in terms of the value of the tax deduction, the additional leveraged investment spending it directly generates, and the future energy savings that results from it. These factors were estimated for both the private and government sectors.

### Value of Tax Deduction

The cost of the President's FY 2017 Budget Proposal was estimated by the Joint Committee on Taxation to be \$6.7 billion over 10 years<sup>7</sup>. This analysis projects the economic impact of the first ten years of this policy.

Since the JCT reports in fiscal years, and the REMI model is based on calendar years, the revenue costs were converted to represent calendar years. The value of the tax deduction represented by the JCT's estimate of the budget effect was estimated based on the assumption of an effective corporate tax rate of 18.6%<sup>8</sup> (the budget estimate was divided by the tax rate to yield an estimate of the tax deduction). Since the tax deduction is available for both private and government-owned buildings, also taking into account the modifications intended to strengthen and modernize the law, it was split between the two sectors based on Bureau of Economic Analysis nonresidential structures investment data for 2015<sup>9</sup>,

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<sup>7</sup> Estimated Budget Effects of the Revenue Provisions Contained in the President's Fiscal Year 2017 Budget Proposal, Joint Committee on Taxation, March 24, 2016, JCX-15-16.

<sup>8</sup> International Comparisons of Corporate Income Tax Rates, CBO, March 2017.  
<https://www.cbo.gov/publication/52419>

<sup>9</sup> BEA Table 4.7. Investment in Private Nonresidential Fixed Assets by Industry Group and Legal Form of Organization, and Table 7.5B. Investment in Government Fixed Assets. <http://www.bea.gov>

resulting in a breakdown of 81% private and 19% government. This contrasts with the assumptions used to evaluate the other two proposals.

Table 3. Estimated Budget Effect of Section 179D Tax Deduction: Strengthen and Modernize

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
JCT Budget Estimates (Fiscal Year, millions of 2016 dollars)	(\$363)	(\$714)	(\$727)	(\$743)	(\$734)	(\$706)	(\$708)	(\$695)	(\$672)	(\$670)
JCT Budget Estimates (Calendar Year, millions of 2016 dollars)	(\$542)	(\$717)	(\$731)	(\$741)	(\$727)	(\$707)	(\$705)	(\$689)	(\$672)	(\$670)

Table 4. Total Value of Section 179D Tax Deductions: Strengthen and Modernize

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total Value of Tax Deductions (millions of 2016 dollars)	\$2,911	\$3,856	\$3,930	\$3,983	\$3,909	\$3,798	\$3,789	\$3,706	\$3,610	\$3,602
Private Sector (81%)	\$2,362	\$3,129	\$3,189	\$3,231	\$3,171	\$3,082	\$3,074	\$3,006	\$2,929	\$2,922
Government Sector (19%)	\$549	\$728	\$742	\$751	\$737	\$717	\$715	\$699	\$681	\$680

The value of these tax deductions is used to estimate associated investment and energy cost savings to private businesses and governments. Since Section 179D accelerates to the year placed in service the depreciation deduction for the cost of the energy efficient asset (up to the allowed amount), therefore just changing the timing of when the deduction may be taken, the impact on the federal budget (deficit) is not accounted for.

The full amount of the tax deduction earned by private commercial businesses each year is entered as a reduction in their cost of doing business.

Although governments do not file federal tax returns, and therefore cannot receive the tax deduction directly, they are allowed to pass the tax deduction on to the contractor responsible for designing their energy efficiency project. This amount is entered as a reduction in the cost of doing business for the professional, scientific, and technical services industry.

Table 5. Recipients of Benefit of Section 179D Tax Deduction: Strengthen and Modernize

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Recipient of Tax Deduction (millions of 2016 dollars)	\$2,911	\$3,856	\$3,930	\$3,983	\$3,909	\$3,798	\$3,789	\$3,706	\$3,610	\$3,602
Private Commercial Businesses	\$2,362	\$3,129	\$3,189	\$3,231	\$3,171	\$3,082	\$3,074	\$3,006	\$2,929	\$2,922
Professional Services	\$549	\$728	\$742	\$751	\$737	\$717	\$715	\$699	\$681	\$680

## Leveraged Investment

Since the tax deduction is based on only a portion of the investment spending, it is assumed that each dollar of tax deduction is leveraged by a certain amount of investment spending. The tax incentive is calculated on a per square foot basis, and varies depending on the measured (and certified) improvement in energy efficiency. This leverage value was calculated from industry data provided to REMI by a third-party certifier<sup>10</sup>, which showed an average of \$3.12 of private investment for each \$1 of federal tax deduction. This translates into an almost 17 to 1 ratio of investment to tax reduction. The incentive is meant to produce a rising share of energy efficient investment activity over a 5-10 year period, at which point the standard for receiving the incentive could be adjusted to account for the development of new technologies. For this reason, the amount of the leveraged investment is phased in over the ten year period of analysis, beginning at 50% in 2017, then incrementing 5% each year, reaching 95% in 2026.

The leveraged investment spending is split between labor (30%) and materials (70%) based on Garrett-Peltier<sup>11</sup>, and the materials distributed to equipment type (75% HVAC, 25% Lighting) based on industry data provided to REMI by a third-party certifier.

Table 6. Leveraged Investment of Section 179D Tax Deduction: Strengthen and Modernize

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Leveraged Investment (millions of 2016 dollars)	\$4,545	\$6,622	\$7,363	\$8,083	\$8,543	\$8,895	\$9,465	\$9,835	\$10,146	\$10,685
Private Sector	\$3,688	\$5,373	\$5,974	\$6,558	\$6,931	\$7,217	\$7,679	\$7,979	\$8,231	\$8,669
A/C and Boiler equipment (53%)	\$1,947	\$2,836	\$3,153	\$3,462	\$3,659	\$3,809	\$4,053	\$4,212	\$4,345	\$4,576
Light fixtures, etc. (17%)	\$635	\$925	\$1,028	\$1,129	\$1,193	\$1,242	\$1,322	\$1,374	\$1,417	\$1,492
Labor (30%)	\$1,106	\$1,612	\$1,792	\$1,967	\$2,079	\$2,165	\$2,304	\$2,394	\$2,469	\$2,601
Government Sector	\$858	\$1,250	\$1,389	\$1,525	\$1,612	\$1,678	\$1,786	\$1,856	\$1,914	\$2,016
A/C and Boiler equipment (53%)	\$453	\$660	\$733	\$805	\$851	\$886	\$943	\$980	\$1,010	\$1,064
Light fixtures, etc. (17%)	\$148	\$215	\$239	\$263	\$277	\$289	\$307	\$319	\$330	\$347
Labor (30%)	\$257	\$375	\$417	\$458	\$484	\$504	\$536	\$557	\$574	\$605

## Energy Savings

Industry data provided to REMI by a third-party certifier was used to calculate the average annual energy savings per dollar of tax deduction. This value was determined to be 8% (8 cents of future energy savings for every dollar of tax deduction). The total value of energy savings to the private sector was entered as a reduction in the cost of production, spread across all commercial industries in the model. A corresponding decrease in demand for electricity was also entered<sup>12</sup>. For energy savings to government,

<sup>10</sup> Energy Tax Savers, Inc.

<sup>11</sup> Employment Estimates for Energy Efficiency Retrofits of Commercial Buildings, Dr. Heidi Garrett-Peltier, Political Economy Research Institute, University of Massachusetts, Amherst, June 2011.

<sup>12</sup> Given the availability of capacity in electric power generation, it is assumed that reduced utility demand will not have a significant impact on investment in power plants. Rate adjustments and potential environmental and health effects of reduced demand for electricity were also not taken into account.

an increase in government spending was entered due to the availability of more resources for other areas of the budget as a result of the lower energy costs. As with the private sector, a corresponding decrease in demand for electricity was entered.

Table 7. Energy Savings of Section 179D Tax Deduction: Strengthen and Modernize

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Energy Savings (millions of 2016 dollars)	\$236	\$548	\$866	\$1,188	\$1,504	\$1,811	\$2,118	\$2,418	\$2,710	\$3,001
Private Sector	\$191	\$444	\$702	\$964	\$1,220	\$1,470	\$1,718	\$1,962	\$2,199	\$2,435
Government Sector	\$44	\$103	\$163	\$224	\$284	\$342	\$400	\$456	\$511	\$566

Table 8. Reduced Demand for Utilities of Section 179D Tax Deduction: Strengthen and Modernize

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Utility Demand (millions of 2016 dollars)	(\$236)	(\$548)	(\$866)	(\$1,188)	(\$1,504)	(\$1,811)	(\$2,118)	(\$2,418)	(\$2,710)	(\$3,001)
Private Sector	(\$191)	(\$444)	(\$702)	(\$964)	(\$1,220)	(\$1,470)	(\$1,718)	(\$1,962)	(\$2,199)	(\$2,435)
Government Sector	(\$44)	(\$103)	(\$163)	(\$224)	(\$284)	(\$342)	(\$400)	(\$456)	(\$511)	(\$566)

### Investment Offset

For this analysis, we assume that for each dollar spent in a given year on investment in order to achieve the energy efficiency requirements, an equal dollar of investment is removed from spending spread over the next ten years. Therefore it is assumed that the tax deduction incentivizes the timing of the investment, leading to more immediate investment instead of longer term investment that is spread over many years.

Table 9. Investment Offset of Section 179D Tax Deduction: Strengthen and Modernize

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Investment Offset (millions of 2016 dollars)	(\$455)	(\$1,117)	(\$1,853)	(\$2,661)	(\$3,516)	(\$4,405)	(\$5,352)	(\$6,335)	(\$7,350)	(\$8,418)
Private Sector	(\$369)	(\$906)	(\$1,503)	(\$2,159)	(\$2,852)	(\$3,574)	(\$4,342)	(\$5,140)	(\$5,963)	(\$6,830)
Government Sector	(\$86)	(\$211)	(\$350)	(\$502)	(\$663)	(\$831)	(\$1,010)	(\$1,195)	(\$1,387)	(\$1,588)

## Economic Impact Results

REMI modeled the scenario related to the President's FY 2017 Budget Proposal to modify and extend the deduction for energy efficient building property over the ten-year time period 2017-2026 based on the revenue score provided by the Joint Committee on Taxation. Over the first ten years of the extension, the net leveraged investment, energy savings, and accelerated tax deduction combined yield a net average gain of 76,529 jobs per year nationwide (see Figure 4). The construction industry gains the majority of these jobs (over 17,000), while Manufacturing, Trade, and Professional Services combined account for over 23,000 jobs. This is a result of the direct investment in energy efficiency technology and associated building construction and/or retrofitting. The Utilities industry loses some jobs (-1,750) due to reduced demand for electricity as a result of the increased energy efficiency.

Figure 4. Strengthen and Modernize: Total and Average Jobs

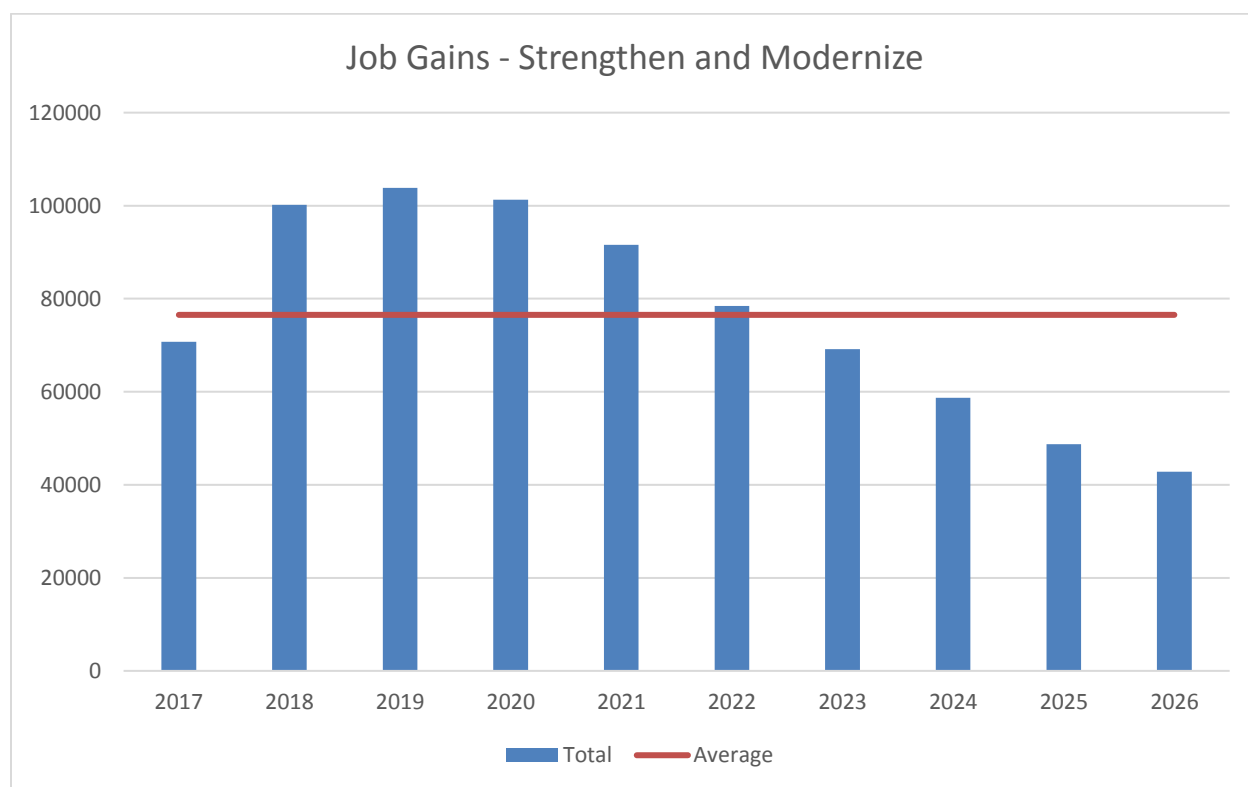
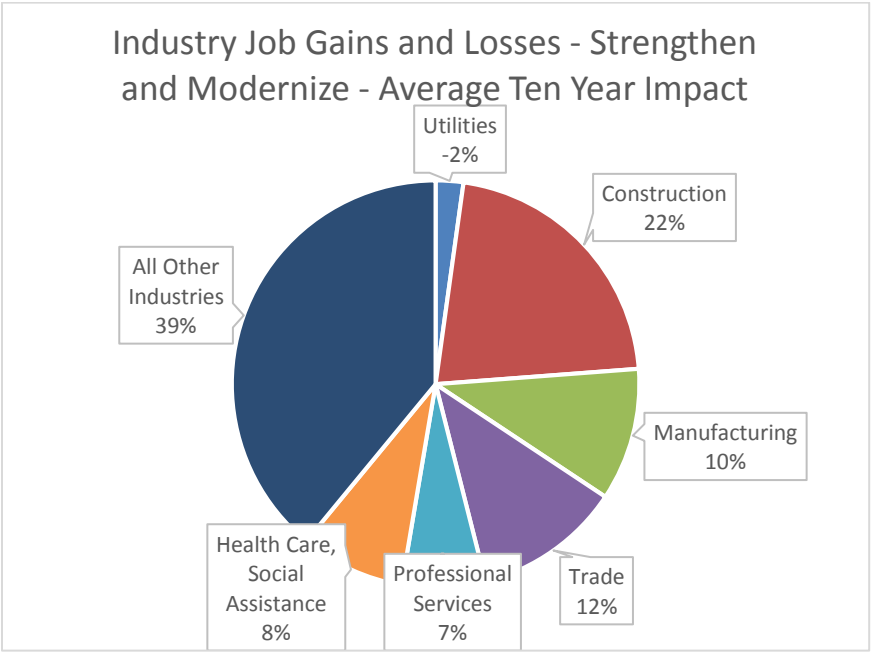
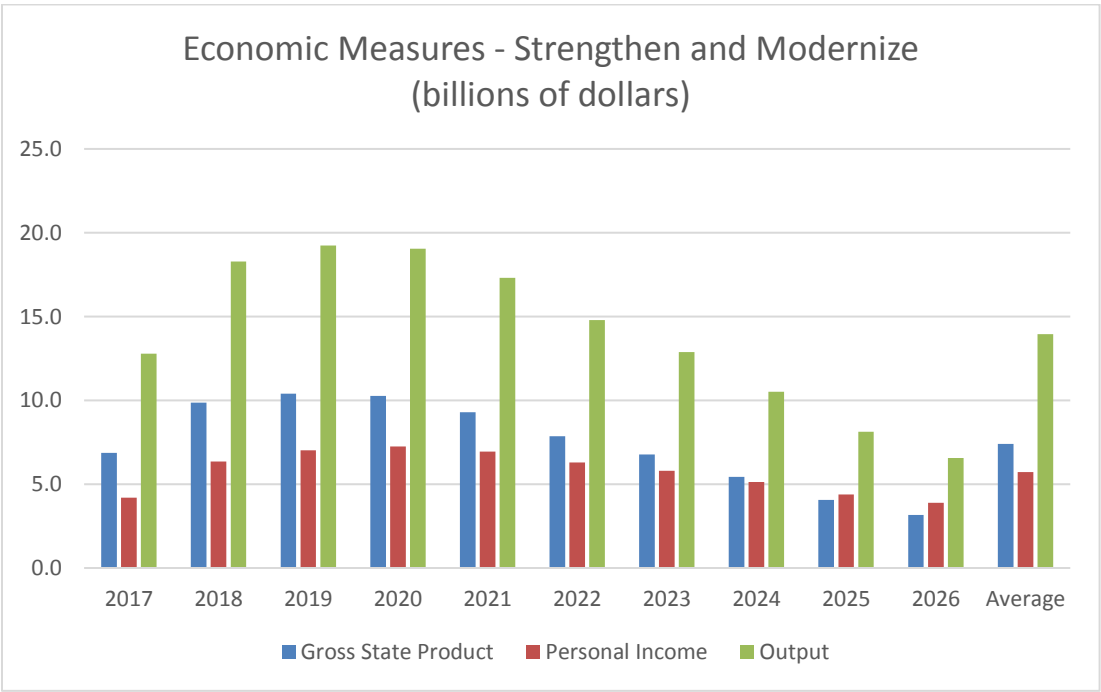


Figure 5. Strengthen and Modernize: Industry Jobs



In addition to the employment impact, Gross Domestic Product increased by an average of \$7.4 billion nationwide. Similarly, personal income increased an average of \$5.7 billion, while increased output averaged \$14 billion.

Figure 6. Strengthen and Modernize: Economic Measures





# Economic Impact Analysis: Extension and Expansion of Section 179D

## Overview

As noted above, the 2015 legislative proposal developed by the Senate Finance Committee under Chairman Hatch would permit non-profit organizations (as defined in Section 501(c)(3) of the tax code) and tribal governments to allocate the deduction to the person primarily responsible for designing the property in the same manner as is allowed for public property. This change would create new opportunities for tax-exempt entities to enjoy the benefits of energy efficient improvements. Additionally, the modification would increase the applicable energy efficiency standards to ASHRAE 90.1-2007, and extend the deduction.

## Methodology and Model Inputs

In order to analyze the potential economic impact of expanding and extending the deduction for energy efficient commercial building property, REMI evaluated both the costs and benefits of the program in terms of the value of the tax deduction, the additional leveraged investment spending it directly generates, and the future energy savings that results from it. These factors were estimated for both the private and government sectors.

### Value of Tax Deduction

The cost of the Senate Finance Committee proposal for one year was estimated by the Joint Committee on Taxation to be \$315 million over 10 years<sup>13</sup>. This analysis projects the economic impact of the first ten years of an extension based upon JCT's evaluation of this one-year extension.

Since the JCT reports in fiscal years, and the REMI model is based on calendar years, the revenue costs were converted to represent calendar years. The value of the tax deduction represented by the JCT's estimate of the budget effect was estimated based on the assumption of an effective corporate tax rate of 18.6% (the budget estimate was divided by the tax rate to yield an estimate of the tax deduction).

Since the tax deduction is available for both private and government-owned buildings, but the participants of the current program are primarily government entities, it was split between the two sectors based on a breakdown of 20% private and 80% government (this assumption differs from that used in the Extension of Current Law scenario based on Bureau of Economic Analysis nonresidential structures investment data for 2015<sup>14</sup> along with Bureau of Labor Statistics employment data for 2015<sup>15</sup> that reports nonresidential fixed assets of non-profits to be 9% of the private sector, and tribal governments to be 2% of the government sector, shifting the weight more towards the private sector).

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<sup>13</sup> Estimated Revenue Effects of the Chairman's Modification to the Chairman's Mark of a Bill to Extend Certain Expired Provisions Scheduled for Markup by the Committee on Finance on July 21, 2015, Joint Committee on Taxation, July 21, 2015, JCX-104-15.

<sup>14</sup> BEA Table 4.7. Investment in Private Nonresidential Fixed Assets by Industry Group and Legal Form of Organization, and Table 7.5B. Investment in Government Fixed Assets. <http://www.bea.gov>

<sup>15</sup> BLS Quarterly Census of Employment and Wages data was used to determine the tribal government proportion of state and local government. <http://www.bls.gov>

Table 10. Estimated Budget Effect of Section 179D Tax Deduction: Extension and Expansion

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Based on JCT Revenue Estimates (Fiscal Year, millions of 2016 dollars)	(\$295)	(\$353)	(\$346)	(\$339)	(\$333)	(\$328)	(\$324)	(\$321)	(\$318)	(\$315)
Based on JCT Revenue Estimates (Calendar Year, millions of 2016 dollars)	(\$383)	(\$351)	(\$344)	(\$338)	(\$332)	(\$327)	(\$323)	(\$320)	(\$317)	(\$315)

Table 11. Total Value of Section 179D Tax Deductions: Extension and Expansion

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total Value of Tax Deductions (millions of 2016 dollars)	\$2,060	\$1,888	\$1,851	\$1,815	\$1,784	\$1,758	\$1,737	\$1,719	\$1,704	\$1,694
Private Sector (20%)	\$412	\$378	\$370	\$363	\$357	\$352	\$347	\$344	\$341	\$339
Government Sector (80%)	\$1,648	\$1,511	\$1,481	\$1,452	\$1,427	\$1,406	\$1,390	\$1,375	\$1,363	\$1,355

The value of these tax deductions are used to estimate associated investment and energy cost savings to private commercial businesses, including non-profits, and government entities, including tribal governments. Since Section 179D accelerates to the year placed in service the depreciation deduction for the cost of the energy efficient asset (up to the allowed amount), therefore just changing the timing of when the deduction may be taken, the impact on the federal budget (deficit) is not accounted for.

The full amount of the tax deduction earned by private for-profit commercial businesses each year is entered as a reduction in their cost of doing business.

Although non-profits and governments do not file federal tax returns, and therefore cannot receive the tax deduction directly, they are allowed to pass the tax deduction on to the contractor responsible for designing their energy efficiency project. This amount is entered as a reduction in the cost of doing business for the professional, scientific, and technical services industry.

Table 12. Recipients of Benefit of Section 179D Tax Deduction: Extension and Expansion

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Recipient of Tax Deduction (millions of 2016 dollars)	\$2,060	\$1,888	\$1,851	\$1,815	\$1,784	\$1,758	\$1,737	\$1,719	\$1,704	\$1,694
Private Commercial Businesses	\$412	\$378	\$370	\$363	\$357	\$352	\$347	\$344	\$341	\$339
Professional Services	\$1,648	\$1,511	\$1,481	\$1,452	\$1,427	\$1,406	\$1,390	\$1,375	\$1,363	\$1,355

### Leveraged Investment

Since the tax deduction is based on only a portion of the investment spending, it is assumed that each dollar of tax deduction is leveraged by a certain amount of investment spending. The tax incentive is calculated on a per square foot basis, and varies depending on the measured (and certified) improvement in energy efficiency. This leverage value was calculated from industry data provided to REMI by a third-party certifier, which showed an average of \$3.12 of private investment for each \$1 of federal tax deduction. This translates into an almost 17 to 1 ratio of investment to tax reduction. The incentive is meant to produce a rising share of energy efficient investment activity over a 5-10 year period, at which point the standard for receiving the incentive could be adjusted to account for the development of new technologies. For this reason, the amount of the leveraged investment is phased in over the ten year period of analysis, beginning at 50% in 2017, then incrementing 5% each year, reaching 95% in 2026.

The leveraged investment spending is split between labor (30%) and materials (70%) based on Garrett-Peltier, and the materials distributed to equipment type (75% HVAC, 25% Lighting) based on industry data provided to REMI by a third-party certifier.

Table 13. Leveraged Investment of Section 179D Tax Deduction: Extension and Expansion

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Leveraged Investment (millions of 2016 dollars)	\$3,217	\$3,243	\$3,467	\$3,683	\$3,898	\$4,117	\$4,340	\$4,563	\$4,788	\$5,024
Private Sector	\$643	\$649	\$693	\$737	\$780	\$823	\$868	\$913	\$958	\$1,005
A/C and Boiler equipment (53%)	\$340	\$342	\$366	\$389	\$412	\$435	\$458	\$482	\$505	\$530
Light fixtures, etc. (17%)	\$111	\$112	\$119	\$127	\$134	\$142	\$149	\$157	\$165	\$173
Labor (30%)	\$193	\$195	\$208	\$221	\$234	\$247	\$260	\$274	\$287	\$301
Government Sector	\$2,574	\$2,595	\$2,774	\$2,946	\$3,119	\$3,294	\$3,472	\$3,650	\$3,830	\$4,019
A/C and Boiler equipment (53%)	\$1,358	\$1,370	\$1,464	\$1,555	\$1,646	\$1,739	\$1,833	\$1,927	\$2,022	\$2,121
Light fixtures, etc. (17%)	\$443	\$447	\$478	\$507	\$537	\$567	\$598	\$628	\$659	\$692
Labor (30%)	\$772	\$778	\$832	\$884	\$936	\$988	\$1,041	\$1,095	\$1,149	\$1,206

### Energy Savings

Industry data provided to REMI by a third-party certifier was used to calculate the average annual energy savings per dollar of tax deduction. This value was determined to be 8% (8 cents of future energy savings for every dollar of tax deduction). The total value of energy savings to the private sector was entered as a reduction in the cost of production, spread across all commercial industries in the model. A corresponding decrease in demand for electricity was also entered. For energy savings to government, an increase in government spending was entered due to the availability of more resources for other areas of the budget as a result of the lower energy costs. As with the private sector, a corresponding decrease in demand for electricity was entered.

Table 14. Energy Savings of Section 179D Tax Deduction: Extension and Expansion

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Energy Savings (millions of 2016 dollars)	\$167	\$320	\$469	\$616	\$760	\$903	\$1,043	\$1,182	\$1,320	\$1,457
Private Sector	\$33	\$64	\$94	\$123	\$152	\$181	\$209	\$236	\$264	\$291
Government Sector	\$133	\$256	\$375	\$493	\$608	\$722	\$835	\$946	\$1,056	\$1,166

Table 15. Reduced Demand for Utilities of Section 179D Tax Deduction: Extension and Expansion

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Utility Demand (millions of 2016 dollars)	(\$167)	(\$320)	(\$469)	(\$616)	(\$760)	(\$903)	(\$1,043)	(\$1,182)	(\$1,320)	(\$1,457)
Private Sector	(\$33)	(\$64)	(\$94)	(\$123)	(\$152)	(\$181)	(\$209)	(\$236)	(\$264)	(\$291)
Government Sector	(\$133)	(\$256)	(\$375)	(\$493)	(\$608)	(\$722)	(\$835)	(\$946)	(\$1,056)	(\$1,166)

### Investment Offset

For this analysis, we assume that for each dollar spent in a given year on investment in order to achieve the energy efficiency requirements, an equal dollar of investment is removed from spending spread over the next ten years. Therefore it is assumed that the tax deduction incentivizes the timing of the investment, leading to more immediate investment instead of longer term investment that is spread over many years.

Table 16. Investment Offset of Section 179D Tax Deduction: Extension and Expansion

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Investment Offset (millions of 2016 dollars)	(\$322)	(\$646)	(\$993)	(\$1,361)	(\$1,751)	(\$2,163)	(\$2,597)	(\$3,053)	(\$3,532)	(\$4,034)
Private Sector	(\$64)	(\$129)	(\$199)	(\$272)	(\$350)	(\$433)	(\$519)	(\$611)	(\$706)	(\$807)
Government Sector	(\$257)	(\$517)	(\$794)	(\$1,089)	(\$1,401)	(\$1,730)	(\$2,077)	(\$2,442)	(\$2,825)	(\$3,227)

## Economic Impact Results

REMI modeled the scenario related to the proposal to extend and expand the deduction for energy efficient building property over the ten-year time period 2017-2026 based on the revenue score provided by the Joint Committee on Taxation. Over the first ten years of the extension, the net leveraged investment, energy savings, and accelerated tax deduction combined yield a net average gain of 39,388 jobs per year nationwide (see Figure 7). The construction industry gains the majority of these jobs (just under 8,200), while Manufacturing, Trade, and Professional Services combined account for almost 11,000 jobs. This is a result of the direct investment in energy efficiency technology and associated building construction and/or retrofitting. The Utilities industry loses some jobs (-880) due to reduced demand for electricity as a result of the increased energy efficiency.

Figure 7. Extension and Expansion: Total and Average Jobs

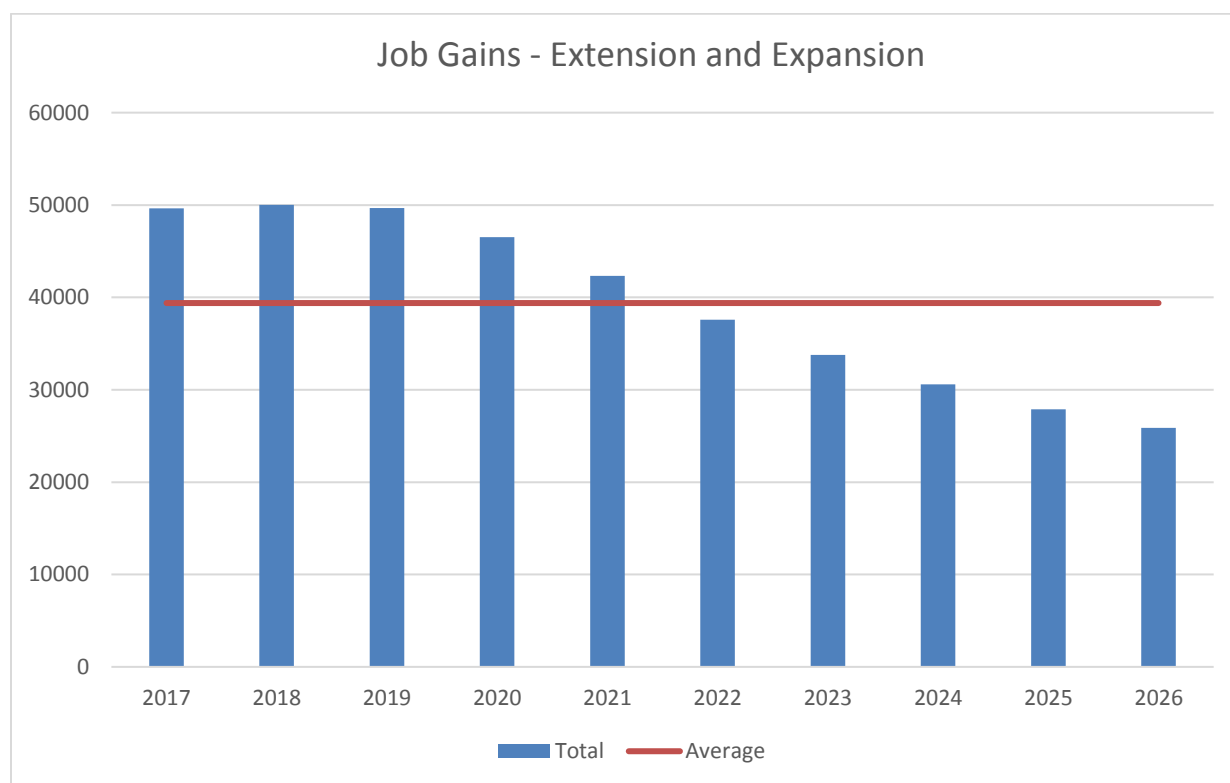
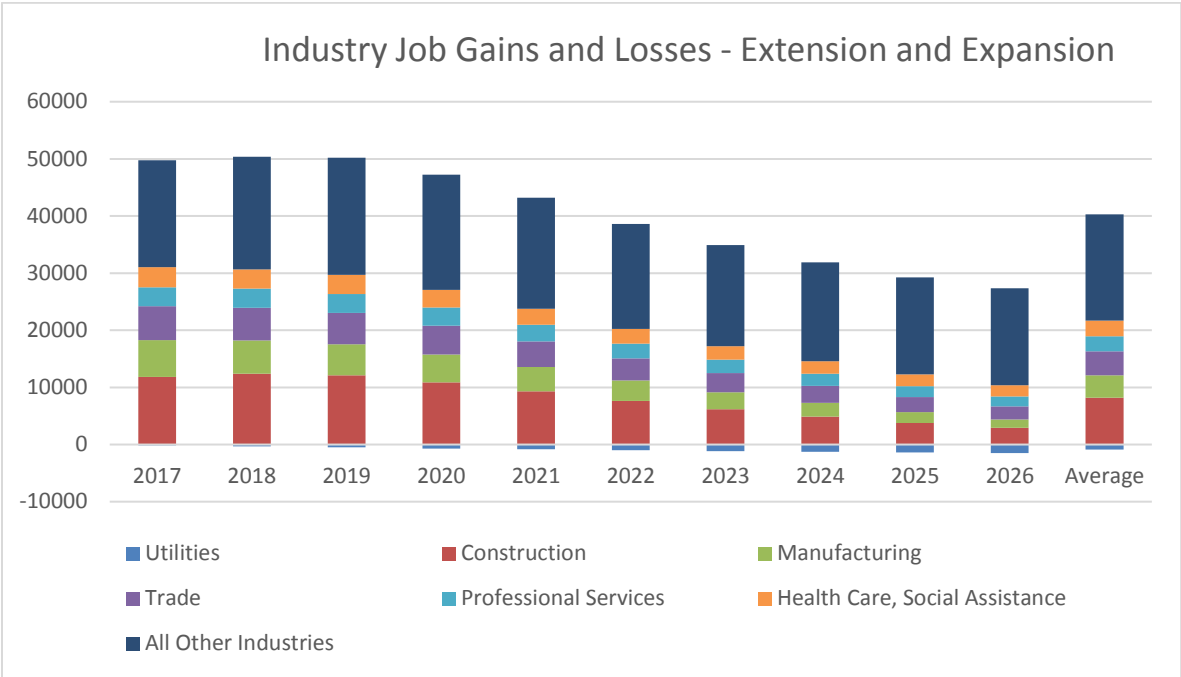
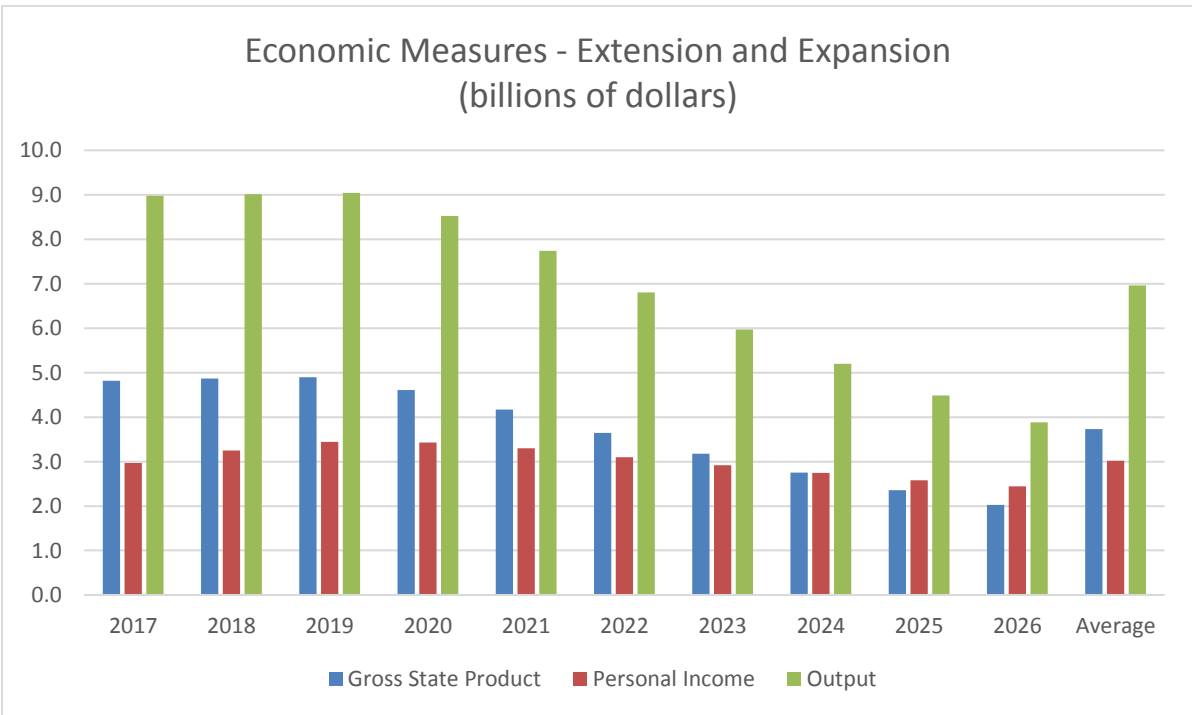


Figure 8. Extension and Expansion: Industry Jobs



In addition to the employment impact, Gross Domestic Product increased by an average of \$3.7 billion nationwide. Similarly, personal income increased an average of \$3 billion, while increased output averaged \$7 billion.

Figure 9. Extension and Expansion: Economic Measures



## Economic Impact Analysis: Extension of Current Law Section 179D

### Overview

As a temporary tax provision, Section 179D has experienced numerous expirations and extensions since its enactment. This cycle frustrates the achievement of the policy goals for the incentive, since energy efficiency projects, like other construction projects, require considerable lead-time for planning and development. A long-term extension of Section 179D would provide certainty about the availability of the tax incentives, to support future hiring, manufacturing, and development decisions.

### Methodology and Model Inputs

In order to analyze the potential economic impact of extending Section 179D as it exists under current law, REMI evaluated both the costs and benefits of the program in terms of the value of the tax deduction, the additional leveraged investment spending it directly generates, and the future energy savings that results from it. These factors were estimated for both the private and government sectors.

### Value of Tax Deduction

The cost of the proposal to extend Section 179D for one year was estimated by the Joint Committee on Taxation to be \$324 million over 10 years<sup>16</sup>. This analysis projects the economic impact of the first ten years of an extension based upon JCT's evaluation of this one-year extension.

Since the JCT reports in fiscal years, and the REMI model is based on calendar years, the revenue costs were converted to represent calendar years. The value of the tax deduction represented by the JCT's estimate of the budget effect was estimated based on the assumption of an effective corporate tax rate of 18.6% (the budget estimate was divided by the tax rate to yield an estimate of the tax deduction). Since the tax deduction is available for both private and government-owned buildings, but the participants of the current program are primarily government entities, it was split between the two sectors based on a breakdown of 15% private and 85% government.

Table 17. Estimated Budget Effect of Section 179D Tax Deduction: Extension of Current Law

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Based on JCT Revenue Estimates (Fiscal Year, millions of 2016 dollars)	(\$302)	(\$363)	(\$355)	(\$348)	(\$342)	(\$337)	(\$333)	(\$329)	(\$326)	(\$324)
Based on JCT Revenue Estimates (Calendar Year, millions of 2016 dollars)	(\$392)	(\$361)	(\$353)	(\$347)	(\$341)	(\$336)	(\$332)	(\$328)	(\$326)	(\$324)

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<sup>16</sup> Estimated Budget Effects of Division Q of Amendment #2 to the Senate Amendment to H.R. 2029 (Rules Committee Print 114-40), The "Protecting Americans from Tax Hikes Act of 2015", Joint Committee on Taxation, December 16, 2015, JCX-143-15.

Table 18. Total Value of Section 179D Tax Deductions: Extension of Current Law

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total Value of Tax Deductions (millions of 2016 dollars)	\$2,109	\$1,941	\$1,899	\$1,863	\$1,832	\$1,806	\$1,785	\$1,765	\$1,750	\$1,742
Private Sector (15%)	\$316	\$291	\$285	\$279	\$275	\$271	\$268	\$265	\$263	\$261
Government Sector (85%)	\$1,793	\$1,650	\$1,614	\$1,583	\$1,557	\$1,535	\$1,517	\$1,500	\$1,488	\$1,481

The value of these tax deductions is used to estimate associated investment and energy cost savings to private businesses and governments. Since Section 179D accelerates to the year placed in service the depreciation deduction for the cost of the energy efficient asset (up to the allowed amount), therefore just changing the timing of when the deduction may be taken, the impact on the federal budget (deficit) is not accounted for.

The full amount of the tax deduction earned by private commercial businesses each year is entered as a reduction in their cost of doing business.

Although governments do not file federal tax returns, and therefore cannot receive the tax deduction directly, they are allowed to pass the tax deduction on to the contractor responsible for designing their energy efficiency project. This amount is entered as a reduction in the cost of doing business for the professional, scientific, and technical services industry.

Table 19. Recipients of Benefit of Section 179D Tax Deduction: Extension of Current Law

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Recipient of Tax Deduction (millions of 2016 dollars)	\$2,109	\$1,941	\$1,899	\$1,863	\$1,832	\$1,806	\$1,785	\$1,765	\$1,750	\$1,742
Private Commercial Businesses	\$316	\$291	\$285	\$279	\$275	\$271	\$268	\$265	\$263	\$261
Professional Services	\$1,793	\$1,650	\$1,614	\$1,583	\$1,557	\$1,535	\$1,517	\$1,500	\$1,488	\$1,481

### Leveraged Investment

Since the tax deduction is based on only a portion of the investment spending, it is assumed that each dollar of tax deduction is leveraged by a certain amount of investment spending. The tax incentive is calculated on a per square foot basis, and varies depending on the measured (and certified) improvement in energy efficiency. This leverage value was calculated from industry data provided to REMI by a third-party certifier, which showed an average of \$3.12 of private investment for each \$1 of federal tax deduction. This translates into an almost 17 to 1 ratio of investment to tax reduction. The incentive is meant to produce a rising share of energy efficient investment activity over a 5-10 year period, at which point the standard for receiving the incentive could be adjusted to account for the development of new technologies. For this reason, the amount of the leveraged investment is phased in over the ten year period of analysis, beginning at 50% in 2017, then incrementing 5% each year, reaching 95% in 2026.



The leveraged investment spending is split between labor (30%) and materials (70%) based on Garrett-Peltier, and the materials distributed to equipment type (75% HVAC, 25% Lighting) based on industry data provided to REMI by a third-party certifier.

Table 20. Leveraged Investment of Section 179D Tax Deduction: Extension of Current Law

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Leveraged Investment (millions of 2016 dollars)	\$3,292	\$3,333	\$3,558	\$3,781	\$4,004	\$4,230	\$4,459	\$4,684	\$4,918	\$5,167
Private Sector	\$494	\$500	\$534	\$567	\$601	\$635	\$669	\$703	\$738	\$775
A/C and Boiler equipment (53%)	\$261	\$264	\$282	\$299	\$317	\$335	\$353	\$371	\$389	\$409
Light fixtures, etc. (17%)	\$85	\$86	\$92	\$98	\$103	\$109	\$115	\$121	\$127	\$133
Labor (30%)	\$148	\$150	\$160	\$170	\$180	\$190	\$201	\$211	\$221	\$233
Government Sector	\$2,799	\$2,833	\$3,024	\$3,214	\$3,404	\$3,596	\$3,790	\$3,981	\$4,180	\$4,392
A/C and Boiler equipment (53%)	\$1,477	\$1,496	\$1,596	\$1,696	\$1,797	\$1,898	\$2,001	\$2,102	\$2,207	\$2,318
Light fixtures, etc. (17%)	\$482	\$488	\$521	\$553	\$586	\$619	\$652	\$685	\$720	\$756
Labor (30%)	\$840	\$850	\$907	\$964	\$1,021	\$1,079	\$1,137	\$1,194	\$1,254	\$1,318

### Energy Savings

Industry data provided to REMI by a third-party certifier was used to calculate the average annual energy savings per dollar of tax deduction. This value was determined to be 8% (8 cents of future energy savings for every dollar of tax deduction). The total value of energy savings to the private sector was entered as a reduction in the cost of production, spread across all commercial industries in the model. A corresponding decrease in demand for electricity was also entered. For energy savings to government, an increase in government spending was entered due to the availability of more resources for other areas of the budget as a result of the lower energy costs. As with the private sector, a corresponding decrease in demand for electricity was entered.

Table 21. Energy Savings of Section 179D Tax Deduction: Extension of Current Law

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Energy Savings (millions of 2016 dollars)	\$171	\$328	\$481	\$632	\$780	\$926	\$1,071	\$1,214	\$1,355	\$1,496
Private Sector	\$26	\$49	\$72	\$95	\$117	\$139	\$161	\$182	\$203	\$224
Government Sector	\$145	\$279	\$409	\$537	\$663	\$787	\$910	\$1,032	\$1,152	\$1,272

Table 22. Reduced Demand for Utilities of Section 179D Tax Deduction: Extension of Current Law

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Utility Demand (millions of 2016 dollars)	(\$171)	(\$328)	(\$481)	(\$632)	(\$780)	(\$926)	(\$1,071)	(\$1,214)	(\$1,355)	(\$1,496)
Private Sector	(\$26)	(\$49)	(\$72)	(\$95)	(\$117)	(\$139)	(\$161)	(\$182)	(\$203)	(\$224)
Government Sector	(\$145)	(\$279)	(\$409)	(\$537)	(\$663)	(\$787)	(\$910)	(\$1,032)	(\$1,152)	(\$1,272)

### Investment Offset

For this analysis, we assume that for each dollar spent in a given year on investment in order to achieve the energy efficiency requirements, an equal dollar of investment is removed from spending spread over the next ten years. Therefore it is assumed that the tax deduction incentivizes the timing of the investment, leading to more immediate investment instead of longer term investment that is spread over many years.

Table 23. Investment Offset of Section 179D Tax Deduction: Extension of Current Law

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Investment Offset (millions of 2016 dollars)	(\$329)	(\$663)	(\$1,018)	(\$1,396)	(\$1,797)	(\$2,220)	(\$2,666)	(\$3,134)	(\$3,626)	(\$4,143)
Private Sector	(\$49)	(\$99)	(\$153)	(\$209)	(\$270)	(\$333)	(\$400)	(\$470)	(\$544)	(\$621)
Government Sector	(\$280)	(\$563)	(\$866)	(\$1,187)	(\$1,527)	(\$1,887)	(\$2,266)	(\$2,664)	(\$3,082)	(\$3,521)

### Economic Impact Results

REMI modeled the scenario related to a long-term extension of the temporary PATH Act extension of the deduction for energy efficient building property over the ten-year time period 2017-2026 based on the revenue score provided by the Joint Committee on Taxation. Over the first ten years of the extension, the net leveraged investment, energy savings, and accelerated tax deduction combined yield a net average gain of 40,749 jobs per year nationwide (see Figure 10). The construction industry gains the majority of these jobs (over 8,400), while Manufacturing, Trade, and Professional Services combined account for over 11,000 jobs. This is a result of the direct investment in energy efficiency technology and associated building construction and/or retrofitting. The Utilities industry loses some jobs (-900) due to reduced demand for electricity as a result of the increased energy efficiency.

Figure 10. Extension of Current Law: Total and Average Jobs

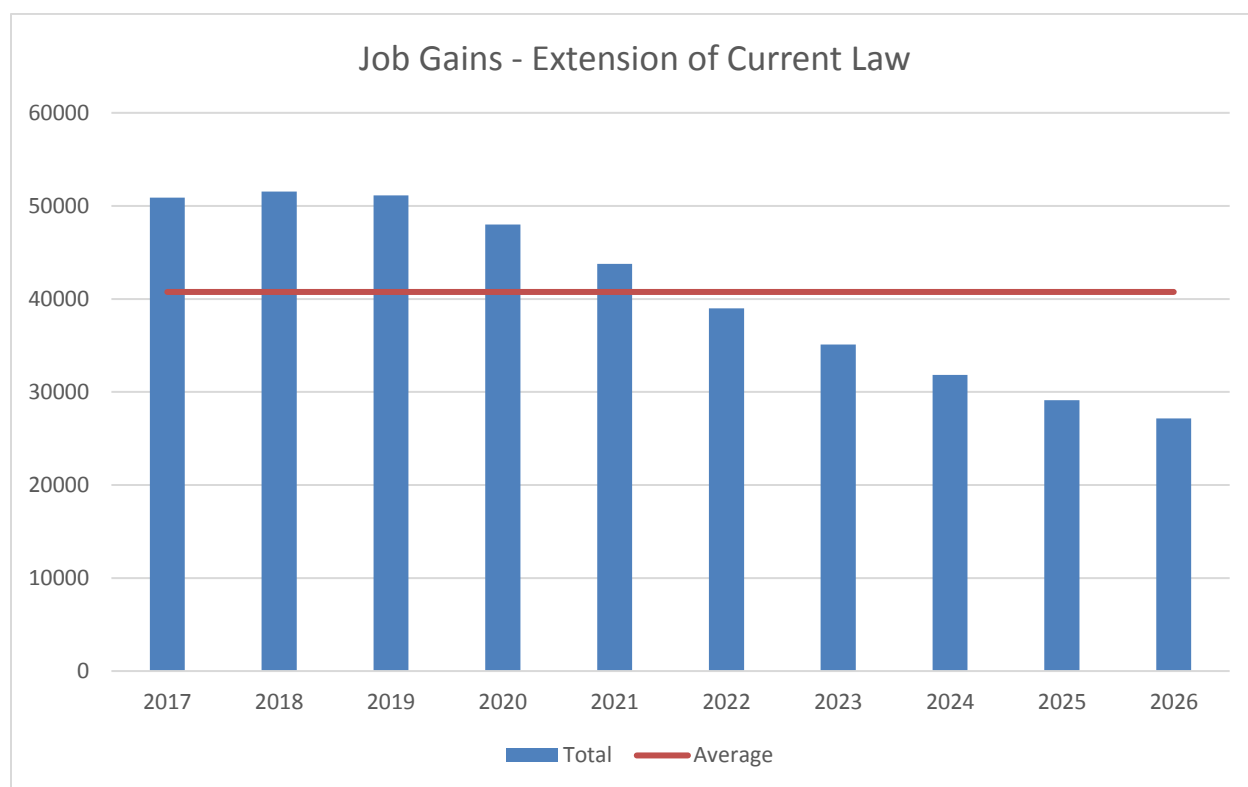
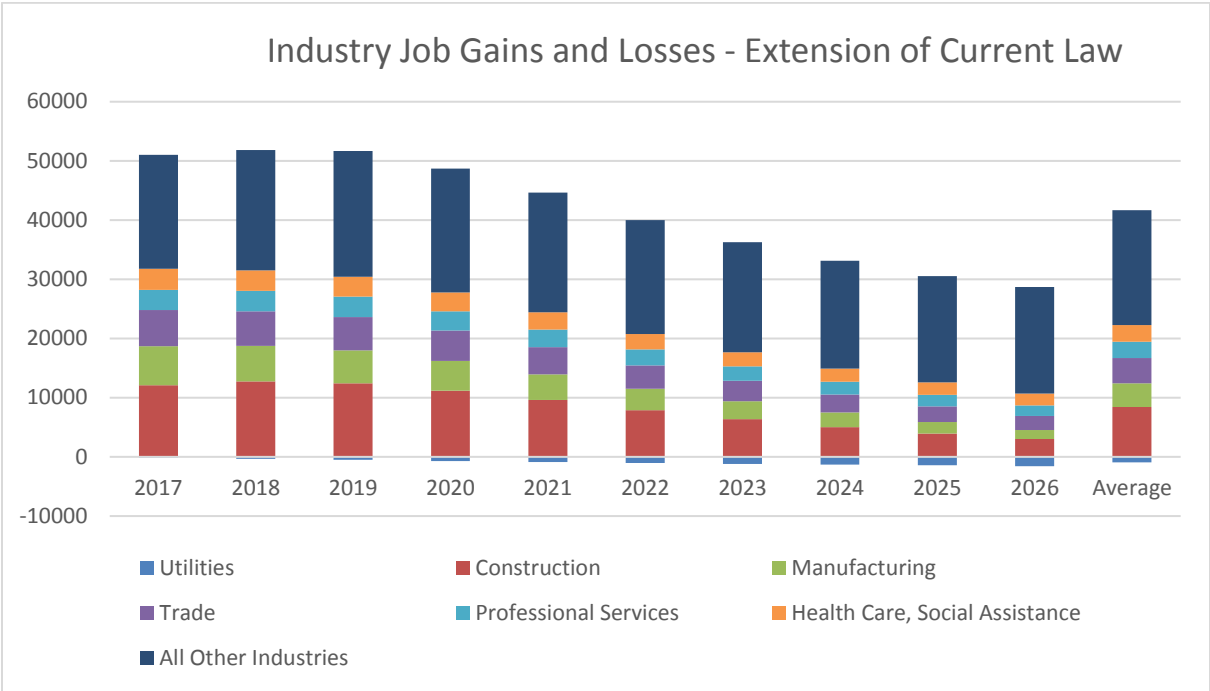
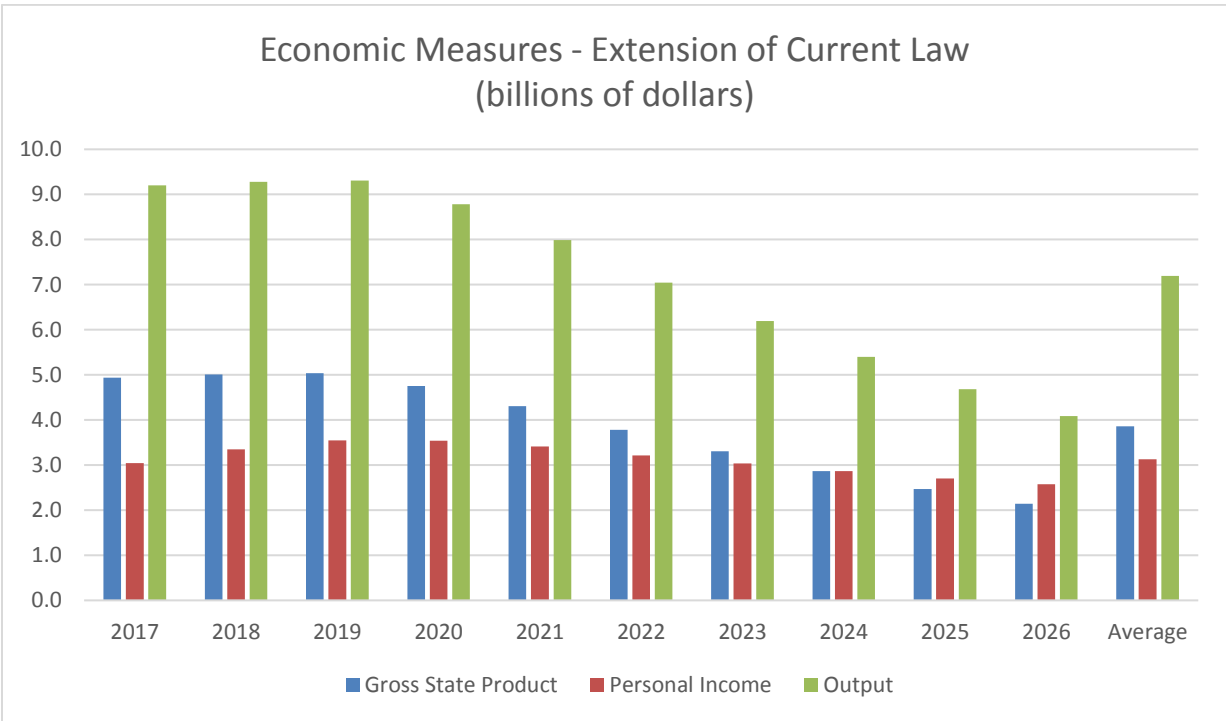


Figure 11. Extension of Current Law: Industry Jobs



In addition to the employment impact, Gross Domestic Product increased by an average of \$3.9 billion nationwide. Similarly, personal income increased an average of \$3.1 billion, while increased output averaged \$7.2 billion.

Figure 12. Extension of Current Law: Economic Measures



## Conclusion

Strengthening the Section 179D Energy Efficient Commercial Buildings Tax Deduction will create jobs and expand the nation's economy. Enhancing this incentive will not only help industries involved in designing, building, and operating commercial buildings, it will also benefit the broader economy.

Strengthening and modernizing Section 179D to optimize the opportunities it presents to commercial developers is estimated to lead to an average annual gain of 76,529 jobs, \$7.4 billion in gross domestic product, and \$5.7 billion in personal income for the first ten years after enactment.

An extension of current law plus expansion to include non-profits and tribal governments, while increasing the applicable energy efficiency standards, is estimated to lead to an average annual gain of 39,388 jobs, \$3.7 billion in gross domestic product, and \$3 billion in personal income for the first ten years after enactment.

An extension of current law is estimated to lead to an average annual gain of 40,749 jobs, \$3.9 billion in gross domestic product, and \$3.1 billion in personal income for the first ten years after enactment.

The Section 179D Energy Efficient Commercial Buildings Tax Deduction strengthens our nation's energy independence, reduces emissions, encourages innovation, and creates jobs. These benefits would be compounded by increasing the dollar value of the deduction in accordance with several Congressional and administration proposals.

## Appendix 1: Overview of the REMI Model

PI+ is a structural economic forecasting and policy analysis model. It integrates input-output, computable general equilibrium, econometric, and economic geography methodologies. The model is dynamic, with forecasts and simulations generated on an annual basis and behavioral responses to compensation, price, and other economic factors.

The model consists of thousands of simultaneous equations with a structure that is relatively straightforward. The exact number of equations used varies depending on the extent of industry, demographic, demand, and other detail in the specific model being used. The overall structure of the model can be summarized in five major blocks: (1) Output and Demand, (2) Labor and Capital Demand, (3) Population and Labor Supply, (4) Compensation, Prices, and Costs, and (5) Market Shares. The blocks and their key interactions are shown in Figures 1 and 2.

Figure 1: REMI Model Linkages

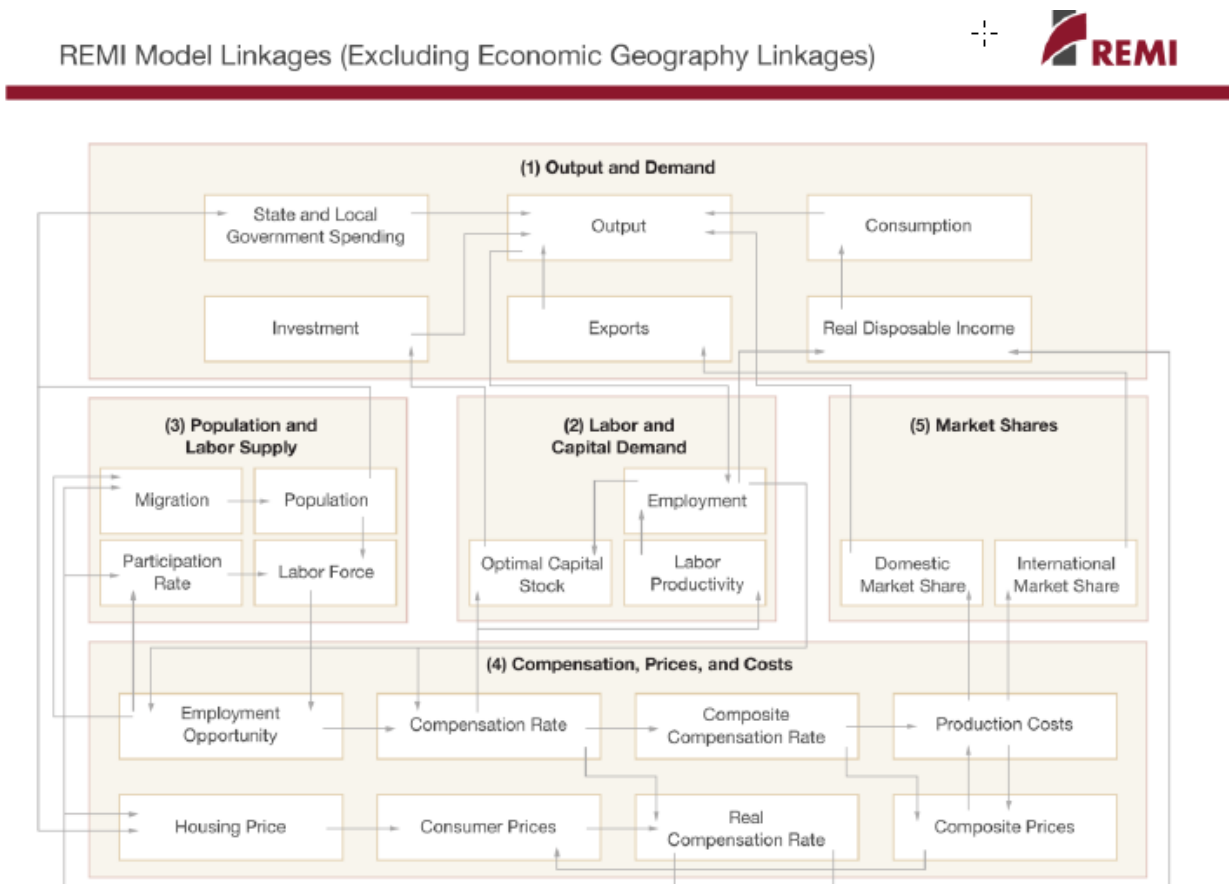
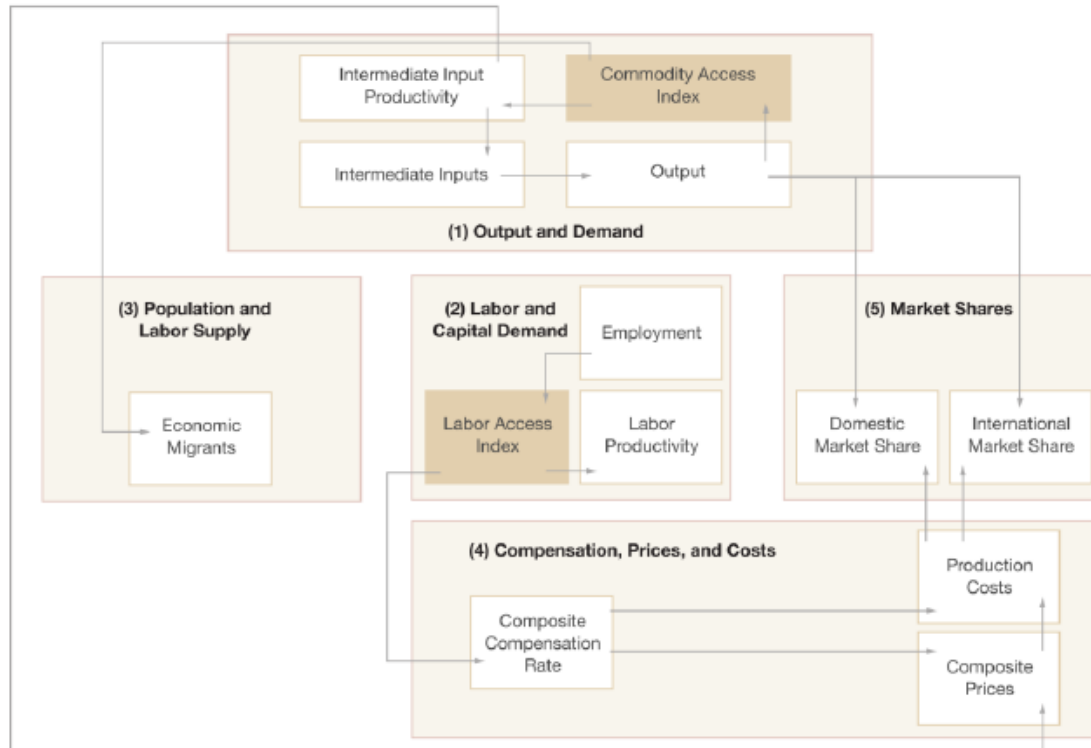


Figure 2: Economic Geography Linkages



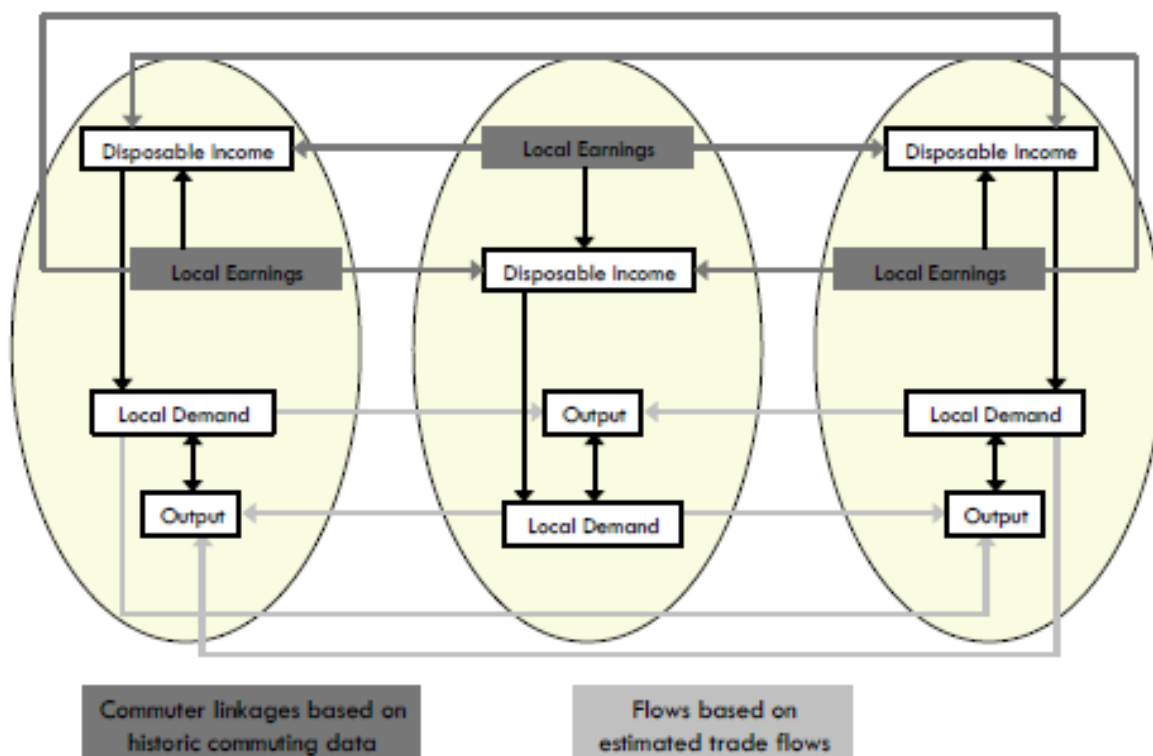
The Output and Demand block consists of output, demand, consumption, investment, government spending, exports, and imports, as well as feedback from output change due to the change in the productivity of intermediate inputs. The Labor and Capital Demand block includes labor intensity and productivity as well as demand for labor and capital. Labor force participation rate and migration equations are in the Population and Labor Supply block. The Compensation, Prices, and Costs block includes composite prices, determinants of production costs, the consumption price deflator, housing prices, and the compensation equations. The proportion of local, inter-regional, and export markets captured by each region is included in the Market Shares block.

Models can be built as single region, multi-region, or multi-region national models. A region is defined broadly as a sub-national area, and could consist of a state, province, county, or city, or any combination of sub-national areas.

Single-region models consist of an individual region, called the home region. The rest of the nation is also represented in the model. However, since the home region is only a small part of the total nation, the changes in the region do not have an endogenous effect on the variables in the rest of the nation.

Multi-regional models have interactions among regions, such as trade and commuting flows. These interactions include trade flows from each region to each of the other regions. These flows are illustrated for a three-region model in Figure 3.

Figure 3: Trade and Commuter Flow Linkages



Multiregional national models also include a central bank monetary response that constrains labor markets. Models that only encompass a relatively small portion of a nation are not endogenously constrained by changes in exchange rates or monetary responses.

### Block 1. Output and Demand

This block includes output, demand, consumption, investment, government spending, import, commodity access, and export concepts. Output for each industry in the home region is determined by industry demand in all regions in the nation, the home region's share of each market, and international exports from the region.

For each industry, demand is determined by the amount of output, consumption, investment, and capital demand on that industry. Consumption depends on real disposable income per capita, relative prices, differential income elasticities, and population. Input productivity depends on access to inputs because a larger choice set of inputs means it is more likely that the input with the specific characteristics required for the job will be found. In the capital stock adjustment process, investment occurs to fill the difference between optimal and actual capital stock for residential, non-residential, and equipment investment. Government spending changes are determined by changes in the population.



### *Block 2. Labor and Capital Demand*

The Labor and Capital Demand block includes the determination of labor productivity, labor intensity, and the optimal capital stocks. Industry-specific labor productivity depends on the availability of workers with differentiated skills for the occupations used in each industry. The occupational labor supply and commuting costs determine firms' access to a specialized labor force.

Labor intensity is determined by the cost of labor relative to the other factor inputs, capital and fuel. Demand for capital is driven by the optimal capital stock equation for both non-residential capital and equipment. Optimal capital stock for each industry depends on the relative cost of labor and capital, and the employment weighted by capital use for each industry. Employment in private industries is determined by the value added and employment per unit of value added in each industry.

### *Block 3. Population and Labor Supply*

The Population and Labor Supply block includes detailed demographic information about the region. Population data is given for age, gender, and ethnic category, with birth and survival rates for each group. The size and labor force participation rate of each group determines the labor supply. These participation rates respond to changes in employment relative to the potential labor force and to changes in the real after-tax compensation rate. Migration includes retirement, military, international, and economic migration. Economic migration is determined by the relative real after-tax compensation rate, relative employment opportunity, and consumer access to variety.

### *Block 4. Compensation, Prices and Costs*

This block includes delivered prices, production costs, equipment cost, the consumption deflator, consumer prices, the price of housing, and the compensation equation. Economic geography concepts account for the productivity and price effects of access to specialized labor, goods, and services.

These prices measure the price of the industry output, taking into account the access to production locations. This access is important due to the specialization of production that takes place within each industry, and because transportation and transaction costs of distance are significant. Composite prices for each industry are then calculated based on the production costs of supplying regions, the effective distance to these regions, and the index of access to the variety of outputs in the industry relative to the access by other uses of the product.

The cost of production for each industry is determined by the cost of labor, capital, fuel, and intermediate inputs. Labor costs reflect a productivity adjustment to account for access to specialized labor, as well as underlying compensation rates. Capital costs include costs of non-residential structures and equipment, while fuel costs incorporate electricity, natural gas, and residual fuels.

The consumption deflator converts industry prices to prices for consumption commodities. For potential migrants, the consumer price is additionally calculated to include housing prices. Housing prices change from their initial level depending on changes in income and population density.

Compensation changes are due to changes in labor demand and supply conditions and changes in the national compensation rate. Changes in employment opportunities relative to the labor force and occupational demand change determine compensation rates by industry.

### *Block 5. Market Shares*

The market shares equations measure the proportion of local and export markets that are captured by each industry. These depend on relative production costs, the estimated price elasticity of demand, and the effective distance between the home region and each of the other regions. The change in share of a specific area in any region depends on changes in its delivered price and the quantity it produces compared with the same factors for competitors in that market. The share of local and external markets then drives the exports from and imports to the home economy.



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BP respectfully requests a meeting with staff from Senate Finance Committee offices serving on the Energy Taskforce to discuss our views with respect to temporary tax provisions affecting the fuels market, specifically, the biodiesel and alternative fuels mixture credits. BP owns and operates refineries in Cherry Point, WA; Whiting, IN; and Toledo, OH; as well a US fuels marketing and trading business headquartered in Chicago, IL. These two temporary fuel tax provisions have a significant impact on the refining, marketing and trading operations of our various US assets, and we therefore have a unique perspective to share with the Finance Committee in this regard.

We would appreciate any time staff may be able to provide.

Regards,

Rob

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**Statement on behalf of the  
National Association of Home Builders  
1201 15<sup>th</sup> St NW  
Washington, DC 20010**

**Senate Finance Committee Taskforces on  
Energy  
And  
Employment & Community Development**

**June 13, 2019**

On behalf of the approximately 140,000 members of the National Association of Home Builders (NAHB), we respectfully submit this statement discussing the significance and impact of several expired and expiring tax extenders. NAHB strongly supports a number of the expired and expiring tax extenders, including specifically:

- Section 163 Mortgage Insurance Premium Deduction
- Section 45L Credit for Energy Efficient New Homes
- Section 25D Tax Credit for Power Production Property
- Section 25C Credit for Qualified Energy Efficiency Improvements
- Section 179D Energy Efficient Commercial Buildings Deduction
- Section 108 Mortgage Forgiveness Debt Relief

We believe these tax provisions should be extended and made permanent.

NAHB's members are increasingly frustrated by the lengthy lapses Congress has allowed to occur with the tax extenders. While Congress has retroactively approved the extenders after every past lapse, that offers no guarantee for the future. The builders who utilize these tax credits face the difficult decision of whether to continue to offer the benefits of these credits to their customers without knowing if there will be a credit to claim at the end of the year. This decision is made more difficult due to the incredibly small margins most builders currently operate on. NAHB believes that Congress should not be placing businesses and consumers in the position of guessing the future. Following on the heels of the successful efforts to reform the tax code, Congress has an obligation to create a degree of tax certainty.

### Section 163 Mortgage Insurance Premium Deduction

As housing affordability is a growing concern in many communities across the country, NAHB supports efforts to reduce the cost of homeownership. This includes retaining the deduction for mortgage insurance payments, including premiums paid for insurance associated with Federal Housing Administration-backed loans and private mortgage insurance.

Currently, the reduced market share of first-time home buyers is a notable weakness in the housing market. While the market share of first-time buyers has improved in recent years, downpayment accumulation remains one of the biggest financial hurdles to homeownership. First-time buyers typically have a smaller downpayment and are more likely to pay mortgage insurance. Therefore, extension of this deduction reduces the cost of homeownership for these new home buyers.

### Section 45L Credit for Energy Efficient New Homes

NAHB also supports the section 45L tax credit which provides a \$2,000 credit to builders of new homes that exceed a minimum energy code specification (2006 International Energy Conservation Code plus supplements) by at least 50% in both heating and cooling efficiency. The efficiency performance must be independently verified by an authorized energy rater. Although this credit has suffered from start-and-stop issues of short-term and retroactive extensions over the last five years, the 45L program has managed to deliver the market transformation results that Congress intended to encourage.

While claims of the Section 45L credit have grown exponentially, further adoption may be limited by two restrictions imposed under current law. NAHB recommends that Congress enact technical changes to deal with these barriers.

First, the credit cannot be claimed against alternative minimum tax (AMT) liability. As the home building industry is largely comprised of small builders operating as pass-thrus (80% of NAHB builder members are organized as pass-thru entities), many home builders have historically been trapped in AMT status year after year. Recent changes to the AMT calculation as part of the Tax Cuts and Jobs Act offer a short period of relief for many home builders, but those AMT changes will expire after 2025. Because this credit is claimed by the builder, the AMT limitation has effectively deterred some small builders from participating in the program. NAHB believes that home buyers and renters will be better served if Congress allows all home builders to take advantage of the Section 45L tax credit by allowing it to be claimed against the AMT.

It is also critical that any AMT fix include a retroactive element that allows “credits determined” to the beginning of the program to be claimed against AMT. For those builders who constructed 45L-eligible homes in good faith but have been unable to claim the credit, a retroactive fix is the fairest approach.

In addition to the AMT, Section 45L(e) requires a basis adjustment by the builder when claiming the tax credit. The basis adjustment poses unique challenges to a builder due to the nature of the home building businesses. Generally, builders may construct homes on a speculative or non-speculative basis. Custom-built homes are generally constructed on a non-speculative basis and typically with the eventual

home owner acting as the “builder” (owning the lot and the building materials) and the home builder acting as a general contractor providing the service of construction.

The IRS has taken the position that homes built on a non-speculative basis may not qualify for the program because the builder does not own the property and therefore cannot reduce basis. Moreover, IRS Notice 2008-35 makes it clear that the eventual home owner cannot claim the credit as the “builder” because the 45L credit cannot be claimed for a home in which the taxpayer will reside.

NAHB does not believe that Congress intended to exclude non-speculative homes from the tax credit. The ideal solution would be to eliminate the basis adjustment. Realizing this change would result in a revenue impact, NAHB recommends Congress look to a solution that preserves the basis adjustment while allowing all eligible homes to qualify for the credit.

Specifically, NAHB recommends borrowing a fix for a similar issue with the commercial energy efficient building deduction, Section 179D. This deduction also requires a basis adjustment but allows the deduction to be claimed by someone other than the building owner in certain cases. Specifically, Section 179D(d)(4) authorizes the Secretary to issue regulations to allow the deduction to be claimed by “the person primarily responsible for designing the property in lieu of the owner,” for certain government-owned buildings.

45L could and should be modified to allow the tax credit to be claimed by the general contractor in custom home building, non-speculative building situations (ones in which the owner of the home and lot will be the eventual home owners, thereby ensuring the tax credit is consistent with its operation as a general business credit under Section 38). This could be accomplished by granting the Secretary authority similar to that under 179D(d)(4). The ultimate fix could then be done via regulation and would not require modifying the existing basis rules. Custom home builders are the leaders in Green Building, and excluding them from the 45L program reduces the scope and policy effectiveness of the tax credit.

Utilization of the tax code to promote energy efficiency and consumer savings is the most effective opportunity to truly shape an efficiency policy that is not punitive to the housing market as a whole, and creates jobs as a result. The use of the tax code to incentivize energy efficiency in buildings has a long history of bipartisan support. Much like other environmental rules and regulations, efficiency requirements are expensive, and ultimately the consumer bears the brunt of those costs. Credits like 45L offer an alternative to costly mandates through meaningful incentives.

#### Section 25D Tax Credit for Power Production Property

The Bipartisan Budget Act of 2018 restored geothermal, small wind, and fuel cells as qualifying property, along with solar. This 30 percent tax credit is scheduled to phase-out after 2021, and completely expire after 2022. NAHB is grateful that Congress has restored geothermal, small wind, and fuel cells to parity with solar technologies in the tax code. We strongly believe the tax code should not favor one technology over another.

This tax incentive encourages the retrofitting and construction of homes that produce their own power. Alongside conservation, on-site power production provides an economic benefit because it reduces power loss through transmission. According to the Department of Energy Information Administration (EIA), “annual electricity transmission and distribution losses average about 7% of the electricity that is transmitted in the United States.”<sup>1</sup> For this reason, 25D is smart long-term energy policy.

#### Section 25C Credit for Qualified Energy Efficiency Improvements

NAHB also strongly supports the section 25C tax credit for consumers who undertake certain energy efficient upgrades. Because of this simplicity, the 25C tax credit has been enormously effective in reaching the middle-class households Congress intended: 93% of those who claim it make less than \$200,000 (based on 2009 tax data).

Although today’s homes are significantly more energy efficient than just a few decades ago, nearly 70 percent of the homes and buildings were built before the introduction of modern energy codes in 1991. Due to the enormous potential for American families to save thousands of dollars in energy costs each year, promoting an effective efficiency policy at the federal level is essential. The families that live in the oldest, least-efficient homes often cannot afford the upfront costs of energy retrofits and upgrades without meaningful incentives. Additionally, the most-efficient new homes far outpace the older stock, but at a premium that is quickly pricing out families from longer-term energy savings in new housing. A federal policy that combines effective incentives for existing home owners to improve the efficiency of their homes, which has the added benefit of fostering job creation in the construction sector, is responsible and necessary for addressing two of the biggest household expenses facing today’s families: housing and energy.

#### Section 179D Energy Efficient Commercial Buildings Deduction

The 179D tax incentive, which offers a \$1.80 per square foot tax deduction to make commercial buildings, including multi-family residential, 50% more energy efficient (above code). The 179D incentive is a very smart way to encourage efficiency. First, it does not choose winners and losers. It offers a product and technology neutral incentive that provides builders and owners the flexibility to select materials and products that are the most cost effective and that best suit their collective needs.

Secondly, it corrects an unintended consequence of the existing tax code. Businesses currently deduct typical operating expenses from their taxes, including utility bills, so the higher the bill, the higher the deduction. In this way, businesses are offered a greater tax benefit for using more energy. The 179D deduction offsets these benefits. By qualifying for the deduction, not only would energy efficiency be incentivized, but these buildings would have lower utility bills, thus reducing the deduction taken for business expenses (energy use).

#### Section 108 Mortgage Forgiveness Debt Relief

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<sup>1</sup> DOE – EIA FAQ document: <http://www.eia.gov/tools/faqs/faq.cfm?id=105&t=3>



Section 108 of the tax code required cancelled debt to be treated as taxable income. This section ensures that taxpayers do not avoid the gift tax through debt that is subsequently forgiven. However, Section 108 has had unfortunate consequences on financially-struggling home owners.

A home owner facing imminent foreclosure has few options, but the preferred option is for the home owner to reach an agreement with their lender to avoid foreclosure. In certain circumstances, the lender and borrower may recognize that it is in everyone's interest to reduce the home owner's mortgage principle owed, thereby reducing the home owner's monthly payments. But this agreement would trigger Section 108, requiring the home owner to treat the debt forgiven as taxable income. For this reason, this is often referred to as "phantom income."

For home owners struggling to a point where the lender is willing to forgive part of their mortgage principle, they are almost certainly not in a position to afford an additional tax bill on the value of the forgiven debt. This is why NAHB supports providing home owners with mortgage forgiveness debt relief, which allows home owners to escape this tax burden when debt is forgiven on their principal residence.

### Conclusion

Home building is an industry driven by small, often family-owned businesses. Small business owners cannot afford to gamble on whether a tax credit will be extended retroactively. The uncertainty created by the recent history of extending these tax provisions retroactively unfairly places small business owners between a rock and hard place. NAHB is pleased that the Senate Finance Committee is looking at these important tax provisions and urges Congress to move swiftly to either provide a long-term extension of these tax extenders, or preferably make them permanent.



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June 13, 2019

Sen. John Thune (R-SD) and Sen. Debbie Stabenow (D-MI), Co-Leads  
Energy Task Force  
Committee on Finance  
United States Senate  
219 Dirksen Senate Office Building  
Washington, D.C. 20510

Dear Members of the Senate Finance Committee Energy Task Force,

The National Biodiesel Board (NBB) submits this testimony to the Task Force regarding the role of the biodiesel tax incentives (IRC §40A and §6426) in the continued growth of our industry, the need for a stable tax policy signal from the federal government, and the potential resulting benefits for American competitiveness, job creation, and the environment.

NBB is the national trade association representing the biodiesel and renewable hydrocarbon diesel industries as the coordinating body for research and development in the United States. Since its founding in 1992, NBB has developed into a comprehensive industry association that coordinates and interacts with a broad range of cooperators including industry, government, and academia. NBB's membership is comprised of biodiesel and renewable hydrocarbon diesel producers; state, national, and international feedstock and feedstock processor organizations; fuel marketers and distributors; and technology providers.

NBB supports legislative proposals that would, at a minimum, provide an immediate short-term (two- or three-year) extensions of the biodiesel tax incentives beginning on January 1, 2018. However, as a matter of good tax and energy policy, NBB advocates that after such a short-term extension is enacted, Congress should craft and approve a more durable credit that would provide long-term, stable support at a level that will continue to foster growth in the domestic biodiesel market. NBB is aligned with other stakeholders in supporting maintenance of the tax incentives at the blender level.

The biodiesel tax incentives were originally enacted as part of the American Jobs Creation Act (P.L. 108-357). Since then, the biodiesel tax incentives have been extended seven times (six times for the renewable diesel tax incentives). As described by the Joint Committee on Taxation, the incentives for biodiesel and renewable diesel include income tax credits for biodiesel and renewable diesel fuels; income tax credits for biodiesel and renewable diesel fuels that are used to produce a qualified mixture; income tax credits for small agri-biodiesel producers, and excise tax credits and outlay payments for biodiesel and renewable diesel fuel mixtures. The broad array of options for biodiesel producers and blenders to access the credits are, NBB believes, a key factor in the incentives' success. Also, it is important to note that renewable diesel is generally treated in the same manner as biodiesel, with the notable exception that renewable diesel production is not included in the calculation of the small agri-biodiesel producer credit.

Biodiesel is a renewable, clean-burning diesel fuel made from a diverse mix of resources, including agricultural oils such as soybean, corn, and canola oil, as well as recycled cooking oil and animal fats. Based on the performance standards established by law, the U.S. Environmental Protection Agency (EPA) has defined biodiesel as an “advanced biofuel”—meaning it reduces greenhouse gas emissions by at least 50 percent when compared to petroleum diesel.

Biodiesel is the nation’s first domestically produced, commercially available advanced biofuel. It meets a strict fuel specification set forth by ASTM International—the official U.S. fuel-certification organization. Biodiesel is primarily used in blends of 5 percent to 20 percent and does not require special fuel pumps or engine modifications. In fact, the majority of automobile manufacturers support biodiesel blends up to 20 percent in their engine warranties. Renewable diesel is a fuel made from the same feedstocks as biodiesel but using a different process—one more similar to petroleum refining. The resulting product (renewable hydrocarbon diesel) is chemically indistinguishable from petroleum diesel but made from renewable feedstocks.

Biodiesel and renewable diesel are relatively new sources of energy. History has shown that well-crafted and efficient tax incentives can be powerful policy mechanisms to create jobs, achieve the nation’s energy objectives, and leverage private sector investment to promote the deployment and utilization of new energy resources here in the United States. This is certainly the case with the tax credit for biodiesel.

Federal programs, including the biodiesel tax incentive, have played a key role in stimulating growth in the U.S. biodiesel industry, helping biodiesel become the leading EPA-designated advanced biofuel in the nation. Together with the Renewable Fuel Standard, these successful federal policies have sent a positive signal to producers, marketers, and customers. The RFS has effectively opened up the petroleum diesel fuel market to renewable alternatives, and the tax incentive has provided the necessary economic driver to all segments of the value chain, including blending, distribution, marketing, and consumption. Without question, the biodiesel tax incentive has stimulated production. In 2004, prior to the enactment of federal tax incentives, our industry only produced 25 million gallons. When the incentives were first implemented in 2005, the United States produced roughly 112 million gallons; now, the domestic market has climbed to as high as 2.9 billion gallons annually.

The public policy benefits of the tax incentive are clear:

**Jobs are created, and rural economies grow.** With biodiesel plants nationwide—from Rhode Island to Michigan to Texas and Louisiana—the biodiesel industry already supports more than 60,000 jobs, \$11.42 billion in economic impact, and \$2.54 billion in annual wages paid. In many rural areas of the country, biodiesel plants are a driving force of the local economy, supporting the employment of technicians, plant operators, engineers, construction workers, truck drivers, and farmers.

**Value is added to other U.S. economic sectors, such as agriculture.** Biodiesel provides very strong soybean price support, adding more than \$0.60 per bushel in value. Biodiesel allows U.S. soybean farmers to be more competitive in the global protein market, as it increases the efficiency and profitability of U.S. soybean processing. Demand for biodiesel creates incentives to expand U.S. soybean processing capacity, such as AGP’s recent capital investment in a large-scale soybean processing plant in South Dakota. Policy certainty is one of the most important factors in making significant investment decisions in value-added businesses, such as biodiesel.

**Biodiesel offers benefits that petroleum cannot.** Biodiesel blends increase lubricity and cetane of diesel fuel—two necessary properties that petroleum diesel fuel lacks. Biodiesel blends provide performance characteristics such as fuel economy, horsepower, and torque similar to petroleum diesel while improving other characteristics, extending the life of diesel engines.

**America benefits from improved air quality.** Biodiesel reduces particulate matter by 47 percent, hydrocarbon emissions by 67 percent, and lifecycle greenhouse gases by more than 80 percent. The health benefits of reducing these emissions include reduced mortality of adults and infants, reduced cancer risk, reduced chronic and acute bronchitis, reduced acute myocardial infarctions, reduced cardiovascular hospital admissions, reduced upper and lower respiratory symptoms, reduced exacerbation of asthma, and reduction in lost workdays. Biodiesel's reduction in particulate matter alone equates to preventing more than 500 premature deaths annually. Additionally, biodiesel is nontoxic, biodegradable, and benefits water quality. The EPA has recognized its environmental benefits by classifying it as an advanced biofuel, making biodiesel the leading commercial-scale U.S. fuel produced nationwide to meet the agency's criteria.

**Energy security is enhanced.** Biodiesel is diversifying our fuel supplies so that we are less dependent on global oil markets that are influenced by unstable regions of the world and global events beyond our control. Despite increased domestic oil production, consumers will remain vulnerable to volatile international oil prices unless there is diversity and competition in the fuels market. Approximately 6.5 percent of the total on-road diesel transportation fuel market, which is roughly 40 billion gallons, is biodiesel.

**Biodiesel lowers prices at the pump.** According to an analysis by the World Agricultural Economic and Environmental Services, the impact on global #2 diesel prices is -\$0.17 per gallon. With consumption of 62.24 billion gallons in the United States, US diesel fuel consumers paid \$10.58 billion less for the fuel they consumed in 2017.

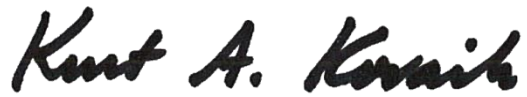
We believe it is important for all stakeholders in the transportation fuels industry to have policy certainty—not only for the farmers and producers, but also the blenders and customers who decide to purchase the fuels. We appreciate the strong support of petroleum marketers and retailers, who have helped spread the use of these fuels across the nation.

So where do we go from here? NBB urges the Task Force to recommend the extension of the biodiesel and renewable diesel blender's tax incentives through 2019 at a minimum, while further contemplating a long-term, multi-year approach to biodiesel incentives that would drive new investment and establish market certainty for U.S. farmers, ranchers, and petroleum marketers, blenders, and fuel retailers.

In conclusion, NBB would like to emphasize that the biodiesel blender's tax incentive has helped achieve the desired goal of expanding domestic production of American energy resources and jobs here at home. In turn, the increased use of biodiesel has helped the United States realize economic, global competitiveness, and environmental benefits. These benefits, however, will be jeopardized without reinstatement of the biodiesel tax incentive in the Code to stimulate U.S. biodiesel production and job growth.

Thank you again for the opportunity to submit these comments. NBB would be pleased to serve as a resource on the industry as the Task Force moves forward with its deliberations.

Sincerely,

A handwritten signature in black ink that reads "Kurt A. Kovarik". The script is fluid and cursive, with the first letters of each word being capitalized and prominent.

Kurt Kovarik  
Vice President of Federal Affairs  
National Biodiesel Board



June 14, 2019

**Comments of the American Council on Renewable Energy to the  
Senate Finance Committee Tax Extenders Energy Task Force**

The American Council on Renewable Energy (ACORE) is pleased to provide comments to the Senate Finance Committee Tax Extenders Energy Task Force. ACORE works across renewable technologies and represents the nation's leading renewable energy developers, manufacturers and investors, along with corporate electricity consumers, electric utilities, manufacturers of energy storage and smart grid technologies, and the many other diverse industries that comprise the country's thriving renewable energy economy. Renewable sector investment has exceeded \$40 billion for each of the last five years and our members are proud of renewable energy's contribution to American economic growth, job creation and energy security.

- **Congress Should Promote a Level Playing Field in Energy Tax Policy, Including Extenders.** While energy tax policy has been an important tool to mobilize capital formation and drive private-sector investment in domestic energy infrastructure and innovation, it should promote a level playing field on which energy resources compete based on economic terms. The tax credits for renewable energy serve to level the playing field as all other major forms of electricity production benefit from tax incentives, most of them permanent and on the books for over a century. These include expensing for intangible drilling costs, percentage depletion for oil wells and tax-advantaged treatment for master limited partnerships. The renewable energy incentives have been temporary, requiring periodic and often frequent renewal with several lapses, all of which has had the impact of distorting market operation and placing renewables at a competitive disadvantage. Presently, the wind and solar tax credits are on schedule to phase out (with the limited exception of a permanent ten percent investment tax credit for commercial and utility-scale solar power). The production tax credit (PTC) will end this year. Incentives for hydropower, biomass and geothermal expired at the end of 2017 and require renewal.

As the Finance Committee considers the suite of temporary energy tax provisions, it should utilize the extenders process to establish a level playing field for all energy sources and promote needed investment in energy infrastructure. The extenders process may be the nearest term, bipartisan opportunity to make progress on these important objectives. Congress should include in this effort modifications to existing tax provisions to support continued investment in renewable energy on a predictable, long-term basis.

In 2015, Congress enacted a transition plan to extend and phase down the PTC and ITC for wind and solar. That plan was characterized at the time as the first step in reform of the energy tax provisions. However, in 2017, Congress enacted the Tax Cuts and Jobs Act and did not address the long-term and permanent tax provisions applicable to other energy resources and then in 2018 extended incentives for nuclear power, essentially locking in an unfair advantage for conventional fossil and nuclear energy resources.



Congress needs to address this inequity to promote continued private-sector investment in the nation's energy infrastructure in a way that promotes competition in energy markets so that consumers and businesses have access to reliable, resilient and affordable sources of power, now and in the future. Given growing calls to address climate change, it is especially important that renewable energy be one of our nation's top energy priorities.

- **The PTC and ITC Have Been Effective Policies for Encouraging Investment and Innovation.** Despite requiring periodic renewal and being allowed to lapse on occasion, the renewable energy tax incentives for wind and solar have been effective in driving private-sector investment and innovation in our nation's abundant domestic resources. Over the last nine years, levelized costs for wind and solar power have come down by 68% and 88% respectively. In many areas of the U.S., renewables are the cheapest source of new power, with wind and solar bidding into power markets in the two to four cents per kilowatt-hour range. Renewables are now the largest source of private-sector infrastructure investment, with over \$48 billion invested in 2018 alone and more than \$521 billion since 2004. Renewables comprised over 18% of total U.S. electric generation and accounted for more than one-third of all new generating capacity in 2018. Once the global leader in renewable energy innovation and production, the U.S. now faces enormous competition from China and elsewhere around the world, underscoring the importance of smart, forward-looking federal policy in this area.
- **Congress Should Consider Implementation of a Technology-Neutral Tax Incentive.** The nation's aging energy infrastructure requires modernization, and a technology-neutral tax incentive would simplify the existing system, drive economic growth and promote competition to ensure low power costs for consumers. The incentive should apply to capital investment in all types of new domestic power generation, as well as new transmission, energy storage and grid modernization technologies. Senator Ron Wyden (D-OR) recently introduced technology-neutral tax credit legislation based on emissions reductions (the Clean Energy for America Act), while Representative Tom Reed (R-NY) authored a bill in 2017 to encourage investment in emerging technologies (the Energy Sector Innovation Credit Act). The Wyden approach is specifically focused on achieving material reduction in greenhouse gas emissions, while the Reed approach is focused on capital invested. Any such incentive should be made permanent.
- **Current Tax Extenders Legislation Should Include Incentives for Energy Storage, Electric Vehicles, Offshore Wind Development and Transferability.** As the Energy Task Force considers longer-term, more permanent tax policy, current tax extenders legislation should be enacted soon to renew expired provisions and include measures that promote important bipartisan policy priorities such as energy infrastructure investment, grid modernization, resilience and innovation. In our view, such measures should include an energy storage tax credit, an extension and expansion of the electric vehicle (EV) credit, an incentive for offshore wind generation and the transferability of existing tax credits.



As mentioned, the tax credit for renewable energy orphan technologies (i.e., geothermal, biomass and hydropower) expired at the end of 2017 and requires renewal. The bipartisan Energy Storage Tax Incentive and Deployment Act (S. 1142/H.R. 2096), introduced in the Senate by Senators Heinrich (D-NM) and Gardner (R-CO) and in the House by Representative Doyle, would accelerate and expand energy storage deployment, improve power system reliability and resilience, and enable greater amounts of renewable energy generation on the grid. The bipartisan Driving America Forward Act (S. 1094/H.R. 2256), introduced in the Senate by Senators Stabenow, Alexander, Peters and Collins and in the House by Representative Kildee, would create jobs, support American manufacturing and reduce emissions in the transportation sector. Additionally, we support inclusion of medium and light-duty electric vehicles in any final EV proposal. A robust federal tax incentive for offshore wind generation would promote development of the nation's vast offshore wind resources. Finally, bipartisan legislation like the Renewable Energy Transferability Act (HR 2704) introduced in the House by Representatives Blumenauer and LaHood would enhance the efficiency of existing tax credits, lower project costs and increase the amount of domestic renewable energy generation.

We welcome the opportunity to discuss these issues in greater detail. Please let us know if we can provide any additional information by contacting Todd Foley, Senior Vice President, Policy & Government Relations ([foley@acore.org](mailto:foley@acore.org)) or Tyler Stoff, Policy & Research Manager ([stoff@acore.org](mailto:stoff@acore.org)).





**American  
Fuel & Petrochemical  
Manufacturers**

1800 M Street, NW  
Suite 900 North  
Washington, DC  
20036

June 14, 2019

The Honorable John Thune  
511 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow  
731 Hart Senate Office Building  
Washington, DC 20510

RE: The Section 6426(e) Alternative Fuel Mixture Credit (“AFMC”)

Dear Senator Thune and Senator Stabenow:

The American Fuel & Petrochemical Manufacturers (AFPM) is a trade association representing high-tech American manufacturers of virtually the entire U.S. supply of fuels and home heating oil, as well as the petrochemicals used as building blocks for thousands of vital products in daily life. AFPM members make modern life possible and keep America moving and growing as they meet the needs of our nation and local communities, strengthen economic and national security, and support over three million American jobs.

We are submitting comments today to the Senate Finance Committee’s bipartisan taskforce on Energy to express AFPM’s concern with proposed retroactive changes to the Alternative Fuel Mixture Credit included in the *Tax Extender and Disaster Relief Act of 2019* (S. 617).

The Section 6426(e) Alternative Fuel Mixture Credit (“AFMC”) provides a \$0.50-per-gallon excise-tax credit for the mixing of “alternative fuels” such as liquified petroleum gases (“LPG”) with “taxable fuels” like gasoline or diesel. The credit is currently expired for fuel sold or used after December 31, 2017.

While S. 617 includes mostly noncontroversial “date change” extensions for nearly 30 expired tax provisions, the bill also proposes to make substantive prospective and retroactive changes as to what qualifies as an alternative fuel under the AFMC.

Specifically, S. 617 proposes to amend the statute to retroactively eliminate claims based on three of the qualifying alternative fuels that have been listed in the statute. These changes would effectively disallow liquefied petroleum gas (or LPG, which includes propane and butane), compressed or liquefied natural gas and compressed or liquefied gas derived from biomass from qualifying for the credit for fuels produced after December 31, 2017.

While AFPM is not concerned with potential prospective changes made to section 6426(e), the proposed retroactive changes are concerning for several reasons.



First, the retroactive changes proposed to the AFMC in S. 617 represent a substantive change in law, as the changes would apply to years well before the AFMC's December 31, 2017 expiration. Striking from the statute three of the qualifying categories of alternative fuel in their entirety is not a minor legislative clarification but a substantive retroactive modification of current law.

The proposed retroactive changes to the AFMC are also potentially discriminatory as the changes would only penalize taxpayers who have not yet had claims approved by the IRS. Claims are currently suspended while taxpayers pursue resolution through the court system.

Additionally, the proposed retroactive changes are simply bad tax policy and would set a bad precedent moving forward. Further, there is a lack of any record of congressional intent regarding the AFMC intending to apply to new blending activity. The legislative record and the plain reading of the statute support the reasonable claims that have been made. Retroactively disallowing the credit for certain types of blended fuels goes against the need to have tax policy that is based around certainty and equity.

Retroactive tax increases impair business planning and violate basic principles of transparency and reliability. Retroactive tax changes also undercut the perception of fairness in the tax system and are ultimately inequitable to taxpayers who followed the law and relied upon reasonable statutory interpretations. Taxpayers who have made reasonable claims should not be denied due process simply because Congress deems the results of their drafting unfavorable. Moreover, when taxpayers began submitting AFMC claims, or any credit for that matter, should not be a basis for retroactively disallowing the AFMC.

AFPM ask for the taskforce's support in ensuring these retroactive tax changes are not included as part of any legislation moving forward.

Thank you for your consideration of our concerns. We hope to continue working with you to ensure our tax system provides taxpayers with as much certainty as possible. If you have additional questions, please feel free to contact Justin Sykes at [jsykes@afpm.org](mailto:jsykes@afpm.org) and we would be happy to meet with the task force to talk further about this important issue.

CC: Senate Finance Committee Chairman Chuck Grassley  
Senate Finance Committee Ranking Member Ron Wyden  
Senator Pat Roberts  
Senator Thomas Carper  
Senator John Cornyn  
Senator Sheldon Whitehouse  
Senator Bill Cassidy  
Senator Maggie Hassan

**Alliance to Save Energy  
U.S. Senate Committee on Finance  
Energy Task Force**

**Re: Residential Energy Efficiency – Section 25C, Nonbusiness Energy Property Tax Credit, and  
Section 45L, New Energy Efficient Home Credit**

The Alliance to Save Energy is a non-profit, bipartisan alliance of business, government, environmental, and consumer-interest leaders that advocates for enhanced U.S. energy productivity to achieve economic growth; a cleaner environment; and greater energy security, affordability, and reliability. The Alliance is a coalition of nearly 130 businesses and organizations that collectively represent at least \$615 billion in market capital. The Alliance was founded in 1977 by Sens. Charles Percy (R-Ill.) and Hubert Humphrey (D-Minn.), and today has 14 members of Congress serving on an Honorary Board of Advisors.

Energy efficiency represents an extraordinary opportunity to simultaneously boost economic growth and competitiveness while significantly reducing carbon emissions. Without the gains in energy efficiency made since 1973, the U.S. economy today would require about 60 percent more energy than we currently use, and consumers and businesses would be spending \$800 billion more per year on energy, stifling investment and economic growth. As innovation and technology advancements in areas such as artificial intelligence, materials science and advanced building systems create vast new potential for improving efficiency across the economy, the opportunities ahead are even greater.

Nonetheless, the December 31, 2017, expiration of three efficiency incentives – 25C for existing home improvements, 45L for new home construction, and 179D for commercial buildings – left the U.S. tax code without any direct incentives for energy efficiency. This is a glaring omission that we urge you to rectify as soon as possible.

The importance of energy efficiency is underscored by two key facts:

- Energy efficiency is the single most impactful, cost-effective solution we have for addressing climate change. According to the International Energy Agency (IEA), energy efficiency must account for [more than 40 percent of the emissions reductions](#) needed to meet the goals of the Paris climate accord – more than any other mitigation strategy. Put another way, it is virtually impossible to achieve even modest carbon reduction goals without robust gains in energy efficiency.
- Energy efficiency is one of the largest employers in the energy sector and by far the largest in the clean energy field, with tremendous potential for growth. According to the [U.S. Energy and Employment Report](#), energy efficiency supports more than 2.3 million U.S. jobs (For context, wind and solar together support about 450,000 jobs). Roughly 70 percent of efficiency jobs are in construction and manufacturing – retrofitting homes and buildings and manufacturing high-efficiency building components and equipment. Tax incentives for efficiency improvements will directly stimulate economic activity and job growth in these fields.

There is strong evidence that longer-term, higher-value incentives are effective in pushing markets toward efficiency, with enormous impacts on carbon reduction, economic activity and consumer savings. For example, a Department of Energy analysis of energy savings from the 25C homeowner efficiency incentive found that a long-term, updated incentive could increase sales of affected products by 278 percent, saving consumers some \$52 billion in energy costs and avoiding nearly 340 million metric tons of CO2 equivalent.

Recent reports on rising energy consumption and carbon emissions underscore the imperative of acting quickly. Increased global demand drove a [2.3 percent increase](#) in energy consumption last year, according to the IEA, with a 3.4 percent increase in carbon emissions in the U.S. The demand for all sources of generation increased, yet energy efficiency gains saw only modest improvement. The Business Council for Sustainable Energy's [2019 Sustainable Energy in America Factbook](#) also showed that U.S. energy productivity – a measure of economic output per unit of energy consumed – declined by 0.4 percent as energy consumption outpaced GDP growth.

Well-designed tax incentives for efficiency improvements are among the best policy options we have for tackling carbon emissions while at the same time promoting economic growth, creating a more productive and competitive U.S. economy, and delivering savings and reduced energy costs to consumers.

### **Energy Efficiency Tax Incentives**

The three expired efficiency incentives are particularly important because homes and buildings account for almost 40 percent of our energy use along with approximately 30 percent of greenhouse gas emissions. More than 1 million new homes are built in the U.S. annually, and many new and existing homes and buildings are likely to be in use for 50 or 100 years. By failing to incentivize energy efficiency improvements in both new and existing homes and buildings, we are locking in decades of energy waste, productivity losses and unnecessary emissions.

To make meaningful progress in managing energy consumption and reducing carbon emissions, we must have meaningful tax incentives – in the same way that we have incentives for numerous forms of energy generation. It is critical that these incentives be updated to reflect current efficiency technologies and reinstated with a forward-looking, multi-year extension to give manufacturers, contractors and consumers the certainty and predictability needed to drive efficiency gains.

**As outlined in our attached proposal**, the Alliance urges the Energy Taskforce to consider the improvements to Section 25C, Nonbusiness Energy Property Tax Credit, and Section 45L, Energy Efficient Home Credit, which would update efficiency requirements to ensure the latest technologies and market capabilities are supported, as well as increase the financial values to make the incentives more impactful for consumers and businesses.

### *Residential Buildings and Energy Efficiency*

According to the Energy Information Administration (EIA), the residential and commercial building sectors combine to represent almost [40 percent](#) of the total energy consumed in the U.S. with households accounting for 55 percent of that sector.

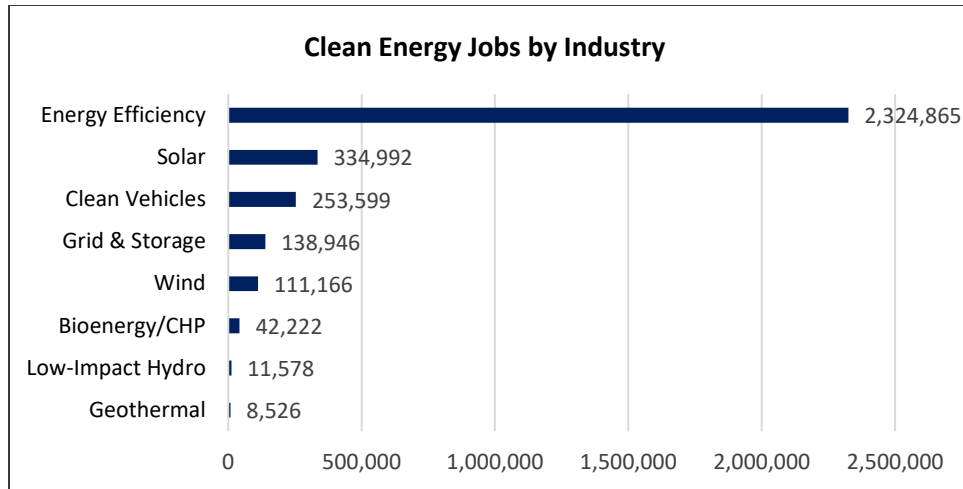
Characteristics and design of homes continues to change, as have consumer habits. For example, [86 percent](#) of homes built since 2000 have central air conditioning, and the total number of homes using air conditioning has increased to 87 percent nationwide. Additionally, approximately 35 percent of homes use electricity as their primary heating source during winter. With electricity use increasing six percent in 2018, and consumption expected to continue to grow at 0.7 percent for households and one percent for commercial floorspace per year, efficiency standards must keep pace to ensure energy availability and security.

With approximately half of the residential and commercial buildings in the U.S. built before 1980, thereby predating higher efficiency standards, and energy use increasing annually, tax incentives encouraging energy efficiency improvements represent a targeted, high-impact policy solution that would deliver long-term savings for homeowners.

#### *Economy-wide Benefits of Energy Efficiency*

Updating and strengthening energy efficiency tax incentives can play a major role in economic growth and energy cost savings for consumers. In the above-mentioned [study](#) issued last year, the Department of Energy analyzed energy savings from five product categories – gas furnaces, electric heat pumps, central air conditioners, gas water heaters, and electric water heaters – under the 25C homeowner efficiency incentive. The study concluded that if the incentives for each product were raised to \$500 and extended for 10 years, sales of high-efficiency products would increase by 278 percent, saving 320 TWh of electricity and 2.1 quadrillion BTUs of natural gas – yielding \$52 billion in consumer energy bill savings. According to the EPA’s Greenhouse Gas Emissions calculator, that translates to avoiding 337 million metric tons of CO2 equivalent – equivalent to the electricity use of half of all U.S. households for an entire year.

The energy efficiency sector also represents an enormous opportunity to grow our workforce and create good-paying American jobs that cannot be outsourced. According to the [2019 U.S. Energy and Employment Report](#) (USEER), energy efficiency jobs showed the highest rate of growth across the entire energy sector, adding 76,000 new positions in 2018 alone. The energy efficiency sector, including those who design, install, and manufacture energy efficiency products and services, accounts for one-third of all energy sector jobs and over two-thirds of all clean energy jobs, employing over 2.3 million people in 2018.



In fact, energy efficiency jobs outnumber electric power generation jobs in 48 states, and in 15 states, efficiency jobs exceed fuel, energy power generation, transmission, distribution, and storage jobs combined. Many of these jobs, almost 1.3 million, are in construction, which is projecting a significant 8.8 percent growth rate. Modernizing and updating Secs. 25C and 45L would promote significant additional job growth in the energy efficiency sector.

To further illustrate the impact of energy efficiency on U.S. employment, members of the Energy Task Force represent over 394,000 Americans employed in whole or in part in the energy efficiency sector (see Table 1):

**Table 1. Energy Efficiency Sector Jobs in States Represented by Energy Task Force Members**

Member	Jobs	Member	Jobs
Sen. John Thune (R-SD)	7,496	Sen. Debbie Stabenow (D-MI)	85,061
Sen. Chuck Grassley (R-IA) <i>ex officio</i>	20,587	Sen. Ron Wyden (D-OR) <i>ex officio</i>	42,547
Sen. Pat Roberts (R-KS)	17,287	Sen. Tom Carper (D-DE)	12,514
Sen. John Cornyn (R-TX)	162,816	Sen. Sheldon Whitehouse (D-RI)	12,773
Sen. Bill Cassidy (R-LA)	22,152	Sen. Maggie Hassan (D-NH)	11,733
<b>Total Energy Efficiency Sector Jobs: <u>394,966</u></b>			

Reducing energy costs is also particularly important for low-income households, which spend a disproportionately high share of their income on utility bills. The average U.S. household spends almost \$2,000 per year on energy and in 2015, over 30 percent of households reported facing a challenge in paying energy bills or sustaining adequate heating and cooling. According to Oak Ridge National Laboratory, the cost of energy represents an average 16.3 percent of the income of households making less than 200 percent of the poverty level versus just 3.5 percent of the income of households making more than 200 percent of the poverty level. Efficiency policies – including incentives – are cost-effective, high-impact tools for driving new technologies to market and reducing household energy burden.

## **Related Expired Energy Efficiency Measures**

The 25C and 45L incentives are part of a suite of three incentives aimed at improving the efficiency of the built environment. The related third expired energy efficiency tax incentive – also in need of modernization and extension – is the Section 179D Commercial Building Tax Deduction. Section 179D provides a tax deduction of up to \$1.80 per square foot to help offset some of the high costs of energy efficiency components and systems for commercial and large multifamily buildings. The 179D deduction has leveraged billions of dollars in private capital, resulting in the energy-efficient construction and renovation of thousands of buildings.

## **Conclusion**

Energy efficiency is our greatest resource, and the absence of meaningful energy efficiency incentives is a glaring omission in the tax code and a lost opportunity to strengthen U.S. economic growth, sustainability and competitiveness. There is strong evidence that longer-term, higher-value incentives are effective in pushing market toward efficiency. Strengthening and extending these incentives presents a bipartisan, forward-thinking opportunity, providing stability and certainty for the future while creating jobs, promoting economic growth, and mitigating the effects of climate change. We look forward to continuing to work with the task force to advance bipartisan efficiency policy in the tax code.

## **ATTACHMENT:**

May 1, 2019

The Honorable Nancy Pelosi  
Speaker of the U.S. House  
Washington, DC 20515

The Honorable Kevin McCarthy  
U.S. House Republican Leader  
Washington, DC 20515

The Honorable Mitch McConnell  
U.S. Senate Majority Leader  
Washington, DC 20510

The Honorable Chuck Schumer  
U.S. Senate Democratic Leader  
Washington, DC 20510

The Honorable Richard Neal  
Chairman  
U.S. House Committee on Ways and Means  
Washington, DC 20515

The Honorable Kevin Brady  
Ranking Republican Member  
U.S. House Committee on Ways and Means  
Washington, DC 20515

The Honorable Chuck Grassley  
Chairman  
U.S. Senate Finance Committee  
Washington, DC 20510

The Honorable Ron Wyden  
Ranking Democratic Member  
U.S. Senate Finance Committee  
Washington, DC 20510



Dear Speaker Pelosi, Republican Leader McCarthy, Majority Leader McConnell, Democratic Leader Schumer, Chairman Neal, Ranking Member Brady, Chairman Grassley and Ranking Member Wyden:

As companies and organizations representing millions of workers in energy efficiency, construction, manufacturing and other fields, we write to urge you to modernize and extend key tax incentives for energy efficiency that expired more than a year ago.

The expiration of three efficiency incentives on Dec. 31, 2017, left the U.S. tax code without any direct incentives for energy efficiency. This is a glaring and urgent omission in both climate policy and economic policy, and we urge you to address it as quickly as possible. We view this as a bipartisan opportunity that would accomplish a number of shared goals: Efficiency incentives have the potential to significantly reduce energy costs for consumers across the country, drive down carbon emissions, and stimulate job creation and economic activity.

Already, energy efficiency is by far the largest sector in the clean energy economy, supporting more than 2.3 million jobs across the country, the vast majority of which are in construction and manufacturing. Additionally, energy efficiency is widely viewed as the single most effective solution for addressing climate change.

Homes and buildings under construction or renovation today will likely be in use for 50 to 100 years, while energy intensive equipment such as air conditioners and furnaces will likely be used for a decade or more. As a result, by not incentivizing efficiency now in a sector that accounts for 40 percent of U.S. energy consumption, we are locking in unnecessary energy waste and carbon emissions for decades to come while also weakening U.S. economic productivity and competitiveness.

Specifically, we ask that you incorporate the attached updates to the 25C incentive for homeowner efficiency improvements and 45L incentive for new home construction, and pass a forward-looking, multi-year extension that would provide the certainty needed for consumers, manufacturers, contractors and others to fully capitalize on the incentives. The expired incentives, as written, are outdated and no longer reflect the current market for high-efficiency equipment and building technologies. In some cases, such as for water heaters, the efficiency metrics referenced are obsolete.

These updates to the incentives, and the call for a multi-year extension, are endorsed by the undersigned companies and organizations. We also support a modernized, forward-looking, multi-year extension of the 179D incentive for commercial building efficiency improvements.

We look forward to working with you on this important issue. If you have any questions, please contact Ben Evans at the Alliance to Save Energy at [bevans@ase.org](mailto:bevans@ase.org).

Sincerely,

A.O. Smith  
Air-Conditioning, Heating & Refrigeration Institute  
Alliance to Save Energy



American Council for an Energy-Efficient Economy (ACEEE)  
American Institute of Architects  
Andersen Windows & Doors  
ASHRAE  
Association of Energy Engineers  
Carrier Corporation  
Citizens for Responsible Energy Solutions (CRES)  
Covestro LLC  
Daikin US Corporation  
Danfoss  
DFW International Airport  
DuPont  
E4TheFuture  
Energy Systems Group  
Goodman Manufacturing  
Hannon Armstrong  
Hearth, Patio & Barbeque Association  
Home Performance Coalition  
Illuminating Engineering Society  
Ingersoll Rand  
Johnson Controls  
Knauf Insulation  
National Association of State Energy Officials  
National Insulation Association  
Natural Resources Defense Council  
North American Insulation Manufacturers Association  
Polyisocyanurate Insulation Manufacturers Association  
Sheet Metal and Air Conditioning Contractors National Association  
Signify  
U.S. Green Building Council

cc: Members of the Senate Finance and House Ways and Means Committees

### **Energy Efficiency Tax Incentives**

#### **Proposed Updates – Spring 2019**

For questions about this proposal please contact Ben Evans at the Alliance to Save Energy at [bevans@ase.org](mailto:bevans@ase.org).

#### **45L Energy Efficient Home Credit**

- Current:
  - Maximum Credit: \$2,000 for new homes and manufactured homes achieving higher target;  
\$1,000 for manufactured homes achieving lower target.

- Requirements: Higher target: Energy consumption 50 percent below home built to IECC 2006. Lower target: Manufactured homes achieving 30 percent energy savings for heating and cooling or meeting ENERGY STAR requirements.
- **Proposed:**
  - **Maximum credit: \$2,500 for new homes that meet the building envelope requirements of the 2015 IECC and are certified in compliance with 2015 IECC Section R406 to achieve the Energy Rating Index (ERI) outlined in Table R406.4 (Which vary by climate region from ERI 51 to ERI 55). Note: To prevent incentive double-dipping, the ERI score must be achieved through efficiency measures only, exclusive of any renewable energy credits.**

**Alternative credit: \$1,000 for homes and manufactured homes that meet ENERGY STAR requirements.**

### **25C Nonbusiness Energy Property Credit for Existing Homes**

- Current:
  - Maximum Credit: 10 percent up to maximum of \$500 (lifetime cap), with individual product category caps in some cases.
- **Proposed:**
  - **Maximum Credit: 15 percent up to maximum of \$1,200 (lifetime cap, reset upon enactment), with individual product category caps eliminated or raised in many cases. This allows a homeowner to do multiple projects. For example, homeowner could take \$600 credit for new HVAC AND take \$600 credit for envelope improvements such as insulation. Applicable expenses include labor costs. Where applicable, qualified equipment must be installed according to ACCA QI standards in effect at the time of enactment. If any referenced standard in this package is terminated, the Secretary of the Treasury, in consultation with the Secretary of Energy, shall replace it with a similar standard.**
  - Requirements:
    - Building Envelope:
      - Roof or roof products - ENERGY STAR.
        - **Proposed: Eliminate category as EPA is ending ENERGY STAR roof category.**
      - Exterior window, skylight or door - ENERGY STAR 6.0. (Credit for windows/skylights capped at \$200 and doors at \$500.)
        - **Proposed: Cap of \$200 for ENERGY STAR windows or \$600 for ENERGY STAR Most Efficient windows; and \$500 for ENERGY STAR doors, with limit of \$250 per door.**
      - Prescriptive criteria IECC 2009 for everything else.
        - **Proposed: IECC 2015. Product category cap raised to \$600.**
    - Qualified Energy Property:
      - Central air conditioner: Highest efficiency tier from CEE in effect 1.1.2009. Product category cap of \$300.
        - **Proposed: Highest CEE Tier in effect at date of enactment. (Currently SEER 18/EER 13 for Split Central AC and Split Air Source Heat Pumps; SEER 16/EER 12 for Packaged Central AC and Packaged Air Source Heat Pumps). Product category cap increased to \$600.**

- Furnace or boiler (natural gas, propane or oil): Annual fuel utilization efficiency rate of 95 or higher. Product category cap of \$150. Additionally, advanced main air circulating fans using no more than 2 percent of a furnace's total energy qualifies for a \$50 credit.
  - ***Proposed: AFUE equal to or greater than 97 percent for furnaces and 95 percent for boilers. Product category cap raised to \$300 for furnaces and \$600 for boilers. Additional \$300 furnace incentive available if converting from an existing non-condensing furnace to a condensing furnace. Fans provision removed.***
- Electric heat pumps: Highest efficiency tier from CEE in effect 1.1.2009. Product category cap of \$300.
  - ***Proposed: Highest CEE Tier in effect at date of enactment. (Currently SEER 18/EER 13 and HSPF 10.0 for Split Air Source Heat Pumps; SEER 16/EER 12 and HSPF 8.2 for Packaged Air Source Heat Pumps). Product category cap increased to \$600.***
- Water heater: Natural gas, propane or oil - Energy factor of at least 0.82 or thermal efficiency of at least 90 percent. (Electric heat pump water heaters with energy factor of at least 2.0 qualify). Product category cap of \$300.
  - ***Proposed: Gas, propane or oil storage water heaters – medium draw UEF equal to or greater than UEF 0.78; high draw UEF equal to or greater than 0.80. Gas, propane or oil tankless heaters UEF greater than or equal to 0.87 or TE greater than or equal to 0.90. Product category cap raised to \$400.***
  - ***Proposed: Electric heat pump water heaters – UEF equal to or greater than 3.0. Product category cap raised to \$600.***
- Biomass stove - Thermal efficiency of at least 75 percent. Product category cap of \$300.
  - ***Proposed: Thermal efficiency of at least 73 percent higher heating value through 2020 – and 75 percent higher heating value after 2020 – as reported by the EPA on the "List of EPA Certified Wood Stoves" or "List of EPA Certified Hydronic Heaters" or "List of EPA Certified Forced-Air Furnaces." Product category incentive cap raised to \$400.***



## **Provide Comparable Incentives to Energy-Related Provisions in the Federal Tax Code**

### **Summary**

Federal tax expenditures are the primary tool Congress uses to incentivize energy-related investments. Most such incentives do not work for public power utilities, which are exempt from federal taxation. The American Public Power Association (APPA or Association) believes that if the goal has market-wide policy objectives, tax-based incentives should be drafted to accommodate tax-exempt entities, including public power utilities. This could include amending current laws to allow the transfer of such tax benefits to others or to allow the issuance of special purpose municipal bonds to finance facilities that would otherwise qualify for these tax benefits.

### **Background**

Congress routinely seeks to incentivize certain types of energy investments and energy production. Sometimes this is done through direct federal grants, subsidized loans, and/or loan guarantees, but the most significant incentives are provided through the federal tax code. According to the most recent Joint Committee on Taxation estimate, the five-year cost for energy-related tax expenditures is \$67 billion.

These policies began decades ago. Business energy investment tax credits (ITCs) were enacted in 1978 and 1980 to stimulate the development of “alternative” energy sources.<sup>1</sup> These credits remains in effect today, and are estimated to have a five-year cost of \$13.5 billion.<sup>2</sup> In 1992, Congress created a tax credit for the production of energy from renewable resources.<sup>3</sup> This production tax credit (PTC) remains in effect today, and is estimated to have a five-year cost of \$25.6 billion.<sup>4</sup> Combined ITCs and PTCs account for 58 percent of the federal energy-related tax-expenditure budget. Most of the remaining 42 percent is largely attributable to the electric vehicle tax credit, residential tax credits, and credits, depreciation provisions, and deductions related to fossil fuel extraction and transmission. (See Table 1: Estimates of Energy-Related Federal Tax Expenditures: 2018–2022.)

However, tax-exempt entities, including public power utilities, cannot directly benefit from either the ITC or PTC.<sup>5</sup> Likewise, a public power utility cannot feasibly enter the sort of partnership flip transaction that

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<sup>1</sup> Energy Tax Act, Pub. L. 96-618, 92 Stat. 1374; Crude Oil Windfall Profits Tax Act Pub. L. 96-223, 94 Stat. 229 (codified as 26 U.S.C. 48).

<sup>2</sup> Jt. Comm. on Taxation, “Estimates of Federal Tax Expenditures for Fiscal Years 2018-2022,” JCS-81-18 (Oct. 4, 2018).

<sup>3</sup> Energy Policy Act of 1992, Pub.L. 102-486 § 1914 (codified as 26 U.S.C. 45)

<sup>4</sup> Jt. Comm. on Taxation, *supra* note 2.

<sup>5</sup> Other energy-related tax expenditures generally do not directly apply to an electric power utility and so are not an issue here.

electric cooperatives can use to indirectly access the ITC or PTC.<sup>6</sup> Public power utilities can indirectly benefit from such credits by entering long-term power-purchase agreements with taxable entities that can benefit from the credits. However, the transactional costs of such agreements can be high. Additionally, only a portion of the value of the tax credit is generally considered to be passed on to the purchaser, thus muting the incentive effect.

These costs and limitations are problematic in that public power utilities and rural electric cooperatives serve a substantial percentage of the nation's retail electric customers (14.5 percent by public power and 12.9 percent by rural electric cooperatives) – a significant omission if Congress is seeking market-wide changes in energy-related investment and production decisions.

### **Comparable Incentives**

Congress has tried several methods of addressing these problems. In 1992, Congress authorized Renewable Energy Production Incentives (REPI) for public power and cooperative utilities, which sought to provide direct payments comparable to the PTC earned by taxable entities. However, during the 15 years during which REPI funds were appropriated, public power utilities and rural electric cooperatives qualified for \$329 million in REPI payments, but Congress appropriated just \$54 million. And, after 2009 Congress stopped appropriating funds for REPI entirely.

In the Energy Policy Act of 2005 (EPAct05),<sup>7</sup> Congress sought to provide an investment incentive for certain tax-exempt entities akin to the ITC by creating the Clean Renewable Energy Bond (CREB). Qualified CREB issuers included public power utilities, states and localities, and rural electric cooperatives. Interest paid on a CREB is taxable, but the CREB holder receives a tax credit. However, tax credit bonds are quite complex, and issuers had a difficult time finding willing buyers. As a result, in 2010, Congress modified CREBs (now called New CREBS) to allow issuers the option of receiving a direct payment from Treasury in lieu of providing bond holders a tax credit.<sup>8</sup> CREBs and New CREBS were hamstrung by an overall volume limit which was initially set at \$800 million, but eventually increased to \$2.4 billion.<sup>9</sup> This limit was problematic in that allocating volume was time consuming and burdensome both for issuers and the Internal Revenue Service (IRS). The limit was also substantially lower than needed to meet demand. For example, in 2009, the IRS received 38 applications from public power utilities requesting a total of \$1.45 billion in New CREB bond volume, but just \$800 million of bond volume was available for public power.<sup>10</sup> New CREBs issued as direct payment bonds were further handicapped by budget sequestration—across the board cuts applying to all mandatory spending,

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<sup>6</sup> Even the partnership flip has significant limitations, including substantial transaction costs making, it economically viable for only large projects (in the range of \$50–\$200 million); *see*, Nat'l Rural Elec. Coop. Ass'n, Cooperative Utility PV Field Manual: Volume I: Business Models and Financing Options for Utility-Scale Solar PV Installations (2015), at 51.

<sup>7</sup> Energy Policy Act of 2005, Pub. L. 109-58 § 1303 (codified as 26 U.S.C. 54).

<sup>8</sup> Hiring Incentives to Restore Employment Act of 2010, Pub. L. 111-147, 124 Stat. 71.

<sup>9</sup> American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, 123 Stat. 115.

<sup>10</sup> Internal Revenue Service "IRS Announces New Clean Renewable Energy Bonds Allocations" (Oct. 27, 2009) (<http://www.irs.gov/Tax-Exempt-Bonds/IRS-Announces-New-Clean-Renewable-Energy-Bonds-Allocations>) (last visited Aug. 13, 2013).

including payments to issuers of direct payments bonds. Finally, in 2017, Congress prohibited the issuance of any additional New CREBs as part of the Tax Cuts and Jobs Act.<sup>11</sup>

## **Transferability**

In some instances, Congress has forgone trying to provide comparable incentives to tax-exempt entities that cannot benefit from tax expenditures, and instead allowed for the transfer of these tax benefits to taxable entities that can. For example, in EPAct05, Congress expanded on existing tax preferences for clean-fuel motor vehicles by creating a tax credit for the purchase of an alternative fuel vehicle, including hybrid vehicles.<sup>12</sup> Under the statute, if the purchaser is a tax-exempt entity, the tax credit automatically transfers back to the vehicle's seller. Identical language was included in 2008, when Congress provided a tax credit for plug-in electric drive motor vehicles.<sup>13</sup>

In 2018, Congress modified two existing ITCs (one for carbon capture and sequestration, the other for advanced nuclear facilities) to allow for transferability.<sup>14</sup> Now the carbon-capture and sequestration tax credit can be transferred from the purchaser of the carbon capture facility to the person that disposes of the carbon dioxide, uses the carbon dioxide, or uses the carbon dioxide as a tertiary injectant. Similarly, the advanced nuclear tax credit now can be transferred to another "eligible project partner."

## **Further Congressional Action**

In recent years, lawmakers have looked to these past examples as inspiration for future legislation. In the 115<sup>th</sup> Congress, Representatives Tom Reed (R-NY), Darin LaHood (R-IL), and Erik Paulsen (R-MN) introduced H.R. 7196, the Energy Sector Innovation Credit Act of 2018, which would have created a new emerging energy technology tax credit that could have been transferred by a public power utility to other partners in the transaction. In the 116<sup>th</sup> Congress, Senator Ron Wyden (D-OR) introduced S. 1288, the Clean Energy for America Act of 2019, which would replace existing ITCs and PTCs with a technology-neutral tax credit. The tax credit could not be transferred, but public power utilities could issue Clean Energy Bonds for comparable investments. Akin to New CREBs, CEBs could be issued as either tax credit or direct payment bonds. The credit to bondholders and credit payment to bond issuers would equal up to 70 percent of interest paid on the bond—roughly equivalent in economic benefit to the up-front 30-percent tax credit provided to taxable entities. Unlike New CREBs, there would be no limit on the volume of CEBs that could be issued.

## **APPA Position**

APPA believes that if Congress intends to create incentives in pursuit of national energy goals, it should realize that tax-based incentives will not have the market-wide reach of direct grants and other incentives. As a result, the Association believes that tax-based incentives should be drafted to accommodate tax-exempt entities, including public power utilities. New CREBs and transferability both provide good

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<sup>11</sup> Pub. L. 115-97, 131 Stat. 2054.

<sup>12</sup> Energy Policy Act of 2005, *supra* note 3.

<sup>13</sup> Emergency Economic Stabilization Act of 2008, Pub. L. 110-343, 122 Stat. 3765.

<sup>14</sup> Bipartisan Budget Act of 2018, Pub. L. 115-123, 132 Stat. 63.

examples of how such comparable incentives could be accomplished. In the case of New CREBs, many of their shortcomings can be overcome, including the imposition of a volume cap that is not imposed on otherwise tax-credit qualifying projects. APPA would also urge that any such approach follow the model adopted by Senator Wyden in exempting direct payments to issuers from budget sequestration. The Association also supports the transferability of tax credits. This transferability is already proving a critical lifeline to advance nuclear power projects in Georgia and Idaho.

For more information, please contact John Godfrey at (202) 467-2929, or [jgodfrey@publicpower.org](mailto:jgodfrey@publicpower.org).

<b>Table 1: Estimates of Energy-Related Federal Tax Expenditures: 2018 - 2022</b>	
<b>Provision</b>	<b>Total 2018 – 2022 (\$ billions)</b>
Credits for electricity production from renewable resources (PTCs)	25.6
Energy investment credits (ITCs)	13.5
Credits for alternative technology vehicles	7.6
Residential energy-efficient property credit	7.3
Expensing of exploration, development costs (oil, gas, and other fuels)	3.2
Excess of percentage over cost depletion (oil, gas, and other fuels)	3.0
Amortization of air pollution control facilities	2.2
Exceptions for energy-related publicly traded partnership	1.7
Depreciation recovery periods (MACRS) for energy-specific items	0.9
Amortization of geological/geophysical expenditures for oil and gas exploration	0.4
Coal production credits	0.3
Credit for investment in advanced energy property	0.3
Credit for holders of clean renewable energy bonds	0.2
Credit for holders of qualified energy conservation bonds	0.2
Credits for investments in clean coal facilities	0.2
Exclusion of interest on qualified private activity bonds for energy production facilities	0.2
Credit for energy-efficient improvements to existing homes	0.1
Exclusion of energy conservation subsidies provided by public utilities	0.1
<b>TOTAL</b>	<b>67.0</b>



The Honorable John Thune  
Co-Lead, Energy Taskforce  
511 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Debbie Stabenow  
Co-Lead, Energy Taskforce  
731 Hart Senate Office Building  
Washington, D.C. 20510

June 14, 2019

Dear Senators Thune and Stabenow:

The American Public Power Association (APPA or Association) strongly supports of the efforts of the Energy Task Force to find long-term solutions to expired and expiring energy-related tax provisions. The Association agrees that these provisions are handicapped not only by their temporary nature, but by their design. Specifically, if the goal is to provide market-wide incentives to promote “long-term growth and investment,” then tax-based incentives are not an effective tool for tax-exempt entities, including public power utilities.

While direct grants, loans, and loan subsidies are available, federal tax expenditures are the primary tool Congress uses to incentivize energy-related investments. However, such provisions do not provide an effective incentive for tax-exempt entities, including public power utilities. Collectively, roughly 28 percent of the nation’s retail electric power customers are served by tax-exempt entities, including public power utilities and electric cooperatives. Public power utilities alone serve more than 49 million people.

Instead, public power utilities receive only the indirect benefits of these credits, and then only after costly and complex purchase power agreements. APPA believes a more direct – and more effective – approach would allow the issuance of direct payment bonds for targeted energy-related investments. Please see the attached white paper that provides a more comprehensive review of this issue and potential comprehensible incentives for public power.

Thank you for your consideration and commitment. If you have any additional questions, please do not hesitate to contact me directly at 202-467-2900.

Sincerely,

A handwritten signature in black ink, appearing to read "Desmarie Waterhouse".

Desmarie Waterhouse  
Vice President, Government Relations & Counsel

cc: The Honorable Thomas Carper  
The Honorable Bill Cassidy  
The Honorable John Cornyn  
The Honorable Maggie Hassan  
The Honorable Pat Roberts  
The Honorable Sheldon Whitehouse



# CAPITOL TAX P A R T N E R S

June 14, 2019

The Honorable John Thune  
The Honorable Debbie Stabenow  
Co-Leaders, Energy Extenders Task Force  
219 Dirksen Senate Office Building  
Washington, DC 20510

Submitted via: [Energy\\_Taskforce@finance.senate.gov](mailto:Energy_Taskforce@finance.senate.gov)

Dear Co-Leaders Thune and Stabenow:

We write on behalf of an ad hoc group of companies that are involved in every aspect of the development of renewable energy projects throughout the United States, primarily with respect to wind energy. Individually, they design, develop, construct and operate renewable energy projects; and they manufacture, in the United States, components for such projects. The tax incentives provided to renewable energy, particularly the renewable production tax credit (PTC) and the investment tax credit (ITC), have been the most significant policy drivers of renewable energy deployment in the United States. As you are aware, the PTC for wind energy and the ITC for energy property are subject to a phaseout pursuant to tax extenders legislation enacted in 2015.

We urge that your recommendations to the Senate Finance Committee on energy tax extenders include the continuation of tax incentives for renewable energy. We particularly want to call your attention to a proposal that is designed to better ensure that the value of the PTC is realized as intended by Congress, specifically, H.R. 2704, the “Renewable Energy Transferability Act,” introduced in the House of Representatives by Representatives Blumenauer (D-OR) and LaHood (R-IL).

## ***Issues presented by current law***

The Internal Revenue Code (Code) currently provides a somewhat conflicted approach to most tax incentives, including tax incentives for renewable energy. On the one hand, the provisions do provide a useful impetus to motivate taxpayers to conduct research and invest in the deployment of renewable energy. On the other hand, the Code and underlying regulations provide several provisions that bar or limit the use of the tax benefits, significantly reducing the efficiency of the incentives.<sup>1</sup>

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<sup>1</sup> These limitations include (1) the taxpayer’s need to have sufficient tax liability to use the benefit (so-called “tax appetite”), (2) the alternative minimum tax, (3) the Base Erosion and Anti-abuse Tax, (4) the passive loss rules, (5) the at-risk rules, (6) the limitations on carryovers of losses and tax credits, (7) the master limited partnership qualification requirements, (8) the PTC requirement that a renewable energy facility be both owned and operated by the same person, (9) the tax-exempt ownership rules, (10) the partnership allocation rules, and (11) the need to demonstrate the validity and substance underlying any partnership, lease or other transaction involving a tax benefit transfer.



Many of these limiting provisions are intended to address “tax shelters,” i.e., the perceived abuse of using or creating tax benefits in a manner unintended by Congress. Tax sheltering is not a concern with respect to the PTC because the credit applies to a specifically defined investment (a qualifying renewable energy facility), is only available if the facility produces electricity (which is regulated and easily metered), and the electricity must be sold to an unrelated third party (allowing for easy verification). These requirements minimize the potential for abuse. Since its enactment in 1992, controversy between taxpayers and the IRS regarding tax sheltering allowed by the PTC has been nonexistent. Thus, the additional limitations detailed herein represent unnecessary burdens with respect to PTC utilization, creating inefficiencies that reduce the effectiveness of the incentives.

The various limitations have a significant effect on the cost of and structuring for renewable energy projects. Renewable energy developers typically do not have sufficient tax liability to utilize all the PTCs generated by their various projects, and need to enter into tax benefit transfer transactions with tax equity partners who have tax appetites. Because of the various restrictions described above and the nature of renewable energy investments, the potential pool of such investors is quite small. Furthermore, because PTCs are spread over a ten-year period, the investor must make the judgment that it will not only have a tax appetite in the year of investment, but for the next decade as well. Investments in renewable energy projects are risky as it is. The investor must take into account the strength of the technology, the validity of the wind studies, obligations to mitigate impacts on endangered and threatened species, the future price and demand for electricity, whether the necessary permits are in order, whether the facility met the “start of construction” and other requirements to be eligible for the PTC, and whether the project will have access to the transmission grid. Adding a tax appetite risk creates further complications, decreases the number of interested investors, and can result in a significant discounting of the value of the credit. This discounting reduces the public benefits Congress intended in providing the tax incentives in the first place.

Traditionally, there have been fewer than 20 firms that enter into tax equity transactions with renewable wind energy developers to any significant degree. Structurally, these firms must enter into complicated partnership arrangements with developers to invest in the PTC (see, e.g., Rev. Proc. 2007-65). Various partnership rules restrain the ability to effectively flow through the PTCs to the investor under these arrangements, and raise uncertainty that the investors will be guaranteed a return based on the PTCs. The partnership structures can also cause significant tax and financial accounting issues. A separate partnership generally is needed for each renewable energy project, further increasing transaction costs. In general, even though the partnership structure is the best (and generally only) way for investors to share in PTCs under current tax law, this structure is a costly and inefficient method to transfer tax benefits. The inefficiency of these structures and their high transaction costs mean that a certain amount of the value of the PTCs are “left on the table,” and do not operate as Congress intended, i.e., to attract investment in renewable energy and reduce the levelized cost of renewable energy production for consumers.

Renewable energy developers have dealt with these inefficiencies since the creation of the PTC. However, recent events have exacerbated these issues. In the Tax Cuts and Jobs Act of 2017, Congress reduced the corporate tax rate and enacted the Base Erosion and Anti-abuse Tax (the “BEAT”). The corporate rate reduction means that traditional tax equity investors have less capacity to invest in the tax benefits from renewable projects. The BEAT acts a minimum tax for certain multinational firms with sufficient deductible cross-border payments. The BEAT limits a taxpayer’s ability to use renewable energy tax credits. For taxable years beginning before 2026, the BEAT limits



the use of renewable energy tax credits to the lesser of (1) 80 percent of such credits or (2) 80 percent of the taxpayer's BEAT liability. For taxable years beginning after 2025, renewable energy tax credits cannot offset the BEAT. Any credits subject to these limitations are not carried forward; they are simply "lost." Thus, the BEAT discourages certain firms from investing in renewable energy tax credits, particularly if the ten-year production period for the PTCs from a qualified facility extends beyond 2025, when renewable credits cannot be used. Tax equity investors typically are multinational corporations that have profiles that indicate that they may be subject to the BEAT.<sup>2</sup>

The phase down of the PTC also presents transactional difficulties. Tax equity transactions generally are conducted through partnerships. Because the value of the PTC is reduced for wind projects that began after 2106,<sup>3</sup> tax equity investors will invest less in such projects, creating smaller partnership capital accounts. However, depreciation and other deductions that flow through to tax equity investors are not reduced proportionately, resulting in these capital accounts being eliminated more quickly. In order to continue to claim PTCs, tax equity investors whose capital accounts have been eliminated must enter into deficit restoration obligations (a "DRO", i.e., a promise by the investor to contribute more capital to the partnership in the event of a liquidation). Because DROs are liabilities, they impose reporting and financial burdens on tax equity investors that may result in additional transaction costs and reduced investment.

### *Making the PTC more efficient*

There is a range of options Congress could adopt to make the tax benefits for renewable energy more efficient and effective. One end of the spectrum is refundability. The original renewable energy tax incentive was refundable (the energy ITC enacted in 1978). Similarly, section 1603 of the American Recovery and Reinvestment Act of 2009 allowed taxpayers, for a limited period, to claim direct payments in lieu of tax credits for renewable energy projects to address the scarcity of tax equity during the economic downturn. Under current law, certain alternative fuel tax credits are refundable. More recently, the Obama Administration proposed to make the PTC refundable in its fiscal year 2015 and 2016 budget proposals.

Another approach would make the PTC more easily assignable or transferable. There are precedents for transferability. The PTC applicable to certain closed-loop biomass facilities may be claimed by the owner, lessee or operator of the facility. In 2003, the Senate Finance Committee favorably reported a bill (S.1149, the "Energy Tax Incentives Act of 2003") that would have allowed certain tax-exempt owners of renewable energy projects to assign any PTCs to any other person, or use the credits as prepayment to certain loans or obligations undertaken by such owner under the Rural Electrification Act of 1936. The railroad track maintenance credit of Code section 45G allows Class II or Class III railroads eligible for the credit to assign the credit to another Class II or Class III railroad, any person who uses the facilities of a Class II or Class III railroad, or any person who furnishes railroad-related services to a Class II or Class III railroad. Most recently, in 2018, Congress amended the advanced nuclear PTC of Code section 45J to allow certain qualified owners of a qualified nuclear

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<sup>2</sup> It is difficult to generalize whether a particular firm will be subject to the BEAT because its application depends on the firm's particular facts and circumstances. Further, the Treasury Department has to not finalized regulations regarding the operation of the BEAT.

<sup>3</sup> For projects that started in 2017, the PTC is worth 80 percent of its otherwise full value, 60 percent for projects started in 2018, and 40 percent for projects started in 2019.



facility to transfer credits to eligible project partners (generally, other taxpayers that are also involved with the facility, whether or not as an owner).

On May 14, 2019, Representatives Blumenauer and LaHood introduced H.R. 2704, the “Renewable Energy Transferability Act.” Similar to the 2018 changes to Code section 45J, the Act would allow taxpayers otherwise eligible for renewable energy credits to transfer such credits to eligible project partners. Eligible project partners would be persons that had an ownership interest in the qualified renewable facility, provided equipment or services in the construction of the facility, transmitted or distributed power from the facility, purchased electricity produced by the facility pursuant to a contract, or provided financing for the facility (other than financing in the form of tax equity).

The bill is tightly constructed to avoid the potential for abuse. As described above, the class of persons to whom a tax credit may be transferred is limited, and Treasury has the authority to further refine the definition of eligible project partners. The generation of electricity is metered and reported, facilitating the determination of PTCs generated in a taxable year. These credits may be transferred only once, and must be transferred by the due date of the tax return for the year that the credit was first determined. Treasury has authority to promulgate reporting requirements to track credit transfers. Thus, the bill should not impose any compliance issues that do not otherwise exist for renewable energy credits (and may, in fact, facilitate compliance by reducing the use of partnerships that are acknowledged to be difficult to audit).

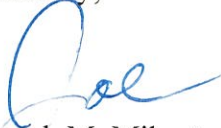
We believe that Congress should enact H.R. 2704, or a similar provision, to strengthen the use of renewable energy tax credits. The current use of tax equity transactions to transfer tax credits creates unnecessary complexity for, and financial drags on, the development of renewable energy projects. These burdens result in a reduction in the number of renewable energy projects and increased consumer prices for transaction costs that are passed along.

We believe that exploring ways to make renewable energy credits more efficient is appropriate in the context of an examination of expired and expiring provisions given that the wind PTC expires for projects that begin after this year, and the phase down itself causes some of the inefficiencies we have discussed herein.

We would appreciate the opportunity to discuss these concepts in greater detail with you and your staffs and explore the appropriate changes that could be made to make renewable energy tax incentives more efficient. Increased efficiency could increase the development of more renewable energy projects and could lead to potential cost savings to consumers of renewable power.

Thank you for your attention to this matter. If you have any questions, please contact Joseph Mikrut, Melissa Mueller or Will Davis of Capitol Tax Partners at 202-289-8700.

Sincerely,

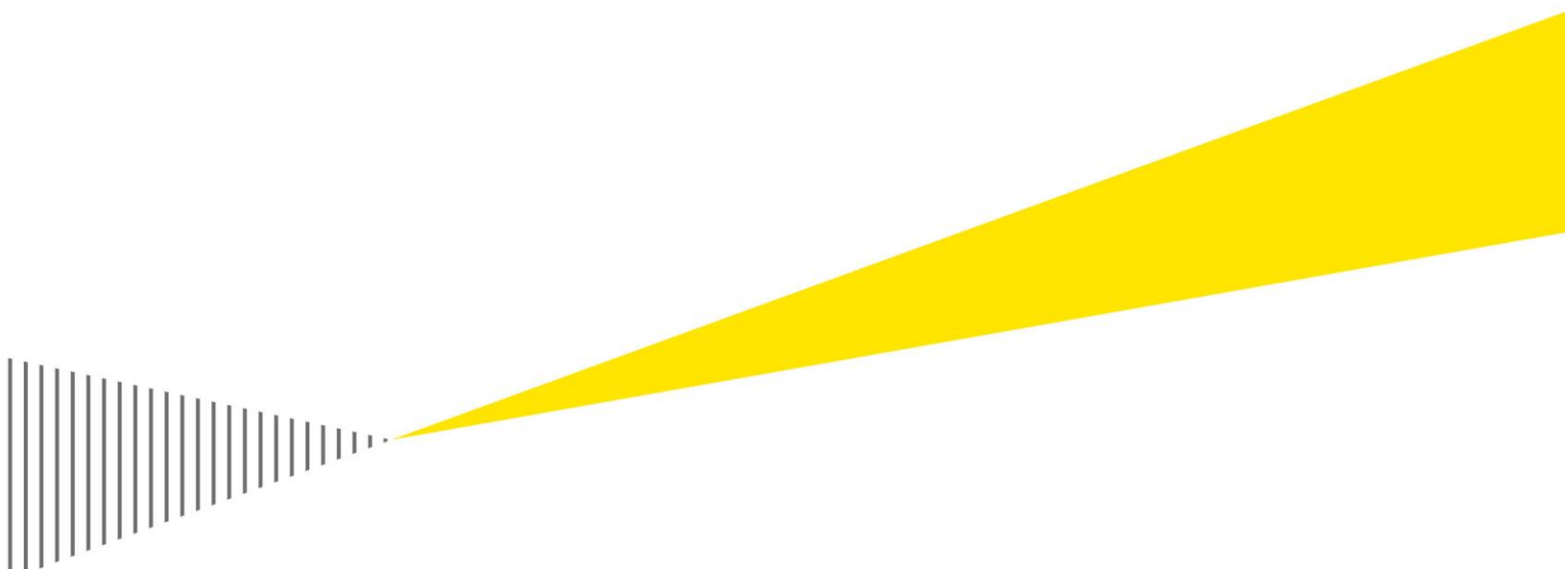


Joseph M. Mikrut

# **Federal revenue estimates for potential changes to the plug-in electric drive vehicle tax credit**

Prepared for American Fuel & Petrochemical  
Manufacturers

May 2019



Building a better  
working world



## Executive summary

This report estimates the impact of potential changes to the plug-in electric drive motor vehicle tax credit to federal revenues.

Under current law, the maximum amount available to purchasers of vehicles qualifying for the credit is \$7,500 per vehicle. The credit is available for the first 200,000 qualifying vehicles an individual manufacturer sells. Once a manufacturer reaches the 200,000 vehicle cap, the credit phases out for that manufacturer's vehicles. The credit amount is calculated based on the kilowatt capacity of the battery in a qualifying vehicle. The credit is \$2,500 plus \$417 for vehicles with at least 5 kilowatt hours of capacity and an additional \$417 per kilowatt hour of capacity in excess of 5 kilowatt hours, up to a maximum of \$7,500 per vehicle.

This report examines the federal revenue cost of the following potential changes to the credit:

1. *Increase vehicle cap from 200,000 to 500,000 qualifying vehicles.* This policy is estimated to cost \$6.6 billion over the first five years (2019-23) and \$15.2 billion over the 10-year budget window (2019-28). The cost per additional vehicle sold because of the higher cap would range from \$22,400 to \$34,400 depending on the year.
2. *Remove vehicle cap.* This policy is estimated to cost \$11.0 billion over the first five years (2019-23) and \$46.4 billion over the 10-year budget window (2019-28). The cost per additional vehicle sold because of the higher cap would range from \$30,800 to \$34,400 depending on the year.
3. *Increase vehicle cap from 200,000 to 600,000 qualifying vehicles, reduce maximum credit from \$7,500 to \$7,000 for these additional 400,000 qualifying vehicles, and shorten phase out.* This policy, which can be found in the Driving America Forward Act, is estimated to cost \$6.3 billion over the first five years (2019-23) and \$15.7 billion over the 10-year budget window (2019-28). The cost per additional vehicle sold because of these credit modifications would range from \$23,000 to \$33,900 depending on the year.

These three proposals would expand the credit by increasing or removing the per manufacturer vehicle credit. Increases to the vehicle cap would both encourage additional purchases and result in some of the revenue cost going to those who would have purchased an electric vehicle in the absence of the credit incentive.

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# Federal revenue estimates for potential changes to the plug-in electric drive vehicle tax credit

## I. Introduction

This report estimates the federal revenue effect of potential changes to the plug-in electric drive motor vehicle tax credit (the “electric vehicle tax credit”).<sup>1</sup>

Under current law, the maximum credit is \$7,500 per qualifying vehicle. The credit is available for the first 200,000 qualifying vehicles produced by an individual manufacturer. Once a manufacturer reaches the 200,000 vehicle cap, the credit is phased out over six quarters as follows:

- ▶ 100% of credit in current (1st) and next (2nd) quarter
- ▶ 50% of credit in following two (3rd and 4th) quarters
- ▶ 25% of credit in following two (5th and 6th) quarters
- ▶ 0% of credit thereafter

The credit amount is calculated based on the kilowatt capacity of the battery in a qualifying vehicle. The credit is \$2,500 plus \$417 for vehicles with at least 5 kilowatt hours of capacity, and an additional \$417 per kilowatt hour of capacity in excess of 5 kilowatt hours. The maximum credit is \$7,500 per vehicle. The electric vehicle tax credit applies to electric vehicles (EVs) and plug-in hybrid electric vehicles (PHEVs), but not to hybrid electric vehicles (HEVs).<sup>2</sup>

In this report, three potential expansions of the electric vehicle tax credit are modeled:

1. Increase vehicle cap from 200,000 to 500,000 qualifying vehicles per manufacturer
2. Remove vehicle cap
3. Increase vehicle cap from 200,000 to 600,000 qualifying vehicles per manufacturer, reduce maximum credit from \$7,500 to \$7,000 for these additional 400,000 qualifying vehicles, and shorten phase out (100% of credit in quarter 600,000 sales is reached and following quarter, 50% in subsequent quarter, and 0% thereafter)

## II. Current-law baseline for electric vehicle tax credit

The current-law baseline reflected in this report incorporates a projection of the number of qualifying vehicles by manufacturer and estimates of the average price and credit amount by vehicle type.

### A. Projection of qualifying vehicles

To project the number of qualifying vehicles, this report relies on historical sales data for EVs and PHEVs through June 2018<sup>3</sup> and then projects sales quarterly through 2028 using US Department of Energy projections. Sales of qualifying vehicles are projected through 2028 based on the reference case of the US Energy Information Administration's (EIA) Annual Energy Outlook 2018 (AEO).<sup>4</sup>

Sales of qualifying vehicles projected over the 2019-28 period are displayed in Table 1. The table displays both annual and cumulative sales. This report estimates that in 2019 approximately 288,000 qualifying vehicles will be sold. Of these 288,000 vehicles, it is estimated that 176,000 (61%) will be EVs and 112,000 (39%) will be PHEVs. Both the number and composition of qualifying vehicles is projected to change over time. This analysis projects that in 2028 nearly 1.1 million qualifying vehicles will be sold and that EV's share of the market will rise from 61% in 2019 to 85% in 2028.

**Table 1. Annual and cumulative sales of plug-in electric drive vehicles, by type (thousands)**

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>Vehicle sales (annual)</b>	<b>288</b>	<b>403</b>	<b>503</b>	<b>597</b>	<b>687</b>	<b>757</b>	<b>883</b>	<b>943</b>	<b>1,001</b>	<b>1,067</b>
Electric vehicles	176	280	374	464	547	609	734	790	843	904
Plug-in hybrid electric vehicles	112	123	129	133	140	147	149	153	158	163
<b>Vehicle sales (cumulative)*</b>	<b>1,303</b>	<b>1,707</b>	<b>2,209</b>	<b>2,806</b>	<b>3,493</b>	<b>4,250</b>	<b>5,133</b>	<b>6,077</b>	<b>7,078</b>	<b>8,145</b>
Electric vehicles	705	986	1,359	1,823	2,370	2,980	3,714	4,504	5,347	6,251
Plug-in hybrid electric vehicles	598	721	850	983	1,123	1,270	1,419	1,573	1,730	1,894

\*Cumulative sales after December 31, 2009.

Note: Estimates are for calendar years. Figures may not sum due to rounding.

Source: EY analysis.

Table 2 shows the projection of cumulative sales of qualifying vehicles by manufacturer. This report assumes that manufacturers maintain their 2018 market share of: (1) EVs, and (2) PHEVs through 2028. The 2018 market share is computed with 2018 data through June 2018, the most recent data at the time of the analysis. This approach is used because of the significant uncertainty over how the composition of manufacturers in the qualifying vehicle market will change over time.

Table 2 highlights cumulative qualifying vehicle sales over 200,000, 500,000, and 600,000 per manufacturer. Each cumulative sum represents the sales of all qualified vehicles by an individual manufacturer. By the end of 2019, two manufacturers are projected to reach the 200,000-vehicle cap and by the end of 2028, it is projected that eight manufacturers will reach the 200,000-vehicle

cap. The first manufacturer is estimated to reach 500,000 in cumulative sales of qualifying vehicles by the end of 2020. By the end of 2028, four manufacturers are projected to reach 500,000 cumulative qualifying vehicle sales. Similarly, the first manufacturer is estimated to reach 600,000 in cumulative sales of qualifying vehicles by the end of 2021. By the end of 2028, four manufacturers are projected to reach 600,000 cumulative qualifying vehicle sales.

**Table 2. Projection of cumulative sales of plug-in electric drive vehicles, by manufacturer (thousands)**

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>Vehicle sales (Cumulative)*</b>	<b>1,303</b>	<b>1,707</b>	<b>2,209</b>	<b>2,806</b>	<b>3,493</b>	<b>4,250</b>	<b>5,133</b>	<b>6,077</b>	<b>7,078</b>	<b>8,145</b>
American Honda Motor Co., Inc.	56	72	89	106	125	144	164	184	205	227
Audi of America, LLC	12	15	18	21	24	28	31	35	38	42
BMW of North America	110	144	185	230	282	337	400	467	536	611
FCA North America Holdings, LLC	31	44	61	82	108	136	170	206	245	287
Ford Motor Company	125	139	153	168	185	203	222	242	262	284
General Motors, LLC	237	289	353	428	514	609	720	837	962	1,095
Hyundai	12	17	23	30	38	46	56	66	76	88
Kia Motors America, Inc.	18	26	35	45	56	69	83	98	113	130
Mercedes-Benz USA, LLC	24	30	39	48	58	69	82	95	109	124
Mitsubishi Motors North America, Inc.	10	14	19	24	29	34	40	45	51	57
Nissan North America	146	175	213	260	316	378	453	533	619	712
Porsche Cars North America, Inc.	13	17	21	25	29	33	38	42	47	52
Tesla, Inc.	355	531	765	1,057	1,400	1,782	2,243	2,739	3,268	3,836
Toyota Motor Sales, U.S.A., Inc.	126	158	192	227	264	302	341	381	423	466
Volkswagen Group of America	16	19	23	29	35	43	51	61	71	82
Volvo Cars of North America, LLC	13	17	21	26	30	36	41	46	51	57

Cumulative sales of at least 200k
  Cumulative sales of at least 500k
  Cumulative sales of at least 600k

\*Cumulative sales after December 31, 2009.

Note: Analysis assumes that each manufacturer retains its 2018 market share of: (1) EVs and (2) PHEVs through 2028. 2018 market share is computed with 2018 data through June 2018, which was the most recent data at the time of the analysis. Figures may not sum due to rounding.

Source: EY analysis.

## B. Average price and credit amount, by vehicle type and manufacturer

Table 3 displays the estimated average price and credit amount by manufacturer for EVs and PHEVs assumed for this analysis. The price of each qualifying vehicle model sold by a manufacturer was collected for each manufacturer and then aggregated to total EVs and PHEVs sold by a manufacturer (i.e., weighted by model sales). This analysis assumes that the average price per manufacturer for EVs and PHEVs is constant through 2028.

The credit amount for each qualifying model is reported by the Internal Revenue Service and, for this analysis, is weighted by sales.<sup>5</sup> Based on their battery capacity, all manufacturers' EVs qualify for the maximum \$7,500 credit. The average credit for PHEVs across all manufacturers, however, is \$5,366 because of variation in battery capacity. Based on the credit and price for all manufacturers as shown in Table 3, the electric vehicle tax credit is estimated to reduce the price of both EVs and PHEVs by an average of approximately 14% (\$7,500 / \$52,006 and \$5,366 / \$37,699).

**Table 3. Average price and credit amount, by vehicle type and manufacturer in 2018**

	Electric vehicles		Plug-in hybrid electric vehicles	
	Price	Credit	Price	Credit
<b>All manufacturers</b>	<b>\$52,006</b>	<b>\$7,500</b>	<b>\$37,699</b>	<b>\$5,366</b>
American Honda Motor Co., Inc.	--	--	30,963	7,500
Audi of America, LLC	--	--	39,500	4,502
BMW of North America	44,450	7,500	57,395	4,507
FCA North America Holdings, LLC	37,529	7,500	--	--
Ford Motor Company	29,120	7,500	30,559	4,007
General Motors, LLC	37,474	7,500	34,257	7,500
Hyundai	29,500	7,500	27,538	4,664
Kia Motors America, Inc.	33,950	7,500	30,450	4,674
Mercedes-Benz USA, LLC	19,348	7,500	53,995	3,995
Mitsubishi Motors North America, Inc.	--	--	34,595	5,836
Nissan North America	29,990	7,500	--	--
Porsche Cars North America, Inc.	--	--	90,133	5,033
Tesla, Inc.	61,953	7,500	--	--
Toyota Motor Sales, U.S.A., Inc.	--	--	27,300	4,502
Volkswagen Group of America	30,495	7,500	--	--
Volvo Cars of North America, LLC	--	--	43,272	5,002

-- This manufacturer did not sell this vehicle type in 2018.

Note: This analysis computes the weighted average price and credit amount for electric vehicles and plug-in hybrid electric vehicles based on a weighted average of the vehicles sold in 2018 through June. June 2018 data were the most recent available at the time of this analysis.

Source: EY analysis.

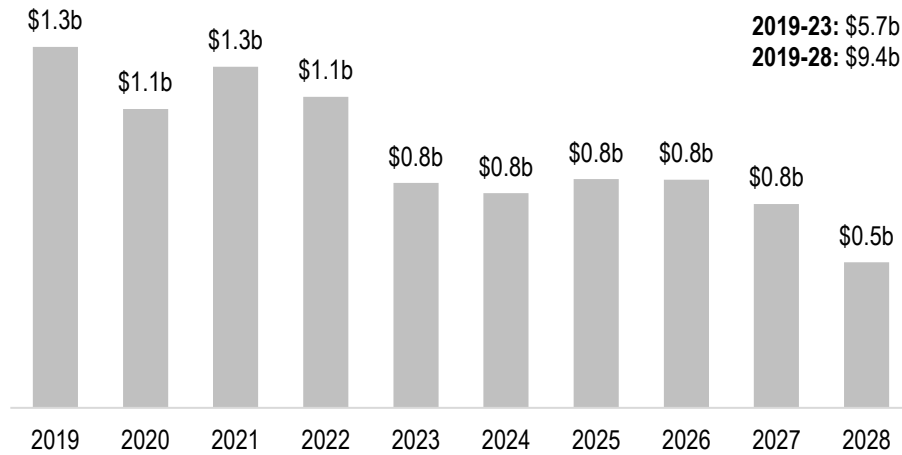
### C. Projected current-law baseline for claimed credits

Figure 1 shows the projected current-law baseline against which the potential changes to the electric vehicle tax credit are estimated. This baseline incorporates total sales (Table 1), and the average credit amount of EVs and PHEVs (Table 3). Credit-qualifying sales are reduced to account for the phase-out of the credit once a manufacturer reaches cumulative sales of 200,000 qualifying vehicles (Table 2).

Two aspects of the current-law baseline are particularly noteworthy: (1) annual qualifying vehicle sales increase over time, which increases total credits claimed, and (2) some manufacturers reach the 200,000 vehicle cap, resulting in the credit being phased-out for those manufacturers, which reduces the total revenue cost of the credit. For example, the number of total credits claimed falls by about \$200 million from 2019 (\$1.3b) to 2020 (\$1.1b). The year-over-year reduction in the current-law baseline occurs despite an overall increase in qualifying vehicle sales from 2019 (288,000) to 2020 (403,000), as shown in Table 1. The reason for the net reduction is that two manufacturers reached the 200,000 vehicle cap, which triggers the phase-out of their credit, as seen in Table 2. Between 2019 and 2020, the reduction in credits from the phase-out more than offsets the increase in the number of credits claimed due to a higher level of total sales (assuming each manufacturer's the market share remains fixed). Between 2020 and 2021, the amount of credits claimed is estimated to increase (from \$1.1b in 2020 to \$1.3b in 2021) because the increase in sales dominates over the per manufacturer cap.<sup>6</sup> The more general trend over the

budget window is for the amount of credits claimed to gradually decline as the per manufacturer vehicle cap becomes more binding across manufacturers.

**Figure 1. Current-law baseline: Estimated total credits claimed**



Note: Estimates are for calendar year. Figures may not sum due to rounding.  
Source: EY analysis.

### III. Federal revenue effect of potential changes to the electric vehicle tax credit

The federal revenue effect of each of the three proposals modeled in this report is estimated in three steps. First, the change in credits claimed is estimated assuming no changes in behavior (i.e., the static revenue effect). Specifically, this is the difference between the credits claimed under each potential change to the electric vehicle tax credit relative to the current-law baseline, assuming the sales of qualifying vehicles remain unchanged. Second, the change in credits claimed due to the change in sales of qualifying vehicles is estimated (i.e., the inducement effect or behavioral response). Sales are estimated to increase in response to an expansion of the credit and the commensurate reduction in the after-tax cost or price of qualifying vehicles.<sup>7</sup> Third, the liability effect – the sum of the first two steps – is adjusted from a calendar year to a fiscal year basis.<sup>8</sup>

This report relies on economic research analyzing the responsiveness of vehicle sales to its after-tax price to estimate the behavioral response associated with changes to the credit.<sup>9</sup> This analysis assumes the same responsiveness of consumers to changes in automobile prices found in the economic literature, which is a price elasticity of demand of -3, meaning a 1% decrease in the after-tax price of qualifying electric vehicles results in a 3% increase in sales of qualifying vehicles.<sup>10</sup> This price elasticity is applied to the percentage change in the after-tax vehicle price (computed from Table 3) to estimate the change in purchased vehicles under each proposal analyzed.

Table 4 displays the federal revenue estimates for:

1. Increasing the per manufacturer vehicle cap from 200,000 to 500,000 qualifying vehicles
2. Removing the per manufacturer vehicle cap
3. Increasing the per manufacturer vehicle cap from 200,000 to 600,000 qualifying vehicles, reducing the maximum credit from \$7,500 to \$7,000 for these additional 400,000 qualifying vehicles, and shortening the phase out (100% of credit in quarter 600,000 sales is reached and following quarter, 50% in subsequent quarter, and 0% thereafter)<sup>11</sup>

Increasing the vehicle cap to 500,000 qualifying vehicles is estimated to cost \$15.2 billion over the 10-year budget window, while removing the cap would cost \$46.4 billion over the 10-year budget window. The third proposal, which can be found in the Driving America Forward Act, would cost \$15.7 billion over the 10-year budget window.

Table 4 also displays an estimate of the number of additional qualifying vehicles purchased, as well as the revenue cost per additional vehicle, resulting from these two potential changes to the electric vehicle tax credit. Proposals that increase or eliminate the per manufacturer vehicle cap would increase vehicle sales by lowering the after-tax price of qualifying vehicles. Increased vehicle sales increase claimed credits and the revenue cost of a proposal.

The revenue cost per additional vehicle provides a measure of the credit's efficiency for expanding the electric vehicle market. As displayed in Table 4, the federal revenue cost per additional vehicle purchased under the proposed changes to the credit – depending on the year and whether the

proposal would increase or remove the per manufacturer vehicle cap – ranges from \$22,400 to \$34,400. This metric indicates the cost to the taxpayer for each additional electric vehicle estimated to be purchased under an expansion of the credit.

**Table 4. Federal revenue estimate: Increase or remove per manufacturer vehicle cap (\$b)**

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-23	2019-28
<b>Cap at 500,000 vehicles</b>												
Change in credits without behavior (CY)	\$0.6	\$1.7	\$1.5	\$1.0	\$1.4	\$1.4	\$1.2	\$1.3	\$1.1	\$0.8	\$6.2	\$12.0
Change in credits from behavior (CY)	\$0.2	\$0.5	\$0.4	\$0.4	\$0.6	\$0.5	\$0.5	\$0.5	\$0.3	\$0.3	\$2.0	\$4.1
Liability effect (CY)	-\$0.8	-\$2.1	-\$1.8	-\$1.4	-\$2.0	-\$1.9	-\$1.7	-\$1.8	-\$1.4	-\$1.1	-\$8.1	-\$16.0
<b>Federal revenue estimate (FY)</b>	<b>-\$0.2</b>	<b>-\$1.1</b>	<b>-\$2.0</b>	<b>-\$1.7</b>	<b>-\$1.5</b>	<b>-\$2.0</b>	<b>-\$1.8</b>	<b>-\$1.7</b>	<b>-\$1.7</b>	<b>-\$1.3</b>	<b>-\$6.6</b>	<b>-\$15.2</b>
<b>Remove 200,000 vehicle cap</b>												
Change in credits without behavior (CY)	\$0.6	\$1.7	\$2.2	\$3.0	\$4.0	\$4.6	\$5.5	\$5.9	\$6.4	\$7.1	\$11.6	\$41.0
Change in credits from behavior (CY)	\$0.2	\$0.5	\$0.6	\$0.9	\$1.2	\$1.4	\$1.6	\$1.8	\$2.0	\$2.2	\$3.4	\$12.3
Liability effect (CY)	-\$0.8	-\$2.1	-\$2.9	-\$4.0	-\$5.2	-\$5.9	-\$7.1	-\$7.7	-\$8.4	-\$9.3	-\$14.9	-\$53.4
<b>Federal revenue estimate (FY)</b>	<b>-\$0.2</b>	<b>-\$1.1</b>	<b>-\$2.3</b>	<b>-\$3.1</b>	<b>-\$4.3</b>	<b>-\$5.4</b>	<b>-\$6.2</b>	<b>-\$7.3</b>	<b>-\$7.9</b>	<b>-\$8.6</b>	<b>-\$11.0</b>	<b>-\$46.4</b>
<b>Cap at 600,000 vehicles; modify credit &amp; phase out</b>												
Change in credits without behavior (CY)	\$0.3	\$1.5	\$1.9	\$0.8	\$1.3	\$1.6	\$1.4	\$1.2	\$1.4	\$1.3	\$5.9	\$12.7
Change in credits from behavior (CY)	\$0.1	\$0.4	\$0.5	\$0.3	\$0.5	\$0.6	\$0.5	\$0.4	\$0.5	\$0.4	\$1.8	\$4.3
Liability effect (CY)	-\$0.4	-\$1.9	-\$2.3	-\$1.1	-\$1.8	-\$2.2	-\$1.9	-\$1.6	-\$1.9	-\$1.8	-\$7.7	-\$17.0
<b>Federal revenue estimate (FY)</b>	<b>-\$0.1</b>	<b>-\$0.8</b>	<b>-\$2.0</b>	<b>-\$2.0</b>	<b>-\$1.3</b>	<b>-\$1.9</b>	<b>-\$2.1</b>	<b>-\$1.8</b>	<b>-\$1.7</b>	<b>-\$1.9</b>	<b>-\$6.3</b>	<b>-\$15.7</b>
<b>Addendum: Estimated change in qualifying vehicles and federal revenue cost per additional vehicle</b>												
<b>Cap at 500,000 vehicles</b>												
Change in qualifying vehicles (thousands)	22	62	58	56	84	80	73	78	61	50	282	624
Federal revenue cost per additional vehicle (\$)	\$34,400	\$34,400	\$31,500	\$24,600	\$24,200	\$23,600	\$23,400	\$23,400	\$22,500	\$22,400	\$28,800	\$25,700
<b>Remove 200,000 vehicle cap</b>												
Change in qualifying vehicles (thousands)	22	62	83	122	167	190	227	246	269	302	456	1,691
Federal revenue cost per additional vehicle (\$)	\$34,400	\$34,400	\$34,400	\$32,300	\$31,300	\$31,300	\$31,300	\$31,300	\$31,100	\$30,800	\$32,700	\$31,600
<b>Cap at 600,000 vehicles; modify credit &amp; phase out</b>												
Change in qualifying vehicles (thousands)	13	57	70	46	78	90	80	72	82	75	265	664
Federal revenue cost per additional vehicle (\$)	\$33,000	\$33,900	\$33,400	\$23,500	\$23,700	\$24,000	\$23,300	\$23,000	\$23,100	\$23,500	\$28,900	\$25,600

\*Less than \$0.05b in magnitude.

CY: Calendar year; FY: Fiscal year

Note: Analysis assumes a price elasticity of demand of -3.0 for qualifying vehicles. Figures may not sum due to rounding.

Source: EY analysis.



## IV. Caveats and limitations

Any modeling effort is only an approximate depiction of the economic forces it seeks to represent, and the economic model developed for this analysis is no exception. Although various limitations and caveats might be listed, several are particularly noteworthy:

- ▶ **There is significant uncertainty in projecting sales of EVs and PHEVs.** Sales of qualifying vehicles are projected in this report based primarily on the reference case of the EIA's AEO. Actual sales of qualifying vehicles may differ from this projection.
- ▶ **There is significant uncertainty in projecting the price and credit amount of qualifying vehicles.** The price of and credit amount for EVs and PHEVs in 2018 was aggregated by manufacturer and then assumed to be constant through 2028. Actual price and credit amounts may differ from this projection.
- ▶ **There is significant uncertainty in projecting the market share of manufacturers.** This report assumes that each manufacturer retains its 2018 market share of EVs and PHEVs through 2028. Market shares may differ from this projection.
- ▶ **Not all available credits are likely to be used.** This report assumes taxpayers will use all available credits. It is possible that some taxpayers, particularly those with lower incomes, will not have sufficient tax liability to fully use their available electric vehicle tax credit.
- ▶ **The responsiveness of sales of qualifying vehicles to their after-tax cost is uncertain.** A review of the economic literature suggests the price elasticity of demand for vehicles is in the range of approximately -2 to -4. A central estimate of -3 is used in this analysis. The actual price elasticity of demand for qualifying vehicles may differ from this assumption.

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## Endnotes

<sup>1</sup> The credit originates from interest in promoting energy independence and the development of electric vehicles more than a decade ago. The Energy Independence and Security Act of 2007 included incentives for the development of plug-in vehicles. The Energy Improvement and Extension Act of 2008 included all types of plug-in electric vehicles (both battery only and plug hybrid electrics) that met certain battery size criteria and created the first non-refundable tax credit for at least the first 250,000 plug-in vehicles sold. The American Recovery and Reinvestment Act of 2009 set the quantity at which the credit would begin to phase out at 200,000 per manufacturer.

<sup>2</sup> Each of these vehicle types is at least partially powered by electricity. EVs are fully powered by electricity and do not contain an internal combustion engine. EVs are recharged by being plugged into the electric grid (e.g., at home or at a public charging station). PHEVs contain both an electric drive and an internal combustion engine. PHEVs are designed such that the internal combustion engine is used when the battery is low or additional power is needed. Like EVs, PHEVs are recharged by being plugged into the electric grid. HEVs are similar to PHEVs, but they rely primarily on their internal combustion engine for energy. In particular, the battery of a HEV is recharged by capturing the energy generated in braking instead of being charged by being plugged into the electric grid.

<sup>3</sup> Historical sales data for 2010 through June 2018 were collected directly from manufacturers by Baum and Associates. The US Department of Energy and Argonne National Lab have also used these data – which are sorted by model of qualifying vehicle. This report uses these data to calculate cumulative sales of qualifying vehicles from the beginning of 2010 through June 2018.

<sup>4</sup> Sales of EVs are assumed to be equal to the sales projected by the AEO. Sales of PHEVs are projected by applying the growth rate of PHEVs and HEVs in the AEO. The AEO is not sufficiently detailed to separately forecast PHEVs and HEVs.

The EIA develops the AEO using the National Energy Modeling System (NEMS), a detailed energy model capturing the interactions between economic changes, technological changes, energy supply, and energy demand. The reference case of the AEO relies on the views of prominent forecasters to project economic, demographic, and technological variables and generally assumes that current law is unchanged. See US Energy Information Administration, *Annual Energy Outlook 2018*, February 6, 2018.

<sup>5</sup> See Qualified Plug-In Electric Drive Motor Vehicles (IRC 30D), <https://www.irs.gov/businesses/irc-30d-new-qualified-plug-in-electric-drive-motor-vehicle-credit>

<sup>6</sup> The model does not allow for consumers to switch brands in response to differential availability of the incentives as some models hit the cap and others not, as manufacturers' market shares are fixed throughout the budget window. This may happen in actual markets.

<sup>7</sup> Conversely, consumers would purchase fewer qualifying vehicles if the credit were reduced or eliminated due to the corresponding increase in the after-tax price of qualifying vehicles. It is customary for these types of inducement effects to be incorporated into conventional revenue estimates of tax policy changes by the Joint Committee on Taxation.

Consistent with recent research on electric vehicle tax credits, this analysis assumes that any changes to the credit are passed forward to consumers through changes in after-tax prices. See, Erich Muehlegger and David Rapson, (2018), "Subsidizing Mass Adoption of Electric Vehicles: Quasi-Experimental Evidence from California," NBER Working Paper No. 25359.

<sup>8</sup> This adjustment is intended to reflect the cash flow impact following the federal government's October 1<sup>st</sup> through September 31<sup>st</sup> fiscal year.

<sup>9</sup> A review of the literature suggests the price elasticity of demand for vehicles is in the range of approximately -2 to -4. A central estimate of -3 is used in this analysis. See Pinelopi Koujianou Goldberg, (1995), "Product Differentiation and Oligopoly in International Markets: The Case of the U.S. Automobile Industry," *Econometrica* 63(4): 891-951; Steven Berry, James Levinsohn, and Ariel Pakes, (1995), "Automobile Prices in Market Equilibrium," *Econometrica* 63(4): 841-890; Patrick McCarthy, (1996), "Market Price and Income Elasticities of New Vehicle Demands," *The Review of Economics and Statistics* 78(3): 543-547; Pinelopi Goldberg and Frank Verboven, (2001), "The Evolution of Price Dispersion in the European Car Market," *Review of Economic Studies* 68(4): 811-848; and Kenneth Train and Clifford Winston, (2007), "Vehicle Choice Behavior and the Declining Market Share of U.S. Automakers," *International Economic Review* 48(4): 1469-1496. Similar results have been found when examining the

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price elasticity of demand specifically for EVs. See, for example, Erich Muehlegger and David Rapson, (2018), "Subsidizing Mass Adoption of Electric Vehicles: Quasi-Experimental Evidence from California," NBER Working Paper No. 25359.

<sup>10</sup> A review of the literature suggests the price elasticity of demand for vehicles is in the range of approximately -2 to -4. A central estimate of -3 is used in this analysis. See Pinelopi Koujianou Goldberg, (1995), "Product Differentiation and Oligopoly in International Markets: The Case of the U.S. Automobile Industry," *Econometrica* 63(4): 891-951; Steven Berry, James Levinsohn, and Ariel Pakes, (1995), "Automobile Prices in Market Equilibrium," *Econometrica* 63(4): 841-890; Patrick McCarthy, (1996), "Market Price and Income Elasticities of New Vehicle Demands," *The Review of Economics and Statistics* 78(3): 543-547; Pinelopi Goldberg and Frank Verboven, (2001), "The Evolution of Price Dispersion in the European Car Market," *Review of Economic Studies* 68(4): 811-848; and Kenneth Train and Clifford Winston, (2007), "Vehicle Choice Behavior and the Declining Market Share of U.S. Automakers," *International Economic Review* 48(4): 1469-1496. Similar results have been found when examining the price elasticity of demand specifically for EVs. See, for example, Erich Muehlegger and David Rapson, (2018), "Subsidizing Mass Adoption of Electric Vehicles: Quasi-Experimental Evidence from California," NBER Working Paper No. 25359.

<sup>11</sup> This is the change to the electric vehicle tax credit proposed in the Driving America Forward Act. Section 3 of the Driving America Forward Act includes an extension of the credit for new qualified fuel cell motor vehicles. Section 3 is not included in this estimate. The Driving America Forward Act allows a maximum electric vehicle tax credit of up to \$7,500 for a manufacturer's first 200,000 vehicles and a maximum credit of \$7,000 thereafter. Once a manufacturer reaches 600,000 qualifying vehicles sales the credit phases out for that manufacturer. In particular, the second quarter following the quarter in which the manufacturer reaches 600,000 sales of qualifying vehicles the credit amount is reduced 50%. The following quarter the credit amount is reduced to zero. Analysis assumes the Driving America Forward Act is effective July 1, 2019.

June 14, 2019

The Honorable John Thune  
511 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow  
731 Hart Senate Office Building  
Washington, DC 20510

RE: The Section 30(D) Electric Vehicle Tax Credit

Dear Senator Thune and Senator Stabenow:

We urge you to not expand or extend the federal tax credit for electric vehicles (EV) as part of tax extenders legislation or any other bill during this Congress.

Expanding the federal tax credit forces middle class and lower income Americans to subsidize the purchase of EVs by wealthy buyers. The top 20 percent of income earners receive 90 percent of all federal vehicle tax credits. A recent Morgan State University report found that 80 percent of all EV owners earn more than \$100,000 per year, with 40 percent earning more than \$200,000 per year.

Furthermore, transportation infrastructure projects such as roads and bridges are financed from gasoline and fuel taxes. EV owners are essentially exempted from paying their fair share for infrastructure projects despite all vehicles causing wear-and-tear on our roads. This tax policy is regressive and unfair to the vast majority of taxpayers.

A May 2019 study by Ernst and Young examined the cost to taxpayers of expanding the federal EV tax credit and found that eliminating the current 200,000 per-manufacturer vehicle cap would cost \$11 billion over the first five years (2019-23) and \$46.4 billion over the 10-year budget window (2019-28).

The study also estimated the cost of the *Driving America Forward Act* (S.1094), which would increase the cap from 200,000 to 600,000 vehicles, would be \$6.3 billion over the first five years (2019-23) and \$15.7 billion over the 10-year budget window (2019-28).

While the government has at times provided incentives to support pre-competitive research and development of nascent technologies, the EV market has evolved beyond this stage as automobile manufacturers continue to invest billions of dollars in EV technology. U.S. sales of EVs have increased more than eleven-fold between 2011 and 2018 with a 74.5 percent annual growth last year. Further subsidies are not needed or warranted.

Tax policy should maintain an equitable marketplace for all technologies and all consumers. We urge you to reject expanded electric vehicle subsidies that favor a small group of people.

Sincerely,



CC: Senate Finance Committee Chairman Chuck Grassley  
Senate Finance Committee Ranking Member Ron Wyden  
Senator Pat Roberts  
Senator Thomas Carper

Senator John Cornyn  
Senator Sheldon Whitehouse  
Senator Bill Cassidy  
Senator Maggie Hassan

**About AFPM**

The American Fuel & Petrochemical Manufacturers (“AFPM”) is a national trade association whose members comprise virtually all U.S. refining and petrochemical manufacturing capacity. For more information, please contact Derrick Morgan, Senior Vice President, Federal and Regulatory Affairs at DMorgan@afpm.org, or 202-844-5473.

**About API**

The American Petroleum Institute is the only national trade association representing all facets of the oil and natural gas industry, which supports 10.3 million U.S. jobs and nearly 8 percent of the U.S. economy. API’s more than 625 members include large integrated companies, as well as exploration and production, refining, marketing, pipeline, and marine businesses, and service and supply firms. They provide most of the nation’s energy and are backed by a growing grassroots movement of more than 45 million Americans. For more information, please contact Frank Macchiarola, Vice President, Downstream at MacchiarolaF@api.org or 202-682-8167.

**About PMAA**

PMAA is a federation of 47 state and regional trade associations representing 8,000 independent petroleum marketers nationwide. PMAA companies own 60,000 retail fuel outlets such as gas stations, convenience stores and truck stops. Additionally, these companies supply motor fuels to 40,000 independently owned retail outlets and heating oil to over eight million homes and businesses. PMAA members are engaged in the transport, storage and sale of petroleum products including gasoline, diesel fuels, kerosene, jet fuel, aviation gasoline, propane, racing fuel, lubricating oils, and home heating oil at both the wholesale and retail level. PMAA members are the primary conduit for bringing petroleum products from the terminal rack to retail locations and represent a vital and indispensable link in the nation’s petroleum distribution chain. For more information, please contact Rob Underwood, President, at 703-351-8000 or runderwood@pmaa.org.



June 13, 2019

The Honorable Chuck Grassley  
Chairman  
Senate Committee on Finance  
219 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Ron Wyden  
Ranking Member  
Senate Committee on Finance  
219 Dirksen Senate Office Building  
Washington, D.C. 20510

Dear Chairman Grassley and Ranking Member Wyden:

On behalf of the Petroleum Marketers Association of America (PMAA), we urge Congress to pass a multi-year, retroactive extension of the \$1 per gallon biodiesel blenders tax credit along with a multi-year prospective extension of the Oil Spill Trust Fund financing rate (OSLT).

The Petroleum Marketers Association of America represents petroleum marketers engaged in the transport, storage and sale of petroleum products including gasoline, diesel fuels, kerosene, jet fuel, aviation gasoline, propane, racing fuel, lubricating oils, and home heating oil and other petroleum products. PMAA members are the primary conduit for bringing petroleum products from the terminal rack to retail locations and represent a vital, indispensable link in the nation's petroleum distribution chain. PMAA companies also own 60,000 retail fuel outlets such as gas stations, convenience stores and truck stops. Additionally, these companies supply heating oil to over eight million homes and businesses. Approximately 80 percent of the motor fuels (gasoline and diesel) and heating oil sold in the U.S. are sold by petroleum marketers. There are several thousand petroleum marketers operating in the U.S. Roughly 90 percent of these marketers are members of PMAA's federated State and Regional trade associations and are represented by PMAA at the Federal level.

*Biodiesel Blender's Tax Credit*

We urge you to pass a tax extenders package which includes a multi-year, retroactive extension of the \$1 per gallon biodiesel blender's tax credit. Allowing the biodiesel tax credit to lapse has created market uncertainty, making it difficult for petroleum marketers to plan and maximize their use of biodiesel. The biodiesel blenders' tax credit has worked successfully to build a robust biodiesel and renewable diesel industry in the United States. As a result, the U.S. biodiesel and renewable diesel market has grown from roughly 100 million gallons in 2005 to nearly 2.6 billion gallons in 2017. The tax credit is an important demand stimulus which encourages investment in U.S. distribution infrastructure and supports high-paying jobs throughout the country, all while incentivizing consumption of fuels that reduce CO2 emissions. The biodiesel tax credit also lowers the price that petroleum marketers pay for fuel which is passed onto motorists and heating fuel customers.

*Oil Spill Trust Fund Financing Rate (OSLT)*

Last year, Congress reinstated the OSLT which had expired on December 31, 2017 in the Bipartisan Budget Act of 2018 (Public Law 115-123) and made it effective March 1, 2018 through December 31, 2018. Therefore, as you consider a tax extenders package soon, we again urge Congress to reinstate the

oil spill tax and apply in a prospective manner from the start of the first calendar month after the date of enactment of the law. This will allow the fuel supply chain enough time and notice to properly adjust their systems to begin accounting for the tax.

Thank you for considering our concerns. If we can provide further information, please contact us at 703-351-8000.

Sincerely,

A handwritten signature in black ink, appearing to read "Rob Underwood". The signature is fluid and cursive, with the first name "Rob" being more prominent and the last name "Underwood" written in a continuous, flowing script.

Rob Underwood  
PMAA President

June 14, 2019

The Honorable Chuck Grassley  
Chairman, Committee on Finance  
U.S. Senate  
219 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Ron Wyden  
Ranking Member, Committee on Finance  
U.S. Senate  
221 Dirksen Senate Office Building  
Washington, DC 20515

Dear Chairman Grassley, Ranking Member Wyden and Energy Taskforce Members:

On behalf of our millions of members and supporters, we urge you to extend and modify tax credits that move our economy toward a clean energy future and help reduce emissions that contribute to climate change. The latest science tells us that we must aggressively bend the emissions curve downward across all sectors of the economy over the next decade in order to avoid the worst impacts of global warming. The tax code is one of the most important tools we have at our disposal to help speed our transition to a clean energy economy.

Federal tax credits for clean transportation, clean energy, and energy efficiency have resulted in substantial cumulative reductions in CO<sub>2</sub> and other pollutants that undermine public health and contribute to climate change. In fact, these tax credits have been some of our nation's most effective federal policies at fighting climate change, but many have expired and some of these tax credits are not being maximized due to outdated structures that could be easily modified. We cannot afford to go backwards.

Electrifying our transportation sector, modernizing our electricity grid, deploying more clean energy, and making our buildings and appliances more energy efficient are just some of the significant actions we need to pursue in the near-term. We ask Congress to prioritize investment in these areas in any legislation that modifies the tax code.

These actions must go hand in hand with efforts to ensure that American leadership in clean energy technology drives domestic manufacturing and the creation and maintenance of good American jobs in the next generation of technology. We want to ensure that all workers and communities share the benefit of the coming transformation in clean energy technology.

**Clean Transportation:**

The transportation sector is now the largest source of carbon emissions and arguably the most difficult sector to decarbonize. A transition to zero emissions vehicles is needed. To continue to grow the



number of zero emissions vehicles, Congress needs to lift the manufacturer cap on tax credits for electric vehicles and extend credits for alternative vehicle fueling infrastructure. Rapidly electrifying our transportation systems, while simultaneously improving efficiency in internal combustion vehicles, is a prudent path to meet our climate goals, reduce local air pollution, and ensure American leadership in the growing global market for clean vehicle technologies.

- We urge Congress to extend Sec. 30B for alternative motor vehicles, Sec. 30C for alternative fuel vehicle refueling property, and modify Sec. 30D for qualified plug-in electric motor vehicles to ensure the tax credit remains available to consumers

#### **Grid Modernization:**

We ask that energy storage be considered an eligible technology for the Sec. 48 and Sec. 25D 30% investment tax credits (ITC). And as a nascent technology, we ask that you extend a stand-alone ITC for energy storage. Currently, energy storage technologies are only eligible for the investment tax credit when installed as part of solar energy projects, but this unnecessarily limits wider deployment of this critical nascent technology. Energy storage can be paired with a variety of clean sources of energy and is essential for integrating clean, intermittent resources onto the electricity grid. Storage also helps increase the reliability and resilience of the electricity grid, as well as helping to power rural and remote communities without grid access. Clarifying energy storage's full eligibility for the ITC is essential for a cleaner, more resilient electricity grid; we cannot get to high penetrations of clean energy without wide-scale adoption of energy storage technologies.

- We ask that Congress modify Sec. 48(a)(3) and Sec. 25D to include energy storage equipment that receives, stores, and delivers energy using new and existing technologies; and extend an ITC for energy storage.

#### **Clean Energy:**

We ask Congress to modify Sec. 48 to acknowledge the difference between onshore and offshore wind, which are on vastly different deployment and cost curves. Decoupling offshore and onshore wind will allow the credit for offshore wind to be fully utilized and unlock 4.2 terawatts in potential pollution-cutting, domestic, reliable energy. While onshore wind has enjoyed federal tax support for many years, offshore wind is a nascent technology, still gaining a foothold in U.S. electricity markets, and poised to grow dramatically over the next decade. As such, we also ask Congress to extend a stand-alone ITC for offshore wind.

- We urge Congress to modify Sec. 48 for qualifying advanced energy projects to acknowledge the difference between onshore and offshore wind; and extend an ITC for offshore wind.

#### **Energy Efficiency:**

Efficiency incentives have the potential to not only significantly reduce energy costs for consumers across the country but to significantly drive down carbon emissions and stimulate job creation and economic activity. Congress should extend the expired efficiency tax credits and update them to reflect current market conditions. As written, the expired credits reference older, outdated building codes or

efficiency thresholds, and offer dollar amounts that don't reflect the current market prices for building technologies and high-efficiency equipment.

- We encourage Congress to modify and extend the 25C incentive for homeowner efficiency improvements;
- Modify and extend Sec. 179D for energy efficient commercial and multifamily buildings;
- Modify and extend Sec. 45L for energy efficient new homes

Congress should also consider longer term incentives for renewable energy investment and production in response to the failure of the federal government to finalize greenhouse gas emission standards, like the Clean Power Plan. Clean energy technologies continue to compete on an unlevel playing field because most states do not price carbon into their markets. The federal PTC for wind and ITC for solar serve as a powerful equalizer. The tax code should be working for the benefit of the climate as opposed to against it.

The last 5-year extension was estimated to catalyze an additional 29 gigawatts of wind and solar capacity through 2020 and will help curb CO<sub>2</sub> emissions by an additional 31 percent cumulatively (equivalent to 854 million tons) through 2030. These tax credits helped make wind and solar the cheapest new forms of energy in many parts of the country today and will continue to drive deployment. But a lapse in tax credit support, without other federal market signals, will slow clean energy development and hurt the clean energy momentum we are seeing in the states at a time when the science is telling us to accelerate our use of electricity from wind and solar over the next decade.

Federal energy tax policy has been an important tool in promoting clean energy and reducing our nation's dependence on the energy sources of the past. These efforts, along with others that ensure strong labor standards and incentives for domestic content, can help ensure American leadership in clean energy technology and drive domestic manufacturing and the creation and maintenance of good American jobs in the next generation of technology. Again, we ask Congress to prioritize investments in clean transportation, grid modernization, clean energy and energy efficiency in any legislation that modifies the tax code.

Sincerely,

Clean Water Action

Environment America

Environmental Defense Fund

League of Conservation Voters

Natural Resources Defense Council

Public Citizen

Sierra Club

Union of Concerned Scientists

U.S. PIRG

World Wildlife Fund



RE: Tax Extenders

Changes to IRC Sec. 30

Electric Motorcycle Consumer Tax Credits

1. Add 3 wheeled back in
2. Go forward in time with any extension, no retroactivity.

Dear Energy Task Force Committee Members,

Greetings from Arcimoto! Arcimoto is a public company and manufacturer of three-wheeled electric vehicles located in Eugene, Oregon. We are currently at 100+ employees and growing, and our customers and suppliers are located in every state around the country. Electric two- and three-wheeled plug-in vehicles are becoming more popular in both the US and in Asia. The US has a fledgling competitive market that manufactures all vehicles in America. However, US manufacturers have not yet been able to reach scale and there is still a big gap between the cost of an internal combustion engine motorcycle and an electric plug-in three-wheeled vehicle.

This credit was created because it can help move the needle for a potential consumer, but it first came at a time when the economy fell apart and many manufacturers did not survive. There are also necessary costs involved in infrastructure investment for fueling and retraining sales staff and mechanical employees on the new technology. The currently expired consumer credit is so important to this industry because it helps to offset these factors.

This credit helps to create American investment in an American industry, which produces both two- and three-wheeled vehicles at several locations throughout the US. We are not part of the Car Tax Credit. These vehicles are sold at locations in almost every US state, and use parts suppliers from every state.

The credit was intended to promote clean fuel and create clean, high paying jobs, and diversify the driving fleet with more efficient transportation options. A robust manufacturing industry in the US is preferable to importing these vehicles from other countries and letting the jobs go to other countries.

We are thankful to have the two- and three-wheeled credit as part of the proposed extenders package in the Senate. The downside for us is that the credits and deductions in the extenders package are being extended after expiration of the credit. Retroactivity for manufacturers in some industries, that can amend their returns, so there is no 'break' in the credit from one fiscal year to the next, for bookkeeping purposes, may very well be useful.

ARCIMOTO, INC

2034 WEST SECOND AVENUE    EUGENE, OREGON    97402    (541) 683-6293

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However, the two- and three-wheeled credit does not come to manufacturers. It is a CONSUMER facing credit meant to incentivize the purchase of a clean fueled vehicle that costs more due to an immature industry that has not reached scale, compared to a traditionally fueled vehicle. When the credit is retroactive it does not incentivize anything. It is a gift, essentially, that costs the taxpayer. Making a CONSUMER credit retroactive actually costs the federal government money and does not help create or incentivize the market for this nascent industry. That is exactly true of our credit. The House Ways and Means Committee held a hearing where witnesses echoed that sentiment.

The result with a forward-looking consumer credit is a more level playing field for untraditional electric vehicles and therefore a more diverse driving fleet because consumers can make a choice based on a level playing field.

This is why we are asking for equality with the rest of the package on the ***amount of time*** the credit is “extended.” A consumer credit is only useful if it looks forward and BEGINS at the date of enactment of the package. What if all consumer credits could extend forward and not backward? Equal in duration to every other retroactive incentive in the package, but the opposite direction in TIME only. Forward facing, achieving the intended effect of the credit and not wasting federal dollars.

We have also proposed a technology neutral credit that would not limit the technology to electric two- and three-wheeled vehicles, allowing other technologies to qualify for the consumer credit, if the miles per gallon equivalent is very high. It rewards certain achievements, not particular technologies. This is an alternative approach that achieves an even better result base on a more rational basis.

American jobs in clean energy and vehicles are the future for this country and after a time, our production will increase to a level that a credit is no longer necessary for the consumer, as we will be building these vehicles in greater volume, and therefore production costs will decrease.

Thank you for your time,  
Arcimoto



June 17, 2019

The Honorable John Thune  
Co-Lead, Energy Tax Extenders Task Force  
Senate Finance Committee  
219 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow  
Co-Lead, Energy Tax Extenders Task Force  
Senate Finance Committee  
219 Dirksen Senate Office Building  
Washington, DC 20510

Dear Senators Thune and Stabenow,

As President of the Fuel Cell and Hydrogen Energy Association (FCHEA), I ask on behalf of our industry that you and your colleagues on the Senate Energy Tax Extenders Task Force **consider the long-term value of extending the recently expired Alternative Motor Fuel Vehicle Credit (30B), Alternative Fuel Vehicle Refueling Property Credit (30C), and the Alternative Fuel Credit (6426.)** These credits will support the further deployment of innovative, clean energy transportation technologies by providing a consumer incentive for the purchase of hydrogen fuel cell vehicles (FCVs), a production incentive for the installment of hydrogen refueling facilities, and an excise incentive for the purchase of hydrogen fuel for FCVs. In addition, FCHEA requests that the Task Force examine the long-term value of an additional five-year extension of the 26 U.S.C. § 48 Investment Tax Credit (ITC) that was included in the Bipartisan Budget Act of 2018 for stationary and material handling fuel cell systems.

FCHEA represents the leading companies and organizations that are advancing innovative, clean, safe, and reliable energy technologies. FCHEA member organizations represent the full global supply chain for hydrogen and fuel cells, including automakers; material, component, stack and system manufacturers; hydrogen producers and energy companies; trade associations; utilities; and end users.

The 30B, 30C, and 6426 credits have expired and have been subsequently extended for short term increments multiple times over the last few years, repeatedly causing disruption in the industry and confusion for consumers. The constant start and stop of these credits has provided uncertainty in the market that makes it more difficult for companies to make long-term investments and business decisions in fuel cell and hydrogen technologies and provides an impression to consumers that this technology may not be a viable solution. **It is critical that the 30B, 30C, and 6426 tax credits be reinstated as quickly as possible, as well as extended to provide long-term security and continuity for the marketplace.**

There are currently forty public retail hydrogen fueling stations open in California, supporting nearly 7,000 zero-emission FCVs and growing each month. In the Northeast, industry has stepped up to fully privately fund an initial network of 12 hydrogen stations to support an early market between the New York City and Boston metropolitan areas. The fuel cell and hydrogen transportation industry is much broader than just light-duty passenger vehicles. Across the United States there are dozens of fuel cell buses in operation, early demonstrations of medium and heavy-duty fuel cell-powered trucks are underway, and tens of thousands of fuel cell forklifts are already in use today at warehouses and distribution facilities.



That said, the availability of hydrogen infrastructure is currently the biggest barrier for broader fuel cell vehicle deployment in the United States. In the lead up to and rollout of commercial offerings of these vehicles, the U.S. Department of Energy, automobile manufacturers, and industrial gas companies have and are continuing to invest billions of dollars in fuel cells and hydrogen. In fact, within just the past year, multiple companies have made announcements hydrogen production investments for future fuel cell transportation totaling hundreds of millions of dollars. California has committed \$200 million through 2024, cost-shared with industry, to support the deployment of 100 hydrogen refueling stations, but despite that, much more support is still needed.

By reinstating and extending zero-emission hydrogen infrastructure incentives, as well as consumer FCV tax credits, America can not only enable future expansion of environmentally-friendly alternatives for transportation, but can also provide economic growth, maintain leadership in this innovative technology, and support national security through domestic fuel production and reduced reliance on foreign oil.

**Fuel cell vehicles support American technology leadership.** The United States is currently the world leader in fuel cell technologies, home to the largest deployments of on and off-road fuel cell vehicles and the principal manufacturers of stationary fuel cell systems. This leadership places American companies on the forefront of the industry allowing them to thrive, fuelling job growth, domestic manufacturing, and exports of products and components abroad. However, Europe, Japan, South Korea, and China are quickly catching up with the American fuel cell industry through strong government investment in FCVs, hydrogen fuelling infrastructure, and stationary fuel cells for power generation.

**Fuel cell vehicles support the environment.** Multiple studies, including by U.S. Department of Energy's Argonne National Laboratory, have demonstrated that deployment of fuel cell vehicles provide significant emission reductions compared to gasoline vehicles, and are comparable in reductions to battery-electric vehicles. In addition, when using hydrogen sourced from renewables or other decarbonized sources, such as natural gas with carbon capture and sequestration (CCS), FCVs can eliminate well-to-wheels tailpipe emissions. Last autumn, the leading companies in the global fuel cell industry committed to completely decarbonizing hydrogen fuel for transportation by 2030. FCHEA supports this ambitious goal, and we believe that sustained federal support for the deployment of hydrogen fueling infrastructure through the tax code can help further the adoption of decarbonized hydrogen fuel.

**Fuel cell vehicles are ideal for expanding electrification across the transportation sector.** In addition to light-duty FCVs, the transportation industry has made strides in recent years to develop and deploy hydrogen fuel cell-powered forklifts, delivery vans, ground support equipment, shuttles, buses, and Class-8 trucks for consumer transit and logistics operations. Commercial end-users such as UPS, Fed EX, the Ports of Los Angeles and Long Beach, Anheuser-Busch, and more are recognizing that advances in fuel cell stack technology allow medium and heavy-duty FCVs to drive longer distances while carrying more passengers or cargo than their battery-powered counterparts. More than 26,000 fuel cell-powered forklifts and other material handling equipment are in operation today at warehouses and distribution centers across the country, including customer such as Walmart, Amazon, Home Depot, FedEx, Whole Foods, and more.



**Fuel cell vehicles reduce our dependence on foreign oil and enhance our national security.** Hydrogen fuel in the United States can be produced completely from our abundant domestic resources, from traditional sources such as natural gas to renewable ones such as wind- or solar-powered electrolysis. While the United States is a net-exporter of oil and natural gas, almost 40% of our country's daily transportation fuel needs to be imported. Expanding deployment of fuel cell vehicles fueled by hydrogen produced from domestic resources will support our energy independence and serve a vital national security interest.

We would be remiss if we did not mention that the tax code is currently aligned to skew customer choice by offering a tax credit for one zero-emission vehicle (ZEV) technology – battery electric vehicles – and not another. We believe that the best tax policy is one that is technology neutral and provides consumers choice. One way to **provide tax parity for all ZEVs is by adopting S.1094 - Driving America Forward Act introduced by Task Force Chair Senator Stabenow with Senators Alexander, Peters, and Collins.**

We would also appreciate the opportunity to discuss modifying the 30C credit by raising the cap from \$30,000, which is prohibitively low. The compliance costs far outweigh the benefit of the credit. Addressing this and allowing for hydrogen infrastructure that supports material handling equipment to qualify, will allow the Code to reflect Congressional intent, and help seed new stations. Lastly, reauthorization and a simple modification of the language in Section 6426 is needed to include the sale of gaseous hydrogen for use onboard a vehicle, which is the pathway being considered by automobile manufacturers and allows material handling equipment refueling to qualify.

Lastly, we are thankful for the Senate's past support of our industry, particularly with the reinstatement of the fuel cell ITC, which reestablished a level playing field for alternative energy power solutions. This was a win for our industry and is helping to create high-skilled American manufacturing and service jobs across the country. Fuel cells provide an economically and environmentally friendly means of producing electricity using natural gas or decarbonized sources such as biogas. As the availability of renewable hydrogen expands, fuel cells will be able to provide zero-emissions baseload electricity. We look forward to working with the Task Force and the Senate Finance Committee to advance efforts for other segments of the industry. We also welcome the opportunity for discussions with the Task Force on an extension of the ITC for an additional five years at 30% before the current phase down begins.

Thank you in advance for your consideration. Our members and staff would welcome the opportunity to meet with you or your appropriate representative to discuss this further. Should you wish to reach me in the meantime, I am available by email at [mmarkowitz@fchea.org](mailto:mmarkowitz@fchea.org) or by phone at (202) 261-1333.

Sincerely,

Morry Markowitz  
President, Fuel Cell and Hydrogen Energy Association

Cc: Members of the Senate Finance Committee Energy Tax Extenders Task Force





Harley-Davidson Motor Company

101 Constitution Ave NW 825 East, Washington DC 20001

June 14, 2019

Majority Whip John Thune  
Attn: Brendon Plack  
511 Dirksen Senate Office Building  
Washington, DC 20510

Re: Two-Wheel Electric Vehicle Tax Credit

Dear Brendon:

I am reaching to you to ask for your support of the two-wheel EV tax credit and the passage of tax extenders.

Harley-Davidson Motor Company (HDMC) was founded in Milwaukee, Wisconsin in 1903. Since the first production motorcycle was built and sold, HDMC has maintained both its headquarters as well as a large part of its manufacturing presence in Wisconsin. HDMC produces custom, cruiser and touring motorcycles and offers a complete line of Harley-Davidson® motorcycle parts, accessories, riding gear and apparel, and general merchandise.

In 2018, Harley-Davidson announced the *More Roads to Harley-Davidson* strategy including a strong emphasis on an electrification portfolio. This year, HDMC will release LiveWire™, its first fully electric motorcycle. Then in subsequent years, we will unveil a complete line of electric mobility options including an e-bicycle.

The US has a fledgling two and three-wheel EV market, and US manufacturers have not yet reached scale. However, the electric two and three wheeled plug-in vehicles are becoming more popular in the US as a clean form of transportation. In addition to the benefits offered by an electric vehicle, motorcycling offers numerous advantages to our infrastructure concerns, including reducing roadway and parking congestion and deterioration of roadways.

All Harley-Davidson dealers are independently owned, often small businesses. Currently, two dealerships in your state are going to be a LiveWire™ dealers – **J & L Harley-Davidson** and **Glacial Lakes Harley-Davidson**. There are necessary infrastructure investments for charging stations and training service staff on the new technology required by each dealer. HDMC dealers are making these changes to make way for the new electric motorcycle because they believe in the investment.

As Chief of Staff for Majority Whip Thune, you are in the position to help this new form motorcycling succeed and assist a small business in your state by supporting the small change of extending the tax credit for one to two years. Please let me know if you have any questions, or if I can be of further assistance.

Sincerely,

APRIL CANTER, MPA  
Manager, Government Affairs



June 17, 2019

Senator Pat Roberts  
Senate Finance Committee  
Hart Senate Office Bldg., Rm. 109  
Washington, D.C., 20510

**Re: Tax extenders – 2 and 3-Wheeled Plug-in Vehicles**

Dear Senator Roberts:

I am contacting you to make sure that you are aware of a provision that is in the tax extenders package. It is the 2-3 wheeled plug-in electric vehicle consumer tax credit. This provision directly affects constituents in your state.

In our nascent industry, having the federal government help us create a continuous, steady market is essential to many businesses and their workers, suppliers and their workers. Our corporate headquarters and factory are in Scotts Valley, CA. One of our Zero dealers, Andrew Hammar of Letko Cycles in Olathe, serves all of Kansas and they benefit from increased sales when their customers in your state receive this tax credit. We use parts suppliers from every state. We are proud to be bringing high-tech manufacturing back to the United States.

The credit was intended to promote clean fuel and create clean, high paying jobs, and diversify the driving fleet with more efficient transportation options. A robust manufacturing industry in the US is preferable to importing these vehicles from other countries and letting the jobs go to other countries. Industries (including ours) are desperate for an extension as soon as possible. Businesses and consumers were expecting to take these credits on their current tax returns. Immediate passage is urgent.

Our credit is a consumer credit, so has no need for retroactivity. All consumer credits should be prospective from the date of enactment and not waste government funding to incentivize actions that have already occurred. It's not a policy change, but should be championed for the extenders package by the Senate. We need to stay in the package but for the amount of time the other credits are retroactive, a consumer credit, like ours, needs to be the same amount of time—only prospective. A true "extension."

We have great new policy language to make our credit technology neutral. And we can't wait to discuss it at hearings, in meetings, etc. But right now, this extenders package is past due and businesses like ours and consumers across the country are expecting it and need it —until we have an opportunity to properly consider extenders for policy changes.

# ZERO

## MOTORCYCLES®

American jobs in clean energy and vehicles are the future for this country and after a time, our production will increase to a level that a credit is no longer necessary for the consumer, as we will be building these vehicles in greater volume, and therefore production costs will decrease.

Zero Motorcycles presence, our dealers, and our employees and customers from your state will only continue to grow as a result of this credit.

We'd like to come in and talk to you and/or your tax counsel to discuss this important provision and how we can work together to help a small but growing American industry led by a company that designs and manufactures high performance clean electric vehicles right here in the US.

We really appreciate your help in advance and hope that we can work together to reinstate this key consumer credit.

Sincerely,



Jay Friedland

VP Government Relations and Public Policy

Zero Motorcycles, Inc.

[jay@zeromotorcycles.com](mailto:jay@zeromotorcycles.com)

831-818-3510 (mobile)



June 18, 2019

The Honorable John Thune  
Co-Lead  
Senate Finance Committee  
Taskforce on Energy  
511 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Debbie Stabenow  
Co-Lead  
Senate Finance Committee  
Taskforce on Energy  
731 Hart Senate Office Building  
Washington, D.C. 20510

Dear Senators Thune and Stabenow:

The Paper Recycling Coalition, Inc. (PRC) welcomes your evaluation of the temporary energy provisions of the tax code. As Chairman Grassley observed in launching the Finance Committee's bipartisan taskforce effort, careful consideration of these policies is important to ensure they continue to fulfill their intended purpose. This evaluation is particularly warranted with respect to the section 45(c)(1)(G) tax credit for electricity produced from municipal solid waste (*i.e.*, waste-to-energy production), which has negatively impacted the paper recycling industry.

### **Paper Recycling Drives Economic Growth & Innovation**

PRC represents the interests of the 100% recycled paperboard and containerboard industries. Our member companies operate 500 facilities in 43 states and support over 50,000 well-paid jobs with competitive benefits throughout the United States. PRC members manufacture 100% recycled paper products that are ubiquitous in American commerce, such as cereal and pizza boxes, Amazon boxes, and other shipping containers and packaging critical to today's growing e-commerce economy.

The paper and paperboard recycling sector is one of our country's greatest economic and environmental success stories. The amount of used paper recovered for recycling has nearly doubled since 1990. In 2017, almost 66% of all paper used by Americans was recovered to be recycled, with a goal to exceed 70% by 2020. This translates into real environmental benefits for the American people. By recycling paper, PRC members prevent it from being landfilled where it degrades, producing methane, a greenhouse gas. Indeed, every ton of 100% recycled paperboard produced results in a reduction of 3.17 tons of CO<sub>2</sub>e.

As rates of recycling continue to rise, they will compound the significant economic and employment benefits of paper recycling. Already, recycled paper, paperboard, and deinked market pulp mills employ nearly 140,000 people directly and influence another 615,000 jobs, for a total of nearly 755,000 jobs nationwide. The annual economic impact of paper recycling amounts to a staggering \$150 billion throughout the paper and packaging supply chain.

The impressive economic and environmental benefits of paper recycling are directly tied to the availability of a reliable supply of recovered paper fiber collected for recycling. For that reason, the PRC's primary mission is to protect the U.S. recyclable paper supply from market-distorting government subsidies that divert recyclable paper from the supply chain, thereby limiting opportunities to recycle these materials and turn them into valuable paper and packaging products.

Relatedly, we seek to ensure that government regulations, policies, and programs do not thwart the continued growth of this critical sector of the U.S. economy.

### **The Section 45 Credit for Municipal Solid Waste Creates the Wrong Incentive – Not to Reuse Recyclable Paper**

It is this mission which leads to our serious concerns about the section 45(c)(1)(G) tax credit for electricity produced from waste-to-energy facilities. The current version of section 45, which has expired with respect to facilities commencing construction on or after January 1, 2018, provides an incentive to incinerate *any* municipal solid waste – including recyclable paper. This dramatically reduces the amount of paper available for recycling, and in some cases leads to an erosion in the quality of the recyclable paper that is recovered. There simply is no sound policy justification for this approach.

Congress has made efforts to clarify that section 45 should not act as an incentive to burn recyclable paper. In 2012, as part of the enacted American Taxpayer Relief Act of 2012, Congress amended section 45 to limit the availability of the credit for the production of energy from municipal solid waste that includes paper that is commonly recycled and that has been segregated from other solid waste. This clarification was intended to ensure that the federal government does not incentivize the burning of paper that should be recycled.

Unfortunately, residual ambiguity in the law means that recyclable paper continues to be burned for energy production. Instead of separating paper from waste as Congress intended, in some cases paper continues to be commingled with waste for energy production purposes. As an added negative, commingling in many cases contaminates recyclable paper and leaves it unusable as a feedstock for recycled packaging and products.

### **The Section 45 Credit for Municipal Solid Waste Should Not be Extended Without Reform**

In evaluating the temporary energy provisions of the tax code, the taskforce should consider not only the original purpose of these policies but also any unintended consequences they create. The section 45 credit for waste-to-energy facilities was conceived to incentivize the environmental and economic benefits of renewable energy resources. But those benefits are seriously undermined by the provision's subsidy for the burning of recyclable paper for energy production. If Congress continues to renew the section 45 credit for waste-to-energy facilities without modification, it will continue to provide an incentive for this counterproductive and harmful activity. Section 45 is thus a prototypical example of a temporary tax policy that should not be continued without reform.

The Paper Recycling Coalition supports bipartisan legislation to clarify that the section 45 credit is not available for waste-to-energy facilities that burn commonly recycled paper that has been segregated from solid waste, or that burn solid waste that has been mixed with garbage – thus coming closer to Congress' original intent for the provision.

The Senate version of this legislation – the “Protecting America’s Paper for Recycling Act” (S. 1396) – is sponsored by Senator Stabenow, the co-lead of the energy taskforce, and co-sponsored by taskforce members Senator Cassidy and Senator Carper; Senators Boozman, Isakson, and Baldwin are additional co-sponsors. The legislation would make clear that the municipal solid waste eligible for section 45 does not include commonly recyclable paper or paper that has been commingled with trash. We urge you to include this reform if you decide to extend the section 45(c)(1)(G) tax credit.

Ultimately, since section 45 provides an incentive for energy production and not recycling, the PRC does not support the continued extension of the tax credit for waste-to-energy facilities. If Congress does act to continue this incentive, it is essential to include the modifications reflected in S. 1396.

This commonsense proposal is the only way to bring coherence to a policy that would otherwise prioritize energy production over recycling.

In closing, we hope that the taskforce will take this opportunity either to eliminate the harmful municipal solid waste incentive entirely, or to modify it in a way that protects America's vibrant and growing recycling industry.

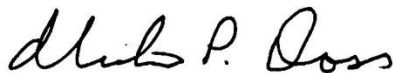
We stand ready to work with you and your staff as you examine these issues. Please do not hesitate to be in contact with any questions, or if we can provide you with any additional information about our industry or the negative effects caused by section 45 as it exists today.

Thank you for your leadership on these important issues. We look forward to working together to ensure that the economic and employment benefits of recycling continue to grow.

Sincerely,



Brian McPheely  
Chairman, Paper Recycling Coalition, Inc.  
Global CEO, Pratt Industries



Michael P. Doss  
Vice Chairman, Paper Recycling Coalition, Inc.  
President/COO, Graphic Packaging International



Terese Colling  
President, Paper Recycling Coalition, Inc.

c/o Colling Swift and Hynes  
10486 Armstrong Street  
Fairfax, Virginia 22030  
Tel: (202) 347-8000  
Fax: (202) 315-2598

## Comments Submitted on the Second Generation Biofuels Tax Incentives by the Second Generation Biofuels Tax Coalition

The Second Generation Biofuels Tax Coalition provides the following comments on the federal Second Generation Biofuels tax incentives to the Senate Finance Committee Energy Task Force. These federal tax incentives for second generation biofuels expired on December 31, 2017. The Coalition advocates that this incentive be extended retroactively from January 1, 2018, and forward through 2019 and 2020, followed by a prospective long-term modification to provide a stable, long-term incentive to encourage continuous innovation in low carbon advanced and cellulosic biofuels.

The Coalition is comprised of the mainstream cellulosic and algal biofuel trade associations that advocate on behalf of second-generation biofuels companies, including: The Advanced Biofuels Business Council (ABBC); Algae Biomass Organization (ABO); Biotechnology Innovation Organization (BIO); Growth Energy, and the Renewable Fuels Association (RFA). Collectively, our organizations represent hundreds of companies, state associations, academic associations and related organizations across the United States.

Energy investments are global and policy-driven. Energy investments are policy-driven because global energy markets are not free markets. For example, a recent report by the International Monetary Fund (IMF) estimated that global energy subsidies in 2017 exceeded \$5 trillion (6.5% of world GDP). The United States is the second largest source behind China. By global energy sector, coal is the largest recipient of subsidies (44 percent), followed by petroleum (41 percent), and natural gas (10 percent).

The practical effect of energy subsidies is to increase investment, and in many cases decrease investment risk, in certain types of energy production. One of the greatest challenges we face as an innovative energy sector is persevering against tax policy that provides incentives for energy production – and therefore energy investment – in an inequitable way across different energy business sectors.

For example, U.S. oil and gas production increases over the last decade have enabled the country to substantially reduce its dependence on foreign sources of oil and gas. One of the leaders in the tight (fracked) oil and gas industry testified that the Senate Finance Committee that:

... the development of horizontal drilling took trial and error. Without the current capital [federal tax] provisions in place, we would not have been able to fail over and over again, which is what it took to advance the technology needed to produce the Bakken and numerous other resource plays across America. This paradigm shift in American oil and gas exploration brings with it high-paying jobs, increased tax revenues, and economic growth, while lessening our dependence on foreign oil. But it depends on substantial amounts of capital. The tax provisions that let us keep our own money to reinvest in drilling are crucial to keep this energy revival going.<sup>1</sup>

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<sup>1</sup> See <http://www.finance.senate.gov/imo/media/doc/Hamm%20Testimony1.pdf>, p. 2.

It is critical to point out that cellulosic biofuel producers and “tight oil” producers have something in common; they are both endeavoring to supply the country and world markets with what the Energy Information Administration (EIA) terms “unconventional fuel.” While facing similar technology risk and capital intensity, the cellulosic biofuels industry does not receive the same tax treatment as tight oil and gas producers, either from the perspective of value or duration.

Private companies have nonetheless invested billions of dollars into the research and development of new conversion technologies to produce advanced and cellulosic biofuels from the vast biomass and waste feedstocks available in the United States. These investments have resulted in significant technological breakthroughs in the conversion of these abundant resources into sustainable biofuels. As a result, we have seen first of their kind commercial-scale biorefineries produce advanced and cellulosic biofuels. However, these technologies are just the beginning of our industry’s ability to produce biofuels from biomass and waste, and continued investment is needed to support innovation and growth in this promising sector of the U.S. economy.

In 2008, the Cellulosic Biofuel Producer Credit was enacted as part of the Food, Conservation, and Energy Act, for qualified cellulosic biofuel production after December 31, 2008, and before January 1, 2013. In 2012 it was renamed the “Second Generation Biofuel Producer Credit” in the American Tax Relief Act of 2012, and algae, cyanobacteria, and lemna were added as qualifying feedstocks. The provision has been extended four times, most recently by the Bipartisan Budget Act.

As described by the congressional Joint Committee on Taxation, the production tax credit provides a \$1.01-per-gallon, non-refundable income tax credit for qualified second generation biofuel sold at retail into the fuel tank of a buyer’s vehicle, or second generation biofuel mixed with gasoline or a special fuel and sold or used as a fuel (not limited to transportation fuel). The second generation credit applies to a variety of renewable spark-ignition biofuels (i.e. it does not apply to compression-ignition fuels such as diesel, biodiesel, renewable diesel or renewable jet fuel) conforming to definitions set forth in section 40. Under the Renewable Fuel Standard (RFS), as expanded in the Energy Independence and Security Act of 2007 (EISA), cellulosic biofuel must be produced from cellulose, hemicellulose, or lignin and must reduce lifecycle greenhouse gas emissions by a minimum of 60 percent.

The intent of the original cellulosic credit was to encourage investment in capital -intensive domestic biofuels manufacturing facilities and equipment. Since the credit has been enacted, these public policy goals have been frustrated by the frequent expirations of the credit, which reduced investor confidence in the long-term availability of the credit.

These temporary tax provisions expired at the end of 2017 after having been extended retroactively in the Bipartisan Budget Act of 2018. The credits have enabled our industry to create new jobs, contribute to rural prosperity, and diversify our nation’s energy supply. Availability of these credits are critical as our companies make significant investments to create new agricultural supply chains, build infrastructure for liquid biofuels, and develop innovative new technologies. Allowing this incentive to lapse has created uncertainty for investors and the industry, jeopardizing the long-term domestic investments necessary for the development of these biofuels, and leading companies to either shelve plans for domestic facilities, or build them overseas.



Beyond obtaining a short two- or three-year extension to reinvigorate investors' confidence in the sector, the coalition has considered the challenges presented by multiple short-term extensions. While they may provide some very modest benefit to those technologies nearest to commercial production of biofuels, they are of significantly lesser value to the second, third and other waves of fuel technologies, currently in early-stage research, that require persistent investment and refinement over a protracted period. Clearly, modifying the production credit by simply removing the termination date would be simple to draft, and would unambiguously encourage the longer-term technologies. However, there may be other alternatives available to the tax-writing committees that would hold out the promise of assistance to the more futuristic facilities, without potentially over-subsidizing the most current technologies as they become more established.

The Coalition believes that one way to make the second generation program perform as intended with regard to technologies that are years away from commercial-scale production, while at the same time protecting taxpayers' interests, would be for Congress to shift the incentives to a per-facility rule like that used in section 45, where each qualifying biofuel facility would receive a guaranteed stream of production credits for a finite period. At the end of the period, the facility would be ineligible for additional tax benefits (absent a major refurbishment). New second generation facilities placed in service years later, though, would be eligible to qualify for their own stream of tax credits.

By guaranteeing eligible facilities a certain number of years of production tax credit eligibility, Congress could break the on-again, off-again dynamic that has so far crippled the effectiveness of the tax incentives. As with renewable electricity facilities, investors contemplating a major overhaul or repurposing of a facility would be able to claim a new ten-year stream of production credits only if their investment met or exceeded 80% of the facility's new value. Similarly, an "increments of power" rule (like that provided to open-loop biomass electricity facilities in section 45) could provide an incentive for significant additions to an existing second generation plant capacity by providing a new ten-year stream of tax credits limited to the gallons attributable to the newly added property.

In the interest of job creation, infrastructure development, innovation, and energy security, we respectfully ask the Task Force to recommend immediate retroactive extension of the existing-law incentives for at least three years beginning January 1, 2018, and to investigate modifications to the credit that would provide a stable, long-term framework for the development of several waves of innovative, second generation biofuels facilities. Availability of a long-term credit for technologies still being developed could stimulate investment and the growth of clean energy development and deployment for years to come. We look forward to working with you to achieve this important goal.

Sincerely

Advanced Biofuels Business Council  
Algae Biomass Organization  
Biotechnology Innovation Organization  
Growth Energy  
Renewable Fuels Association

111 Speen St, Ste 410  
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ameresco.com

June 21, 2019

The Honorable John Thune  
Co-Lead, Taskforce on Energy  
Senate Finance Committee  
511 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Debbie Stabenow  
Co-Lead, Taskforce on Energy  
Senate Finance Committee  
731 Hart Senate Office Building  
Washington, D.C. 20510

Dear Senator Thune and Senator Stabenow,

On behalf of Ameresco, thank you for this opportunity to provide comments to the Senate Finance Committee Energy Taskforce. Ameresco (NYSE:AMRC) is a leading energy efficiency and renewable company with headquarters in Framingham, Massachusetts. We employ in excess 1,100 employees in the United States.

Ameresco is primarily focused on implementing energy efficiency improvements in public and institutional buildings, as well as developing, operating and/or owning renewable energy plants. With that, Ameresco has utilized several energy tax incentives including provisions under Section 45, Section 48, and Section 179D of the tax code. We also utilize depreciation incentives applicable to renewable energy assets. Collectively, these tax benefits have been transformative to our business.

We have summarized below our recommendations for the Energy Taskforce regarding the aforementioned tax provisions. Ameresco is a member of the Business Council for Sustainable Energy, as well as the Section 179D Coalition for Energy Efficient Jobs and Investment, which have also submitted comments to the Cost Recovery and Energy Taskforces. To avoid redundancy, our comments address areas specific to Ameresco's business experience.

#### **Section 45 Production Tax Credit**

- We support an extension of this credit for non-wind technologies. We have beneficially utilized this credit, and the ability to elect the ITC, for numerous landfill gas to energy plants.
- We recommend the Taskforce think expansively about other potential qualifying technologies to support new and emerging technologies. For example, we recommend expanding the qualifying energy resources under the Section 45 PTC to include *Renewable Natural Gas* and *Renewable Hydrogen* and to not limit their use to electricity production. We recommend the expanded credit be available to *Renewable Natural Gas* and *Renewable Hydrogen* for *pipeline injection, thermal energy, renewable electricity, and/or transportation fuel*.
- We have developed and own Renewable Natural Gas (RNG) facilities at wastewater treatment plants and landfills throughout the United States (including one in Canton, Michigan) that provides RNG through the natural gas pipeline grid to the transportation sector to reduce harmful emissions to the environment from vehicles. It remains challenging to finance the high cost of these complex systems. A tax credit would be highly beneficial and useful to the development of these plants.



- An expansion of the Section 45 credit to RNG would lead to increased development of projects providing economic value to local communities, as well as employment opportunities associated with the construction and operation of RNG facilities. A study by ICF estimated that RNG production facilities generate 4.7 to 6.2 jobs per million Ethanol Gas Equivalent (EGE), indicating that each additional 100 million EGE of RNG production would drive the creation of 470 to 620 jobs (approximately 550 additional jobs per 100 million EGE). Incremental jobs were estimated to provide income per worker of \$68,960.

#### **Section 48 Investment Tax Credit**

- We support legislation to expand the definition of qualifying Section 48 ITC technologies to include *Energy Storage*. This expansion would have exponential market benefits and would also support market transformation for the use of non-merchant behind-the-meter battery energy storage systems at governmental and institutional facilities where resilient energy measures are needed.
- We also support an extension of the Solar Investment Tax Credit under Section 48 given market conditions and constraints attributable to the solar tariffs. The preceding threat of tariffs and the subsequent implementation of tariffs has severely constrained the availability and supply of solar PV modules in the market, particularly for the non-utility scale distributed generation market. This has further increased the price of solar modules and these prices do not comport with the market outlook in 2015 when Congress extended the Solar ITC on a multi-year and reduced basis.

#### **Section 179D Energy Efficient Commercial Buildings Deduction**

- We support a multi-year extension of the Section 179D deduction and believe the provision continues to provide added value in the energy efficiency market.
- While the Tax Cuts and Jobs Acts allows business owners to elect 100 percent business expensing for certain Section 179 property, including for HVAC systems, this incentive under the Tax Cuts and Jobs Act does not apply to government-owned buildings. Therefore, the government allocation provision under Section 179D remains a vital and valuable tool for government-building owners.
- We recommend that any future increase in the ASHRAE standards under Section 179D are implemented on a future looking basis and do not apply to projects retroactively. The ASHRAE standards used for Section 179D should also lag behind the most updated ASHRAE standards to not deter the use of Section 179D in older buildings that may otherwise achieve significant energy efficiency gains that would not be credited under the building modeling system used to certify 179D improvements.
- We recommend the Section 179D deduction not be limited to a one-time benefit (or one time-use) for a single building. Most commercial buildings will undergo several phases of energy efficiency improvements in their life time, and this one-time use limitation curtails the use of 179D for newer energy efficient technologies.

Thank you again for this opportunity to provide comments to the Energy Taskforce. If we can be of further assistance to your efforts, please do not hesitate to contact me at [mbakas@ameresco.com](mailto:mbakas@ameresco.com) or by phone at (508) 661-2223.

Sincerely,



Michael T. Bakas  
Executive Vice President  
Ameresco, Inc.





June 20, 2019

The Honorable John Thune  
Co-Lead, Senate Finance Committee Energy Extenders Working Group  
511 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow  
Co-Lead, Senate Finance Committee Energy Extenders Working Group  
731 Hart Senate Office Building  
Washington, DC 20510

Dear Senator Thune, Senator Stabenow and All Members of the Senate Finance Committee Energy Extenders Task Force:

The Baseload Renewables Coalition, comprised of the National Hydropower Association ("NHA"), the American Biogas Council ("ABC"), the Biomass Power Association ("BPA"), and the Energy Recovery Council ("ERC"), appreciate the opportunity to inform your work as the Working Group, and Committee as a whole, consider the future of energy tax extenders and long-term renewable energy tax policy.

Our industries provide baseload, renewable power to communities across the United States, employing tens of thousands of Americans in good-paying jobs, many of whom live in rural areas. Despite the many benefits we collectively provide, the tax credits for biomass, biogas, hydropower, marine energy, and waste-to-energy have been expired since December 31, 2017, while other renewable energy industries have enjoyed long-term extensions.

This disparity in treatment has placed hydropower, biomass, waste-to-energy and biogas technologies at a significant competitive economic disadvantage in the market for new renewable electricity generation, particularly in the eyes of investors who are seeking certainty with respect to tax incentives. Renewable baseload technologies play an indispensable role in maintaining a reliable and functioning electric grid system, while also supporting the integration of additional wind and solar generation into the grid.

Consistent, stable tax policy support for our technologies will reinvigorate project development, leverage significant private investment and promote job creation and local economic benefits across the nation.

Without it, there will continue to be less deployment of reliable, renewable, baseload power, which we believe is not the intent or desire of Congress and not in line with a national energy strategy that seeks to reduce carbon emissions while maintaining grid reliability and resilience.

Passage of a tax extenders package that includes an extension of the Section 45 PTC, with the election to take the ITC, remains one of the highest priorities for all of our industries. As such, we have supported S. 617, the Tax Extender and Disaster Relief Act of 2019 with the extensions through 2019. We also support H.R. 3301, the Taxpayer Certainty and Disaster Tax Relief Act of 2019, which provides an extra year of certainty with an extension through 2020.

Additionally, we believe continued long-term incentives for our industries (providing the same market signal that other technologies have received in the past with their multi-year extensions) are needed and warranted.

Finally, our associations are also supportive of the tax credit for energy storage, such as that contained in S. 1142, the Energy Storage Tax Incentive and Deployment Act of 2019.

Thank you for the opportunity to provide this written input to the working group. Our associations, either as a coalition or individually, would also appreciate meeting with you and your staff as you continue to consider energy tax extenders and future long-term energy tax policy.

Sincerely,



Linda Church Ciocci, President and CEO  
National Hydropower Association



Patrick Serfass, Executive Director  
American Biogas Council



Robert E. Cleaves, IV, President and CEO  
Biomass Power Association



Ted Michaels, President  
Energy Recovery Council



On behalf of CHS, Inc, I am writing to express support for an extension of the Alternative Fuels Mixture Credit, (IRC § 6426(e)). The Alternative Fuels Mixture Credit (AFMC) expired on December 31, 2017.

However, we express our strong opposition to limits proposed to the Alternative Fuels Mixture Credit in Tax Extender and Disaster Relief Act of 2019 (S. 617), introduced earlier this year by Senators Grassley and Wyden.

While we hope to have the opportunity to discuss our concerns directly with Task Force members, we greatly appreciate the opportunity to submit comments.

## **CHS**

CHS, Inc is the largest farmer owned cooperative in the United States. We are owned by 70,000 American farmers and more than 1000 independent cooperatives. As part of our diverse energy, agronomy, grain and food businesses, CHS supplies energy products, including gasoline, diesel, ethanol and propane to farmers, co-ops and rural communities across the U.S.

### **Propane/Alternative Fuel Mixture Credit**

Propane has long been considered an alternative fuel. The Energy Policy Act of 1992 (EPAct) confirms that definition in statute (42 US Code 13211).

The alternative fuel mixture credit (IRC § 6426(e)) was established by Sec. 11113 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users ("SAFETEA-LU", or Pub. L. 109-59) passed in 2005.

Congress included the AFMC in SAFETEA-LU as means of promoting the use of alternative fuels. It provides a 50 cent credit to eligible taxpayers that may be used to offset fuel excise tax liability.

The original definition of alternative fuel for the purposes of the mixture credit (IRC § 6426(d)) included six fuels, with liquefied petroleum gas the first of those listed in subparagraph (A). That definition has remained unchanged with the exception of the addition of biomass-derived liquid fuels added in subparagraph (G).

For purposes of that definition, the legislative history of SAFETEA-LU clearly **defines liquefied petroleum gas as propane**. See the Conference Report for SAFETEA-LU (H. Rept. 109-203), p. 1119.

Although legal arguments have emerged in the intervening years that the term liquefied petroleum gas implies a broader universe of fuels in addition to propane, the legislative history demonstrates that Congress' focused original intent in establishing the alternative fuel mixture credit was to apply the credit to mixtures of gasoline blend stock and propane.

### **Tax Extender and Disaster Relief Act of 2019 (S.617) excludes propane as an eligible alternative fuel**

The text of the Tax Extender and Disaster Relief Act of 2019 (S. 617), p. 12 line 15, clarifies those legal arguments, but it is also drafted so broadly as to exclude mixtures of gasoline and propane, by referring directly to subparagraph (A).

An alternative approach would be to add modifying language, replacing “(A), (C), or (F)” with “(A) other than propane, (C), or (F)”.

Such an approach would clarify the statute and resolve ambiguities involving other fuels, while maintaining the credit for mixtures of gasoline and propane as clearly and originally intended by Congress when it enacted SAFETEA-LU.

### **CHS/AFMC**

CHS blends propane with butane at our facilities in Ross, ND and Conway, KS and has successfully received the Alternative Fuels Mixture Credit for tax years 2016 and 2017. Prior to 2016, we had not sought the credit and we did not retroactively amend prior returns.

CHS successfully claimed the credit on our 2016 return. While the credit expired on December 31, 2016, we continued blending in 2017. Once Congress retroactively allowed the credit for 2017, we amended our return and applied for the credit utilizing the procedure that was outlined by Congress in the legislation. Both the 2016 and 2017 AFM claims were audited and approved by the IRS. We received our 2017 refund in November 2018. We have continued to blend in 2018 and the first few months of 2019.

We were very careful in exploring use of the credit prior to making a substantial investment in blending facilities. We consulted outside tax counsel who indicated that our activity would likely qualify. We subsequently consulted a second outside tax counsel who independently affirmed that view. This second tax counsel provided us with a should level opinion regarding our eligibility for the credit.

At this point, our farmer owners and company leadership authorized substantial capital expenditures to construct the necessary infrastructure and funds necessary to operate it safely and in compliance with federal rules and industry standards.

### **Total CHS Propane Gallons: Blended vs. Total Gallons**

Anecdotally, we have heard concern expressed about the cost to the Treasury of extending Alternative Fuels Mixture Credit. We believe it is important to understand the realities of the propane market when estimating the impact of the credit.

CHS markets more than 860 million gallons of propane, nearly 10 percent of the U.S. total. While we are one the nation's largest propane marketers, CHS blends only 28 percent of its total propane gallons sold.

- **Percentage of CHS AFM gallons sold vs CHS Total Gallons sold:**

Gallons sold	2016	2017	2018
Alternative Fuels Mixture	76,440,000	187,751,928	238,383,600
CHS total odorized gallons	791,676,195	789,374,113	860,389,536
percentage of AFM to total	10%	24%	28%

- **US volumes (gallons) of odorized propane gallons sold industry-wide:**

Year	Total
2011	8,372,129,637
2012	7,504,908,787
2013	9,094,180,500
2014	9,287,040,750
2015	8,142,395,250
2016	6,776,580,250
2017	8,363,136,744
2018	8,992,591,980
AVERAGE	8,316,620,487

To qualify for the credit, a taxpayer must blend an alternative fuel with a gasoline or gasoline blend stock to generate a \$.50 credit that may be used to offset energy related excise tax liability. We believe that anecdotal evidence strongly supports the claim that propane/butane blending cannot reduce federal revenue by billions of dollars.

1. The nine-year average volume of propane gallons sold industry wide in the U.S. is 8.3 billion gallons. Assuming every gallon of propane sold in the market is blended with gasoline and every propane blender somehow has an offsetting excise tax liability, the score would be 8.3 billion x \$.50. But even that is an unrealistic scenario. CHS, who is uniquely situated as a company to take advantage of the credit, only blends 28 percent of our total volume and we are roughly 10 percent of the market.
2. The propane market is stable and is not likely to grow dramatically. In fact, the U.S. Department of Energy has forecasted just an increase of 800 million gallons between 2016 and 2025. There cannot be a sudden influx of hidden taxpayer/blenders as the market will not sustain sudden new output.



### **CHS use fits legislative intent**

CHS uses revenue generated by the credit to encourage expansion of propane transportation infrastructure, entirely consistent with the original intent of the Alternative Fuels Mixture Credit. Funds derived from the credit are used by CHS to incentivize customers to construct propane auto gas infrastructure and convert vehicles. Attached, please find information on the CHS “propane-powered rebate” program. We have already seen signs of significant infrastructure and conversion investment eligible for the rebate. The program is targeted at fleet conversion to propane fuel in law enforcement vehicles and bus fleets, especially school bus fleets.

### **Why is propane conversion important?**

Propane is an extremely clean burning, low-carbon alternative to gasoline or diesel. In fact, propane autogas exhaust creates 60 to 70% less smog-producing hydrocarbons than gasoline, yields 12% less carbon dioxide, about 20% less nitrogen oxide, and as much as 60% less carbon monoxide as gasoline, and cuts emissions of benzene and toluene by up to 96 percent.

After an initial investment in infrastructure and vehicle conversion, propane is a less expensive alternative to diesel and gasoline. In fact, the price differential can be as high as \$1.00-1.50/gallon.

By incenting infrastructure and vehicle investment, the CHS propane powered rebate is providing law enforcement, school districts and municipal transit a cleaner and less expensive alternative fuel.

### **Conclusion:**

1. Propane is a clean burning, inexpensive alternative fuel.
2. Use of propane as an alternative fuel for purposes of qualifying for the Alternative Fuels Mixture Credit fulfills the legal requirement and legislative intent of SAFETEA-LU.
3. CHS has successfully qualified for the AFMC in 2016 and 2017.
4. CHS’s use of AFMC benefits to incentivize alternative fuel infrastructure and vehicle conversion is wholly consistent with the intent of SAFETEA-LU.
5. CHS is a primary participant in the propane market with a nearly 10 percent share of a highly fragmented market and is one of a limited number of companies in the wholesale and retail propane marketplace that qualifies and benefits from the AFMC.

CHS Inc. appreciates the opportunity to provide this information. Please let us know if you have questions or need more information.

# PROPANE-POWERED™ REBATE PROGRAM



The CHS Propane-Powered™ Rebate Program from autogas dispensers to propane school bus funding, CHS is committed to helping both you and the propane industry grow gallons. With a focus on autogas infrastructure, the CHS Propane-Powered Rebate Program helps you remain competitive with other alternative fuels.

**Take advantage of unprecedented rebates to grow your business.**

## ► TYPES OF REBATES

### MARKETER REBATE



**Autogas Conversion Kits  
(Cars/Trucks/Crane Trucks)**  
Dollars per item: \$5,000

Max. per marketer: \$5,000

.....  
**Marketer Vehicle Graphics**  
Dollars per item: \$500

Max. per marketer: \$500

.....  
**S2G Bobtail/Conversion Kit**  
Dollars per item: \$5,000

Max. per marketer: 2 trucks  
or \$10,000

### AUTOGAS DISPENSER REBATE



**Private:**  
\$25,000 for dispenser, not  
exceeding 50 percent of  
dispenser cost

.....  
**Public:**  
\$30,000 for dispenser, not  
exceeding 70 percent of cost

### SCHOOL BUS OR FLEET CONVERSION REBATE



Dollars per item: \$2,500 per  
bus or fleet vehicle

.....  
**Max. per school or fleet:**  
10 buses or fleet vehicles

.....  
**Max. per marketer: \$25,000**

### GENERATORS AND IRRIGATION ENGINES



Dollars per item: \$2,500

.....  
**Max. per marketer:**  
\$5,000, not to exceed 50  
percent of a generator's  
purchase price

## TRAINING AND GRANT WRITING

Marketers participating in the CHS Propane-Powered™ Rebate Program are eligible for on-site autogas training or a third-party autogas grant writer if applying for VW, DERA or other industry rebates. Maximum rebate per marketer for training and grant writing is \$1,000.



## HOW IT WORKS

Marketer rebate dollars are calculated beginning with January 1, 2018, purchases and updated each month based on your cumulative propane purchases. Rebates will continue to accumulate through August 31, 2020.

To calculate your available rebate dollars, take the number of wholesale propane gallons purchased since January 1, 2018, and multiply by \$0.01.

For example, a million-gallon marketer would be eligible for \$10,000 in rebate dollars. The gallons are based on combined primary account and subaccount purchases, if applicable. The primary marketer determines how to use combined accumulated dollars.

Equipment purchased through the program must be purchased through CHS Energy Equipment. CHS will issue rebates in the form of credit to approved applicants. Rebates will appear as a credit invoice. All rebates are provided on a first-come, first-served basis.

## GET STARTED TODAY!

Contact your CHS propane account manager or visit the Rebates tab in the Propane Control Room to see what dollars you have available.

# ADDITIONAL CHS REIMBURSEMENT PROGRAMS

## ► SAFETY REIMBURSEMENT PROGRAM

In September 2018, CHS launched an enhanced Safety Reimbursement Program that offers new options reflective of industry needs. Through these programs, CHS helps with the cost of safety programs by providing a per-gallon reimbursement on propane purchases.

### HOW IT WORKS

Propane marketers earn \$.001 (one-tenth of a cent) per gallon of propane purchased from CHS during the fiscal year of September through August. This money helps offset the cost of safety-related expenses.

#### Types of Safety Reimbursements

- **Community Training:** Up to \$1,000 can be reimbursed for training programs, including live burn demonstrations and rollover simulations.
- **Safety Materials and Collateral:** Marketers can be reimbursed for the cost of safety materials from the Propane Education & Research Council (PERC).
- **Propane Safety Sessions at Equipment Roadshows:** Marketers are eligible for \$100 per person reimbursement up to \$1,000 to attend CHS Equipment Roadshows, which include state-of-the-art safety training sessions.
- **PERC Training Courses:** Marketers can receive reimbursement to participate in PERC Training Courses, including Certified Employee Training Program courses and e-learning DVDs.
- **Marketer Safety Equipment:** Marketers can be reimbursed for safety equipment, such as gas sensor equipment or fire-resistant clothing, purchased through CHS Energy Equipment at [chspropaneequipment.com](https://chspropaneequipment.com).
- **Custom Safety Programs:** Additional safety ideas not included in the Safety Reimbursement Program may be eligible for reimbursement. Speak with your propane account manager about your idea to see if it is eligible.

To learn more about selling propane autogas to fleets, visit the CHS Propane-Power™ section on the Propane page of MyCHS.

## ► CHS ENERGY EQUIPMENT PROGRAMS

At CHS, we partner with equipment vendors committed to product quality, reliability and safety. By partnering with CHS Energy Equipment, you'll receive quality products and superior service as well as special incentives and programs only available to CHS customers.

#### CHS Storage for Pennies Program

This lease-to-own program allows you to get new bulk propane storage and autogas dispensers without the burden of costly upfront expenses.

Equipment must be purchased through CHS Energy Equipment. For more details, call 800-852-8186, option 1.

#### Propane Equipment Rewards

Earn a \$25 Cabela's gift card for each \$1,000 qualifying order of Berquist, FEI, Leran, IPS and GEC propane equipment. Orders must be placed through the CHS Propane Equipment online store.

Visit [chspropaneequipment.com](https://chspropaneequipment.com) and click the Login icon to get started.



**Questions? Your CHS account manager can help. Call us today to get started.**



June 20, 2019

Senator John Thune (R-SD), Co-Lead  
Senator Pat Roberts (R-KS)  
Senator John Cornyn (R-TX)  
Senator Bill Cassidy (R-LA)

Senator Debbie Stabenow (D-MI), Co-Lead  
Senator Thomas Carper (D-DE)  
Senator Sheldon Whitehouse (D-RI)  
Senator Maggie Hassan (D-

**Re: Support for Inclusion of Waste Heat to Power in the Sec. 48 Investment Tax Credit**

Honorable Members of the Senate Finance Committee Energy Working Group:

The Heat is Power Association (HiP), the national trade association for the waste heat to power (WHP) industry, would like to thank you for your leadership in examining energy tax policies. As part of the Senate Finance Committee's efforts to reinstate and/or extend energy tax provisions, we request a small modification to Section 48(c) of the Internal Revenue Code to make "waste heat to power property" eligible for the investment tax credit (ITC). We request that WHP be eligible for an investment tax credit equivalent to that provided for other technologies in Section 48(c) and extending for a period equivalent to that provided for those other technologies.

Similar legislation previously passed the Senate Finance Committee without controversy ([S. 913 in the 114<sup>th</sup> Congress](#)) and was also included in legislation championed by Senators Tom Carper (D-DE), Dean Heller (R-NV), Lindsey Graham (R-SC), and Bob Casey (D-PA) ([S. 1409](#) in the 115<sup>th</sup> Congress). Senator Carper is updating and preparing the bill for reintroduction, and we urge its inclusion in any tax extenders package or other tax vehicles that may pass during this Congress.

Simply put: It is a shame to waste energy. Waste Heat to Power (WHP) is a form of clean energy that uses leftover heat from industrial, commercial and institutional sources to generate electricity for use on site or for export to the grid. WHP systems can capture waste heat from a variety of sources (e.g., exhaust stacks, pipes, boilers, cement kilns), which would otherwise be lost to the atmosphere, and convert that heat energy into electricity. Because WHP systems generate electricity with no additional fuel or combustion, WHP is a "zero emission" energy process. Like wind and solar energy, waste heat energy is a resource we already have – all we need to do is capture it.

WHP systems capture waste heat and waste energy from a variety of sources and generate electricity using a variety of technologies, such as steam cycle, organic Rankine cycle, nano-antenna technology, Supercritical CO<sub>2</sub> cycle, thermoelectric materials, Kalina cycle and Stirling engine. Systems vary from small modular designs that can be easily installed and then operated and monitored remotely, to custom configurations that can generate more than 100 MW from high volume, higher temperature waste heat streams. Industries with the greatest potential to generate power from waste heat include: petroleum



(refineries, pipelines, compressor stations, gas processing), chemicals, metals, minerals, paper, wood, and general manufacturing.

Despite the fact that WHP is an innovative, zero-emission energy resource, the conversion of waste heat to electricity currently does not qualify for any Section 45 or 48 tax incentive. Anecdotally and based on legislative records, when Congress created the ITC for combined heat and power (CHP) in the Emergency Economic Stabilization Act of 2008 (P.L. 110-343), the legislative intent was to include WHP. However, WHP cannot qualify for the ITC due to the way Sec. 45 defines a qualifying CHP resource. The IRS has advised the WHP industry that only a legislative clarification will resolve WHP's eligibility.

Wasting heat energy is wasting an opportunity for American businesses. WHP is a highly reliable, resilient energy resource for American businesses, as well as our critical infrastructure. But it is exceedingly difficult to develop this clean, reliable domestic source of energy without parity in the tax code. The WHP industry has not been able to penetrate the U.S. market where capital investment flows to technologies and approaches that receive tax credits. The US Department of Energy has estimated that there are 15 GW of potential waste heat to power projects in the US, but less than 10% of this potential has been realized to date. In contrast, Europe and Asia are reaping the many benefits of WHP. While the U.S. has just 96 WHP installations nationwide, in 2017 China's cement industry alone had 739 WHP systems, helping the nation's cement manufacturing sector produce more value with less energy while cutting emissions.

WHP technologies can improve the economics for American businesses, but to do so WHP technologies need to be put on par under the tax code with other clean and innovative energy technologies. This can be achieved at a small cost. In 2017, the Joint Tax Committee estimated that the incremental costs of the WHP provision in S. 1409 would cost just \$60 million over 10 years.

We thank you in advance for your recognition of this oversight in the tax code and look forward to working with you to ensure that WHP can bring value to the American industrial, commercial and institutional sectors.

Please contact our Executive Director Pat Sharkey ([pat@heatispower.org](mailto:pat@heatispower.org)) with any questions or to discuss this proposal further.

Sincerely,

John Prunkl

Chairman, Heat is Power Association



Frank P. Prager  
Vice President  
Policy & Federal Affairs

1800 Larimer Street, Suite 1200  
Denver, CO 80202  
(303)294-2108  
[Frank.Prager@xcelenergy.com](mailto:Frank.Prager@xcelenergy.com)

June 19, 2019

Sent Via Electronic Mail: [Energy\\_Taskforce@finance.senate.gov](mailto:Energy_Taskforce@finance.senate.gov)

Senator John Thune (R-SD), Co-Lead  
Senator Pat Roberts (R-KS)  
Senator John Cornyn (R-TX)  
Senator Bill Cassidy (R-LA)

Senator Debbie Stabenow (D-MI), Co-Lead  
Senator Thomas Carper (D-DE)  
Senator Sheldon Whitehouse (D-RI)  
Senator Maggie Hassan (D-NH)

Dear Senator Thune, Senator Stabenow, and other Members of the Taskforce:

Thank you for the opportunity to submit Xcel Energy's recommendations with respect to temporary energy tax provisions. We applaud your leadership on this important issue.

Xcel Energy is a \$31 billion investor-owned utility (IOU) that provides electric and gas service to millions of residential and business customers across eight Western and Midwestern states. Headquartered in Minneapolis, Xcel Energy invests billions of dollars every year to maintain critical energy infrastructure and to provide our customers with affordable and reliable clean energy.

Temporary tax provisions have had a significant impact on the development of energy resources, especially renewable resources like wind and solar. However, due to the capital-intensive nature of the industry, and because of years of accelerated depreciation, many energy companies currently have federal tax credits that go unused and must be carried forward, which diminishes the value of the incentives. While tax credits can currently be monetized within a tax equity partnership arrangement, this structure is often project-specific and both complex and expensive to implement. We encourage the Senate Finance Committee to consider more efficient ways to monetize energy tax credits than is the case today with tax equity partnerships.

As you and the other Taskforce members consider changes to temporary energy tax provisions, we respectfully submit the following recommendations for your consideration:

**1. Extensions or expansions of energy tax credits should include tax credit transferability.**

As mentioned above, many utilities have already made substantial investments in renewable energy, as encouraged by the enactment of the federal tax credits. At the same time, due to many years of bonus depreciation and with the lowered overall corporate rate, many tax credits have and will continue to be carried forward year after year. Should additional energy tax credits or extensions of the existing energy tax credits be enacted, we believe it is essential to include new monetization tools that are more efficient than tax equity partnerships. In the absence of such provisions, we do not support any extension or expansion of Section 48 or Section 45 energy tax credits.



**American Energy Bonds** – We have advocated for the “American Energy Bonds” concept, which would enable energy tax credit holders to transfer energy credits in lieu of an interest payment on American Energy Bonds that finance new clean energy infrastructure. This approach would provide a new avenue for the transfer of energy tax credits, but is still a narrowly designed exception to the longstanding approach to tax credit use. This concept would allow for more efficient use of existing energy credits in accordance with Congress’s original intent in creating the credits. It would also encourage the accelerated deployment of new energy infrastructure – all without extending or creating new tax credits.

**Renewable Energy Transferability Act** – We also support concepts that allow tax credits to be transferred to a project partner – such as articulated in H.R. 2704, the “Renewable Energy Transferability Act.” This would allow the energy tax credit to be transferred to an entity with an ownership interest in a given project, or to a related project supplier or financier, or to the energy purchaser.

**2. Extensions or expansions of the Section 48 Investment Tax Credit (ITC) for certain energy resources should allow an opt-out of normalization for rate regulated entities.**

Tax credit normalization rules have historically been important to maintaining investment incentives for rate regulated utilities. However, the industry has changed dramatically since the enactment of the normalization statute decades ago. Today, regulated utilities often compete directly with unregulated entities to provide generation resources for customers. With respect to the investment tax credit for solar energy (and as would be the case for the proposed investment tax credit for energy storage projects), these normalization rules can prevent rate regulated utilities from competing on a level playing field with unregulated project developers. Unregulated entities can immediately pass on the full benefit of a substantial 30% ITC in their pricing, while regulated entities must allocate that ITC value to customers over the life of the project. Allowing regulated utilities to opt out of normalization for the solar ITC (or energy storage ITC) would promote greater competition to the benefit of energy customers.

**3. Continued promotion of transportation electrification will help reduce emissions and encourage consumer adoption.**

We are excited about the future for transportation electrification and the potential to fuel vehicles with inexpensive clean energy. The federal tax credit for electric vehicles (EVs) has been critical to early adoption by consumers. With EVs still making up a small fraction of the overall automobile market in the United States, however, we believe it is important to extend the consumer tax credit for the purchase of an electric vehicle. We support S. 1094, the “Driving America Forward Act” (H.R. 2256 in the House), which would adjust the per manufacturer caps on the electric vehicle consumer tax credit.

Thank you for your consideration of our views on this important issue. We are happy to discuss these with you and your staff at any time.

Sincerely,

A handwritten signature in blue ink, appearing to read "Frank P. Prager", followed by a horizontal line.

Frank P. Prager  
VP, Policy & Federal Affairs  
Xcel Energy, Inc.



June 21, 2019

The Honorable John Thune  
Energy Taskforce Co-Lead  
U.S. Senate Committee on Finance  
219 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow  
Energy Taskforce Co-Lead  
U.S. Senate Committee on Finance  
219 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Chuck Grassley  
Chairman  
U.S. Senate Committee on Finance  
219 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Ron Wyden  
Ranking Member  
U.S. Senate Committee on Finance  
219 Dirksen Senate Office Building  
Washington, DC 20510

Dear Senators Thune, Stabenow, Chairman Grassley, and Ranking Member Wyden:

### **Executive Summary**

The Biotechnology Innovation Organization (BIO) supports the following tax incentives being included in any potential tax reform legislation dealing with energy:

- Long-term extension of Biofuel Tax Incentives
- Development of Renewable Chemical Production or Investment Tax Credit
- Extension of Master Limited Partnerships (MLP) to Advanced Biofuel and Renewable Chemicals

### **Introduction**

The Biotechnology Innovation Organization (BIO) thanks the committee for organizing its taskforces to find long-term solutions to temporary tax policy. BIO is the world's largest trade association representing biotechnology companies, academic institutions, state biotechnology centers and related organizations across the United States and in more than 30 other nations. BIO members are involved in the research and development of innovative healthcare, agricultural, and industrial and environmental biotechnology products.

Within its broad membership, BIO's Industrial and Environmental Section member companies are developing new agricultural and low-carbon feedstocks, industrial enzymes, and biological catalysts for the conversion of biomass into advanced biofuels, alternative jet fuels, renewable chemicals, and bio-based products. Utilizing the power of industrial biotechnology, companies across the country are creating a robust bio-based economy. Bio-based production encompasses a complex value chain, from agriculture through the manufacture of consumer goods,



that brings environmental, economic and other benefits. These technologies provide an alternative to the petroleum-based products. The bio-based economy can generate new markets for agricultural producers, boost innovation in domestic manufacturing, stimulate sustainable economic growth, and improve the environment through the reduction of greenhouse gas emissions.

BIO companies are working to secure a sustainable American energy future and reduce our reliance on foreign oil that will bolster agriculture and revitalize domestic energy. In order to do so it is important they have the necessary tools.

Unfortunately, the expiration of tax incentives for advanced and cellulosic biofuels and the lack of parity for renewable chemical and bio-based products puts our industry at a disadvantage to incumbent technologies. Allowing these tax incentives for biofuels to lapse has created uncertainty for investors and the industry about the availability of these credits; jeopardizing the long-term investments necessary for the development of these technologies. To realize the renewable chemical industry's potential for domestic job creation and reduced reliance on foreign oil, Congress must ensure that renewable chemical technologies are incentivized in the tax code, and at a minimum, receive tax parity with incumbent technologies.

Long-term, stable policy will ensure these environmentally friendly technologies will have access to capital to transform our economy to a 21st-century, bio-based economy that will produce clean, affordable energy and create high-quality jobs.

### **Biofuel Tax Incentives**

BIO supports a long-term extension of a suite of critical advanced and cellulosic biofuels tax incentives – the Second Generation Biofuel Producer Tax Credit, the Special Depreciation Allowance for Second Generation Biofuel Plant Property, the Biodiesel and Renewable Diesel Fuels Credit, and the Alternative Fuel Vehicle Refueling Property.

There are great benefits to developing these technologies. Over the past 10 years the biofuels industry has displaced nearly 1.9 billion barrels of foreign oil by replacing fossil fuels with homegrown biofuels. This has saved consumers an average of one dollar a gallon at the pump.

Availability of production tax credits is critical to the companies making significant investments to create new agricultural supply chains, building infrastructure, and developing innovative technologies. Agricultural producers who are facing low commodity prices benefit greatly from the value added from the conversion of agricultural waste into high-value products.

The use of biofuels has also led to a reduction in U.S. transportation-related carbon emissions. A new study released by the U.S. Department of Agriculture (USDA) finds greenhouse gas emissions from corn-based ethanol are about 39 percent lower than gasoline. The study also states that when ethanol is refined at natural gas-powered refineries, the greenhouse gas emissions are even lower, around 43 percent below gasoline. The study projects that with added improvements in

refineries and on farms, a reduction of over 70 percent in lifecycle emissions is possible by 2022.

The development of advanced and cellulosic biofuel technologies which are supported by these tax incentives will achieve even greater emissions reductions. Cellulosic biofuels which are supported by the Second Generation Biofuel Production Tax Credit must meet a 60 percent greenhouse gas reduction when compared to gasoline to qualify as a cellulosic biofuel under the Renewable Fuel Standard (RFS). Already existing cellulosic biofuel technologies are reducing greenhouse gas emissions by as much as 75-90 percent over gasoline. Research done by the U.S. Department of Energy (DOE) Argonne National Laboratory showed that compared to gasoline, biofuel from energy crops can reduce emissions by 101 to 115 percent. Corn stover, a residue from corn, can reduce emissions by 90 to 103 percent.

Advanced biofuels supported by the Biodiesel and Renewable Diesel Fuels Credit must achieve a 50 percent greenhouse gas reduction to qualify for the RFS. The continuation of this credit is particularly important for the development of aviation biofuels, also known as sustainable alternative jet fuels (SAJF). In 2017 the global aviation industry produced 859 million tons of CO<sub>2</sub> accounting for 2 percent of all greenhouse gas emissions. However, the industry has made a commitment to reduce emissions by 50 percent of what they were in 2005 by 2050. To meet this lofty goal airlines and airports throughout the U.S. and across the globe are working to scale up the production and use of SAJF. Just this month United Airlines made history on World Environment Day with the departure of the Flight for the Planet, the eco-friendliest commercial flight of its kind in the history of aviation. Traveling from Chicago O'Hare to Los Angeles this flight utilized SAJF zero cabin waste efforts with bio-based products, carbon offsetting, and operational efficiencies.

However, as a coalition of the aviation industry noted in its April 12, 2019 letter to Chairman Grassley and Ranking Member Wyden the Biodiesel and Renewable Diesel Fuels Credit has been critical to the advancements of this technology. The long-term extension of this credit will provide the industry with the stability necessary to continue investing in technology that will generate economic and environmental benefits with globally significant impacts.

While development of advanced and cellulosic biofuels is a difficult and capital-intensive enterprise, there are great benefits to developing these technologies. However, even with these benefits, this sector needs predictable federal tax policy to continue to attract investment in order to grow and compete with incumbent industries that have long received favorable tax preferences.

### **Renewable Chemical and Bio-based Products Tax Incentive**

Renewable chemicals and bio-based products offer similar economic and environmental opportunities. Companies around the globe are building the bio-based economy as they commercialize renewable chemical processes and bio-based products. According to the U.S. Department of Agriculture, the total economic

impact of U.S. bio-based production grew from \$369 billion in 2013 to \$393 billion in 2014.

Renewable chemicals and bio-based products derived from renewable biomass represent a historic opportunity for revitalization of U.S. chemical manufacturing. The U.S. has the potential to become the world leader in renewable chemicals and bio-based product manufacturing, as we are currently home to most of the world's advanced renewable chemicals technology and intellectual property and have access to a wide range of sustainably produced renewable biomass. An investment in renewable chemicals will pay strong dividends in the future of U.S. chemical manufacturing while advancing the goals of quality domestic job creation and domestic advanced manufacturing, improved trade balance, and maintaining U.S. leadership in clean energy and manufacturing technologies.

The shift to renewable biomass feedstocks from traditional fossil feedstocks increases energy efficiency, reduces costs and reduces reliance on foreign oil. Volatile crude oil prices create an unstable price structure for traditional fossil-based chemicals and related products. Renewable chemicals can be cost competitive and maintain stable pricing, allowing businesses to plan for the long-term and pass savings to consumers. Renewable chemical processes can also prevent pollution before it ever occurs and remediate existing pollution, improving the environment. For example, many renewable chemicals are carbon negative on a lifecycle basis, sequestering atmospheric carbon within the chemical/product itself. The World Wildlife Fund recently concluded that industrial biotechnology has the potential to save up to 2.5 billion tons of carbon dioxide equivalent emissions per year by 2030.

To realize the full potential of the domestic renewable chemicals industry, existing renewable energy, manufacturing, or environmental tax incentive regimes should be opened to renewable chemicals. Renewable chemicals and bio-based plastics represent an important technology platform for reducing reliance on petroleum, creating U.S. jobs, increasing energy security, and reducing greenhouse gas emissions. By providing a federal income tax credit for domestically produced renewable chemicals, Congress can create domestic jobs and other economic activity and can help secure America's leadership in the important arena of green chemistry. Like current law for renewable electricity production credits, the credits would be general business credits available for a limited period per facility. Industrial biotechnology enables the production of renewable chemicals and bio-based products from biomass, and the total displacement of fossil fuel products can be accelerated with an investment or production tax credit. Introduced in the 115<sup>th</sup> Congress by Senator Debbie Stabenow (D-MI) in the Senate and Representatives Bill Pascrell (D-NJ) in the House of Representatives and, the bipartisan Renewable Chemicals Act, S. 1980/H.R. 3149, offers a strong model for implementation of this proposal.

## **Extension of Master Limited Partnerships (MLP) to Advanced Biofuel and Renewable Chemicals**

Sectors of the fossil energy industry can benefit from using the advantages of a publicly traded Master Limited Partnerships (MLP). The renewable chemicals industry and the renewable energy sector (including advanced biofuels companies) cannot. The publicly traded MLP structure reduces a company's tax burden, enables access to capital at lower cost, and increases liquidity. Access to capital is critical to the success of emerging industries, particularly as they develop their infrastructure. BIO supports legislation to allow the advanced biofuels and renewable chemical sectors to be able to operate as publicly traded MLPs. This would provide parity and level the playing field among the different industry sectors. Recently introduced by Senators Chris Coons (D-DE) and Jerry Moran (R-KS) and Representatives Mike Thompson (D-CA) and Ron Estes (R-KS) the Financing Our Energy Future Act S. 1841/H.R. 3249 offers a strong model for implementation of this proposal.

### **Conclusion**

BIO supports the efforts underway to provide long-term certainty in the U.S. tax code, particularly as it applies to innovative sectors such as advanced biofuels, renewable chemicals and bio-based products. To revive the manufacturing sector, stimulate job creation, provide value-added markets for agricultural producers, and truly achieve energy security, the U.S. must develop biorefineries that produce alternatives to all the products made from each barrel of oil. The provisions above are essential ingredients in any effort to accelerate the commercialization of advanced biofuels, renewable chemicals and bio-based products. We ask that you include these provisions in any energy, advanced manufacturing, or environmental tax package. Thank you for your consideration of our proposals.

Best regards,



Stephanie Batchelor

Vice President  
Industrial and Environmental Section  
Biotechnology Innovation Organization (BIO)

June 21, 2019

The Honorable John Thune  
U.S. Senate Committee on Finance  
511 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Debbie Stabenow  
U.S. Senate Committee on Finance  
731 Hart Senate Office Building  
Washington, D.C. 20510

**RE: Comments to the Energy Tax Policy Task Force of the Senate Finance Committee**

Dear Senator Thune and Senator Stabenow,

As the Senate Finance Committee reviews energy provisions in the Internal Revenue Code, we strongly recommend that any current or future energy investment tax credits include standalone energy storage as an eligible technology. There is bipartisan, bicameral support for this common-sense measure, as exemplified in the *Energy Storage Tax Incentive and Deployment Act* (S. 1142 & H.R. 2096), which would ensure a level playing field for energy storage with all other energy resources eligible for the ITC. We respectfully request the opportunity to share our views with you in an in-person meeting.

*Who is the Energy Storage Association (ESA)?*

ESA is the national trade association working toward a more resilient, efficient, sustainable and affordable electricity grid enabled by energy storage technologies. With more than 170 member companies, ESA represents a diverse group of power sector stakeholders, including independent power producers, electric utilities, energy service companies, financiers, insurers, law firms, installers, manufacturers, component suppliers and integrators involved in deploying energy storage systems, both nationwide and around the globe.

*What is energy storage?*

Energy storage systems are critical to modernization of the electric grid and help any generation resource connected to the grid – coal, gas, nuclear, wind, solar, hydro – become more efficient, productive, and competitive. Energy storage is increasingly being deployed as backup power for buildings and in the electric grid, helping businesses and the grid become more resilient to hurricanes and other disasters. Moreover, energy storage is integrating much higher levels of renewable energy and enabling the power grid to adapt to increasing electrification of the transportation sector.

Whether working in batteries, pumped hydro storage, electric thermal storage, mechanical storage, power-to-gas storage, or other technologies, companies in the U.S. energy storage industry employ over 70,000 people,<sup>1</sup> with significant room to grow. Moreover, a variety of next-generation storage technologies are in development, with a variety of entrepreneurs and

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<sup>1</sup> See NASEO & EFI, *2019 U.S. Energy and Employment Report*, available at <https://www.usenergyjobs.org/>

small- and medium-sized companies seeking to enter markets for storage in coming years.

Energy storage systems have been identified by Administration officials as a game-changing new tool for a more resilient electric system. The critical importance of energy storage has been emphasized by Secretary of Energy Rick Perry,<sup>2</sup> as well as by Federal Energy Regulatory Commission Chairman Neil Chatterjee.<sup>3</sup> Members of Congress have reached the same conclusion, including Chairman Lisa Murkowski in hearings of the Senate Energy and Natural Resources Committee,<sup>4</sup> as did members of the Energy Subcommittee of the House Energy & Commerce Committee.<sup>5</sup> The National Governors Association also has touted the economic and security gains achieved by increased use of battery energy storage systems.<sup>6</sup>

The Department of Energy has identified electric grid resilience as a priority,<sup>7</sup> with officials citing energy storage as the newest tool for electric utilities and their customers to achieve greater energy security and resilience.<sup>8</sup> Not only is storage directly installed on the U.S. electric

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<sup>2</sup> “The holy grail of energy ... is about battery storage. Battery storage changes the world, I would suggest, the same way that hydraulic fracturing and directional drilling has changed the world.” See “US DOE's Perry sees storage as potential 'Holy Grail', sings fossil fuels' praises,” *Platts*, 2 Nov 2017, available at <https://www.platts.com/latest-news/electric-power/washington/us-does-perry-sees-storage-as-potential-holy-21437709>

<sup>3</sup> “I believe in the potential of storage to be a transformative technology for our grid. Storage is a game changer. I see exciting potential to lower costs and enhance reliability for customers.” See “Heinrich, Chatterjee, Speakes-Backman discuss future of energy storage,” *Daily Energy Insider*, 28 Feb 2019, available at <https://dailyenergyinsider.com/news/17905-heinrich-chatterjee-speakes-backman-discuss-future-of-energy-storage/>

<sup>4</sup> “Energy storage resources present a win-win opportunity to make the grid cleaner, more resilient, and more affordable. By storing power when it is cheapest and dispatching it during peak demand periods when power is most expensive, energy storage can significantly lower consumers’ power bills. It can also help avoid or defer the need to build out additional electric generation, transmission, and distribution infrastructure.” See U.S. Senate Energy & Natural Resource Committee hearing, “Full Committee Hearing to Examine Expanded Deployment of Grid-Scale Energy Storage,” 4 June 2019, available at <https://www.energy.senate.gov/public/index.cfm/hearings-and-business-meetings?ID=83B728AC-6708-40D6-9B96-CC007F5B5906>

<sup>5</sup> See hearing materials transcript of U.S. House of Representatives Energy & Commerce Committee hearing, “Powering America: The Role of Energy Storage in the Nation’s Electricity System,” 18 July 2018, available at <https://energycommerce.house.gov/hearings/powering-america-the-role-of-energy-storage-in-the-nations-electricity-system/>

<sup>6</sup> National Governors Association, *State Strategies for Advancing the Use of Energy Storage*, October 2016, available at <https://www.nga.org/files/live/sites/NGA/files/pdf/2016/1610StateStrategiesEnergyStorage.pdf>

<sup>7</sup> See Department of Energy, “Staff Report to the Secretary on Electricity Markets and Reliability,” Aug 2017, available at <https://www.energy.gov/downloads/download-staff-report-secretary-electricity-markets-and-reliability>.

<sup>8</sup> “You've heard the secretary [Rick Perry] reference storage as the ‘holy grail,’ and we believe that. It’s about having storage capability during times of emergency, during times of crisis, even during normal course of business when you are running peak load. It’s really just to provide another tool in the toolbox that improves our capacity as

grid and integrated into power plants, but also sited at critical infrastructure, Department of Defense installations, industrial facilities, and commercial & residential buildings to ensure greater resilience to electric service disruptions—an issue of particular concern as more and more businesses rely on electricity and computerized systems to function.

#### *Why establish a tax credit for energy storage?*

According to IRS guidance, energy storage only qualifies for the Section 48 and 25D ITC when integrated with ITC-eligible resources such as solar power under a narrow set of conditions and subject to recapture risks. Without clear statutory rules, these conditions create tremendous uncertainty for investors about the eligibility of energy storage equipment in various operations with ITC-eligible resources. Additionally, energy storage equipment provides the same services whether or not it is integrated with ITC-eligible resources, although ITC eligibility for standalone systems is not clear. As a result, deployments of energy storage are inefficiently limited to specific locations and technical configurations, constrained from optimal use for the electric system.

For those reasons, a broad range of stakeholders support an ITC that allows storage to qualify as a standalone technology (please see the letter attached to this submission). The bipartisan, bicameral *Energy Storage Tax Incentive and Deployment Act* (S. 1142 & H.R. 2096) would accomplish this under the existing energy tax framework. Additionally, there is also bipartisan, bicameral agreement that inclusion of a tax credit for energy storage is warranted in a longer-term, non-expiring energy tax framework. Examples include the *Financing Our Energy Future Act* (S. 1841); the *Clean Energy for America Act* (S. 1288); and the *Energy Sector Innovation Credit Act* (H.R. 7196 (115<sup>th</sup>)).

ITC eligibility for storage as a standalone asset will accelerate its deployment where most needed in the electric system. By untying storage from specific generation sources and configurations, a clear ITC for standalone storage will drive utilization of storage for its most valuable services and locations. This is particularly true for critical uses of energy storage that are not easily compensated via markets, such as grid infrastructure enhancement, disaster preparedness, and resilience. Additionally, ITC eligibility for storage will ensure all other generation technologies, not just solar power, can benefit equally from integrating it into their systems.

Clear ITC eligibility for storage would allow a diversity of U.S. companies to better obtain financing, scale, create jobs, and become more competitive internationally in the fast-growing global storage market. Clarification of the ITC for energy storage would provide greater certainty to investors and businesses, who can then design projects and operate assets without tax code ambiguity and potential for recapture. All storage technologies—batteries, pumped

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an industry to operate during blue sky days and black sky days.” See “Trump administration: Energy storage boosts renewables, national security,” *Washington Examiner*, 12 June 2019, available at <https://www.washingtonexaminer.com/policy/energy/daily-on-energy-trump-administration-sees-energy-storage-as-a-national-security-tool>

hydro, compressed air, thermal, and others—would be eligible for the ITC, ensuring technology neutrality so companies can choose the optimal solution to meet their needs.

Additionally, with many other energy technologies availing an ITC, allowing energy storage access to an ITC is critical to ensure a level playing field across all energy technologies. Given policymakers' recognition of the transformative impact of energy storage on the electric system, its exclusion from energy tax credits as a standalone asset is a significant oversight that will unduly bias against energy storage for power system efficiency, reliability, and resilience.

We encourage you to support capital formation, investment, and jobs in making America's power system more reliable, resilient, and cost-effective with energy storage. We ask you to include standalone energy storage in the ITC and would welcome the opportunity to meet with you and other members of the Task Force to share our perspective in person on including energy storage in an energy tax framework.

Sincerely,

A handwritten signature in black ink, appearing to read 'JB', with a stylized flourish extending to the right.

Jason Burwen  
Vice President of Policy  
Energy Storage Association

CC: Senator Pat Roberts (R-KS)  
Senator John Cornyn (R-TX)  
Senator Bill Cassidy (R-LA)  
Senator Thomas Carper (D-DE)  
Senator Maggie Hassan (D-NH)  
Senator Sheldon Whitehouse (D-RI)





April 15, 2019

The Honorable Mitch McConnell  
Majority Leader  
U.S. Senate

The Honorable Chuck Schumer  
Minority Leader  
U.S. Senate

The Honorable Chuck Grassley  
Chairman, Committee on Finance  
U.S. Senate

The Honorable Ron Wyden  
Ranking Member, Committee on Finance  
U.S. Senate

Dear Leader McConnell, Leader Schumer, Chair Grassley, and Ranking Member Wyden,

As you and your colleagues consider energy tax extenders legislation, we urge you to include the bipartisan *Energy Storage Tax Incentive and Deployment Act* (S. 1142), which would ensure a level playing field for energy storage as a standalone asset to compete with all other energy resources made eligible for Section 48 & 25D investment tax credits ("ITC").

S. 1142 would resolve the uncertainty facing companies who seek to utilize the ITC for energy storage, spurring greater investment and creating jobs while extending the benefits of energy storage deployment among a wider diversity of technologies and industries. Those deployments in turn will accelerate the transition to clean energy and position the U.S. as a global leader in energy storage technology.

We encourage you to support U.S. companies' investment and jobs in making America's power system more resilient, efficient, sustainable and affordable with energy storage. As you and your colleagues consider energy tax extenders legislation, inclusion of ITC eligibility for energy storage is among the nearest-term opportunities to advance clean energy in this Congress.

Sincerely,

Advanced Energy Economy (AEE)  
American Council on Renewable Energy (ACORE)  
American Wind Energy Association (AWEA)  
ClearPath Action  
Citizens for Responsible Energy Solutions (CRES)  
Energy Storage Association (ESA)  
National Electrical Manufacturers Association (NEMA)  
National Hydropower Association (NHA)  
Solar Energy Industries Association (SEIA)  
Sheet Metal and AC Contractors National Association (SMACNA)  
California Energy Storage Alliance (CESA)  
New York Battery and Energy Storage Technology Consortium (NY-BEST)

## Energy Storage Tax Incentive and Deployment Act of 2019

### Senators Heinrich and Gardner (S. 1142) / Representatives Doyle, Buchanan, and Blumenauer (H.R. 2096)

#### Summary

- Under current law, energy storage only qualifies for the investment tax credit (ITC) when integrated with ITC-eligible solar resources under a narrow set of conditions and subject to recapture risks, creating tremendous uncertainty for investors.
- S. 1142 / H.R. 2096 modifies the existing ITC for numerous energy technologies to clarify eligibility of energy storage technologies (e.g., grid batteries, pumped hydro, etc.)

#### Background

- Energy storage technologies—grid batteries, pumped hydropower, compressed air, thermal storage, etc.—are uniquely flexible resources that modernize the electric system to be more efficient, resilient, and adaptable to any mix of electric supply resources. Over 70,000 people are employed in the U.S. energy storage industry.
- Numerous energy technologies—fuel cells, solar power, microturbines, combined heat and power, etc.—can access the ITC. Some of these technologies are competitors to energy storage. The narrow application of energy storage allowed by IRS rules prevents non-ITC-eligible resources (such as wind and natural gas) from deriving the same investment benefit as solar power.
- Clarifying eligibility of the ITC for energy storage will create a level playing field across electric grid technologies, improve business certainty, and allow energy storage to pair with any type of generation asset. Doing so will enhance grid efficiency and resilience while creating more jobs and capital formation.

#### Bill Details

##### **Business Energy Investment Credit for Energy Storage (Sec. 48)**

For commercial applications, the bill makes energy storage eligible for the tax incentive in section 48 of the IRS code. All energy storage technologies would qualify, including batteries, flywheels, pumped hydro, thermal storage, compressed air, etc. To qualify for the ITC, the system must have a storage capacity of at least 5 kilowatt-hours. The credit allowed is the same as currently available for fuel cells, solar energy, microturbines, combined heat and power, and geothermal heat pumps, including the phase down as shown in the table below. The IRS currently allows an ITC for energy storage when it is installed in conjunction with a solar energy system under specific conditions, although these conditions restrict storage operations and present recapture risks. The bill would extend the ITC for any energy storage project in all applications, including consumer-owned, grid-connected, or off-grid, as well as paired with any generating resources, such as gas or wind. As shown in the table below, the Section 48 ITC phases down and then remains at a lower level from the beginning of 2022.

##### **Residential Energy Property Tax Credit for Energy Storage (Sec. 25D)**

For residential applications, the bill provides homeowners the same credit as currently available for solar energy in section 25D. Only battery storage is eligible for the residential ITC, and the system must have a storage capacity of at least 3 kilowatt-hours. As shown in the table below, the Section 25D ITC phases out fully at the beginning of 2022.

**ITC Phase Out Schedule**

Application	Tax-Year Ending				
	12/31/19	12/31/20	12/31/21	12/31/22	Subsequent tax years
Business Investment Energy Storage Section 48	30%	26%	22%	10%	10%
Homeowner Residential Battery Storage Section 25D	30%	26%	22%	n/a	n/a

#### **Joint Committee on Taxation Score**

In the 115<sup>th</sup> Congress, JCT estimated that storage eligibility for the ITC would create a tax expenditure of ~\$300MM over 10 years.

Item	Not a factor in current bill		Fiscal Years [Millions of Dollars]				
	2018	2019	2020	2021	2022	2018-22	2018-27
Section 48.....	-12	-30	-40	-43	-35	-160	-259
Section 25D.....	-1	-5	-10	-13	-13	-42	-51

June 21, 2019

The Honorable John Thune  
Co-Lead, Senate Energy Tax Task Force  
U.S. Senate Committee on Finance  
Washington, D.C. 20510

The Honorable Debbie Stabenow  
Co-Lead, Senate Energy Tax Task Force  
U.S. Senate Committee on Finance  
Washington, D.C. 20510

Dear Senators Thune and Stabenow,

Thank you for providing this opportunity to submit a written comment on the Senate Finance Committee's taxation agenda for the 116<sup>th</sup> Congress. On behalf of its more than three million members and activists, the Natural Resources Defense Council (NRDC) urges Congress to extend and modify tax credits for clean energy and energy efficiency as soon as possible. From power generation to building retrofits to clean transportation, these tax credits drive significant investments at a low cost to the taxpayer. Unfortunately, many of these tax credits are outdated or have been expired since 2017.

Given the urgency and scale of transformation needed to address climate change and rapidly decarbonize our economy, it is crucial that Congress provide long-term extensions for these tax credits to accelerate clean energy deployment immediately. One of Congress's top priorities during this session must be to provide tax credits that make the greatest impact toward meeting our nation's climate change goals and commitments.

Actions Congress can take to incentivize energy efficiency in buildings include:

- Extending **Sec. 179D for energy efficient commercial and multifamily buildings** which incentivizes retrofits to existing commercial and residential buildings, and has been expired since 2017;
- Modifying **Sec. 45L for energy efficient new homes** which no longer functions as designed because of changing market conditions. When the credit was enacted in 2005, less than 1 percent of new homes met the qualification levels. However, the credit is now outdated. In some states the minimum code requirement is equivalent to the tax credit criteria, thus ensuring 100 percent free ridership in those areas. NRDC supports restructuring the 45L tax credit that provides a credit for builders of homes based on energy rating indices while establishing rules of fairness to prevent destructive competition between efficiency and renewables and to prevent double dipping with existing renewables tax credits;

- Modifying **Sec. 25C for nonbusiness energy property** improvements to provide a whole-building-based tax credit for energy savings of 20 percent or more, on a sliding scale. Projected savings would have to be verified by a third-party rating. As it is currently designed, 25C is very costly has mostly gone for windows that would have been installed without the tax credit anyway.

Actions Congress can take to accelerate renewable energy deployment include:

- Extending **Secs. 45 and 48(a)(5) for energy produced from certain renewable resources** such as closed-loop biomass, geothermal facilities, small irrigation power, municipal solid waste, marine/hydrokinetic, and certain hydropower facilities;
- Modifying **Sec. 48(a)(3) to include energy storage equipment** which receives, stores, and delivers energy using new and existing technologies.
- Modifying **Sec. 48 for qualifying advanced energy projects** to acknowledge the difference between onshore and offshore wind, which are on vastly different deployment and cost curves. Decoupling offshore and onshore wind will allow the credit for offshore wind to be fully utilized and unlock 4.2 terawatts in potential pollution-cutting, domestic, reliable energy.

Actions Congress can take to address transportation sector emissions, which are the largest source of emissions in the United States include:

- Extending **Sec. 30B for alternative motor vehicles, Sec. 30C for alternative fuel vehicle refueling property, and Sec. 30D for qualified plug-in electric motor vehicles.**

These tax extenders and modifications help Americans save money, reduce climate-warming emissions, and create jobs. In 2018, clean energy jobs outnumbered fossil fuels jobs nearly three to one (3.26M to 1.17M) and clean energy employers said they anticipate 6 percent job growth for 2019. This positive outlook rests on the assumption that Congress will extend the tax incentives that drive investment to these sectors.

Beyond the short-term goal of simply extending these provisions listed above, we strongly encourage Congress to consider other long-term solutions for incentivizing clean energy investment and deployment. This could include extensions of the Wind Production Tax Credit (PTC) and the Solar Investment Tax Credit (ITC) beyond their current sunsets coming very soon and allowing transferability between the Wind PTC and ITC. Congress should also explore creative and new energy tax incentive structures designed to be more technology-neutral and based on emissions targets rather than calendar years, which is a rather arbitrary way to measure tax outcomes anyway.

Finally and importantly, clean energy and energy efficiency lessens our nation's reliance on fossil fuels, which receive billions more in tax subsidies than clean energy. The Joint Committee on Taxation offers two broad rationales for tax policy intervention in the energy market—energy independence and addressing pollution. The policies listed above accomplish both. After over a century of subsidies, the United States fossil fuel industry remains one the worst polluting sectors in the economy, and we still rely on it heavily. We urge Congress to finally rectify these longstanding market distortions and the catastrophic environmental externalities created by them by providing long-term, consistent investments in energy efficiency, clean vehicles, and renewable energy as soon as possible.

Once again, we believe that the goal of our energy tax policy is a simple one: promote clean energy that advances our national interest by reducing dependence on the dirty energy sources of the past. To do that, we must double down on the nation's investment in clean energy, while ending antiquated policies that promote the very pollution we must end to ensure the health of our children's future.

Thank you for your consideration. For more information on any of these subjects please contact Marc Boom ( [mboom@nrdc.org](mailto:mboom@nrdc.org) ) or Dan West ( [dwest@nrdc.org](mailto:dwest@nrdc.org) ).

Sincerely,

John Bowman  
Managing Director, Government Affairs  
Natural Resources Defense Council

CC: Chairman Grassley, Ranking Member Wyden, and Members of the Senate Finance Committee Energy Tax Task Force (Sens. Roberts, Carper, Cornyn, Whitehouse, Cassidy, and Hassan)

## **AFTC Extension: Comments for Senate Energy Task Force**

Dear Senators Thune, Cassidy, Cornyn, Roberts, Stabenow, Carper, Hassan, and Whitehouse:

Thank you for the opportunity to provide stakeholder input as it relates to your work on the Finance Committee's energy temporary tax policy task force. The organizations below and entities they represent contact you in regard to the **Alternative Fuels Tax Credit, (26 USC 6426(d)(5)) and 26 USC 6427(e)(6)(C))**. We applaud your efforts to consider the merit of these temporary tax provisions and to provide industry, investors, and fuel users with more predictability.

### **Provision for Consideration**

The Alternative Fuels Tax Credit (AFTC) is a \$0.50/gallon excise tax credit on alternative fuel used as motor fuel, including compressed, liquefied, and renewable natural gas (CNG, LNG, RNG), liquefied petroleum gas (including propane), P Series Fuels, liquefied hydrogen, liquid fuel derived from coal through the Fischer-Tropsch process, compressed or liquefied gas derived from biomass. Such term does not include ethanol, methanol, biodiesel, or any fuel (including lignin, wood residues, or spent pulping liquors) derived from the production of paper or pulp. Please note that this does not include the Alternative Fuel Mixture Credit, for reasons detailed below.

### **Name of Organization**

This submission is being managed by NGVAmerica, which serves as industry lead for the multifuel stakeholder coalition in support of extending the AFTC. The coalition represents all stakeholders supportive of extending the AFTC including the National Propane Gas Association, the American Public Gas Association, and the Hydrogen Fuel Cell and Energy Association. Additionally, please find attached in supplemental materials an "All Parties" letter, with over 650 companies and organizations nationwide that have signed on in support of an immediate extension of the AFTC as soon as possible. During the March 12 Ways and Means Select Revenue Measures Subcommittee on Temporary Policy in the Tax Code, Congressman John Larson (D-CT) entered a copy of this letter into the hearing record.

### **Geographic Footprint of Organization**

Stakeholders supporting an extension of the AFTC are in each state and each Congressional district in the country, including 170+ members of NGVAmerica, 2,600+ members of the National Propane Gas Association, 750+ members of the American Public Gas Association, 40 members of the Fuel Cell and Hydrogen Energy Association, and Transportation Energy Partners, which represents the nation's 90 local and regional Clean Cities Coalitions and their 13,000 stakeholders; according to the Department of Energy, nearly 270 million people (83% of the total U.S. population) live inside the boundaries of the Clean Cities Coalitions.

Further, there are over 140 transit fleets running on alternative fuels<sup>1</sup>, over 850 school districts utilizing propane and over 5,500 natural gas school buses operating in the U.S., both of which are alternative fuels covered in the AFTC.

The geographic impact of the credit itself, however, is nationwide. With domestic manufacturing of vehicles, engines, fuel storage systems, and fueling infrastructure, the alternative fuels market impacts hundreds of local economies directly through high paying jobs in engineering and manufacturing as well as in service, maintenance, and related fuel sales.

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<sup>1</sup> Analysis of 2017 National Transit Database- natural gas and propane counted  
<https://www.apta.com/research-technical-resources/transit-statistics/ntd-data-tables/>

Additionally, with credit-eligible alternative fuels being produced in the United States, the geographic footprint of the credit extends to everywhere that geologic natural gas is extracted, everywhere propane is produced, and everywhere that renewable natural gas is produced. There are 34 natural gas producing states<sup>2</sup>, including Alaska, Alabama, Arizona, Arkansas, California, Colorado, Florida, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, and Wyoming.

Additionally, propane is a clean and efficient alternative fuel that has a vast geographic footprint. Propane is primarily a byproduct of domestic natural gas production, though some propane is produced from crude oil refinement. U.S. propane supplies are becoming increasingly abundant due in large part to increased supplies of natural gas. In 2018, over 27 billion gallons of propane were produced domestically.

Renewable Natural Gas (RNG) is currently produced in all 50 states, Puerto Rico and the Virgin Islands, at 619 operational landfill gas projects and municipal solid waste landfills.<sup>3</sup> The EPA Landfill Methane Outreach Program has identified 480 additional candidates for landfill gas projects in all 50 states, Puerto Rico and the Virgin Islands.<sup>4</sup> There are 248 operational livestock RNG projects active in 36 states, 34 sites under construction, and 265 candidates for livestock anaerobic digester projects nationwide.<sup>5</sup>

Finally, communities nationwide benefit from further deployment of alternative fuel vehicles due to the tremendous reduction in smog-precursor emissions, transportation-related greenhouse gas emissions, and harmful criteria pollutants they provide.

**Position on short-term and/or permanent extension of provision, or whether it should be left to expire permanently**

The AFTC Coalition supports extension of the AFTC. We urge the Congress to adopt an extension covering 2018 and 2019 as soon as possible, and also adopt a multi-year, prospective extension. It is crucial that the extension of the AFTC have a timeline and payment rate that provide parity with other, competing transportation fuels eligible for other federal tax credits. The AFTC Coalition has developed a phasedown proposal for a longer-term extension of the credit. The timeline of the phasedown and the amount of the credit take into consideration federal subsidies for aforementioned competing fuels as well as other market-related considerations. Based on proposed forward-looking phasedowns for competing fuels we would recommend an extension and phasedown as follows:

- Extend 2018 and 2019 as soon as possible
- Extend the AFTC prospectively for five years at the full \$0.50/gallon (2020, 2021, 2022, 2023, 2024)
- Phase down the AFTC for two years at \$0.25/gallon (2025, 2026)

We support this phase down but do not wish to see the AFTC ended permanently in 2026 if other competing fuel and vehicle types continue to receive tax relief in the form of other tax credits. The

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<sup>2</sup> [https://www.eia.gov/dnav/ng/ng\\_prod\\_sum\\_a\\_EPG0\\_FPD\\_mmcfa.htm](https://www.eia.gov/dnav/ng/ng_prod_sum_a_EPG0_FPD_mmcfa.htm)

<sup>3</sup> <https://www.epa.gov/lmop/project-and-landfill-data-state>

<sup>4</sup> <https://www.epa.gov/lmop/project-and-landfill-data-state>

<sup>5</sup> <https://www.epa.gov/sites/production/files/2019-03/documents/overview-rng-policy-impact-on-rng-production.pdf>

primary need for this credit is to ensure parity in the fuel and vehicles market, to ensure that fleets considering making the transition to alternative fuels are able to make a business case for such an investment, and to continue to provide geopolitical, economic, and environmental benefits from alternative fuel use.

We believe that with a longer, prospective extension of the credit, more fleets will find themselves in a position where they are able to consider utilizing alternative fuels.

### **Economic Justification for the Request**

The AFTC is the most crucial means by which fleets can make the economic case for investing in new, cleaner vehicles despite their incrementally higher prices. There are many policy justifications for choosing to invest in cleaner alternative fuel vehicles, which will be laid out more thoroughly below, but there are several reasons why this credit is needed in order to make the economic justification for a transition to cleaner alternative fuels, including the need for the AFTC extension timeline laid out above and related economic benefits from an extension of the AFTC.

### **Economic Justification: Need for a Long-Term Extension**

The AFTC was first enacted in 2005 (as part of The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (PL 109–59, § 11113, 26 USC § 6426, § 6427), at a point when NGVs paid into the to the Highway Trust Fund for over a decade and eligible fuels were viewed as emerging alternative fuel technologies. The credit was put in place as a mechanism to get vehicles of all duty weights to transition to alternative fuels for a variety of worthwhile policy reasons detailed below. This credit performs as intended when given a sufficient prospective extension. Since enactment of the credit, we have seen increased deployment in alternative fuel vehicle technology, improved efficiency and reliability of alternative fuel vehicles, advancements in on-board fuel storage, fueling infrastructure components, and higher horsepower engines. Technology has matured, is reliable, and utilizes American manufacturing. Unfortunately, due to the short-term nature of the AFTC, fleets interested in purchasing newer, more expensive technology have not been able to plan for long-term investments or make purchase decisions with the ability to account for financial benefits from the credit. As such, NGVs and other eligible fuels have not reached market penetration and continue to need the credit as a way of offsetting increased incremental cost of newer alternative fuel technologies.

In the case of NGVs, the near-term prospects for natural gas are best in high-fuel use applications where the pay-back or return on investment is most economical. High-fuel use applications can include pickup trucks and vans operated by commercial businesses as well as larger trucks operated by shippers and carriers. Natural gas holds the potential to vastly change the freight transport and heavy-duty transportation market. Truckers are not just interested in today's low natural gas prices but also are interested in the prospect of price stability and the long-term outlook for locking in lower fuel prices with natural gas. Truckers also appreciate the quieter operation of natural gas trucks, no more diesel fumes saturating their clothes, and reduced NOx emissions. Noise reduction is a benefit of increasing importance as more medium and heavy-duty vehicles are deployed in residential areas for delivery and waste hauling. For many applications, however, the incremental cost of natural gas vehicles is currently too high, even with the lower fuel price, because these applications simply do not use enough fuel to provide a return on investment in the necessary time period (often 2 -3 years for many fleets). Providing incentives for natural gas fuel sales will make it more economically attractive to a larger percentage businesses and vehicle operators. As the natural gas industry grows and larger numbers of vehicles are produced, the first-cost or incremental cost of natural gas vehicles will come down because of economies of scale and



competition. That process would be greatly accelerated by extending tax incentives and removing tax barriers that currently impede the growth of natural gas vehicle use.

When making a purchase decision, fleets consider fixed costs, running costs, fuel costs, maintenance costs, and other considerations, including their payback period. There remains a significant incremental cost on alternative fuel vehicles when compared to standard diesel vehicles. In fact, DOE has identified the desire to obtain an ambitious price reduction of \$40,000 or more<sup>6</sup> in order to spur more deployment, for the case of natural gas vehicles.

Additionally, diesel prices directly impact the ability of fleets to make a profitability case for switching to CNG: “Diesel prices are a powerful indicator of profitability given that natural gas prices are relatively consistent. A school bus project appears to only make economic sense once diesel prices approach \$4/gallon for 100-bus fleets and \$5/gallon for 50-bus fleets. For transit and refuse fleets, the size and fleet type become increasingly irrelevant as the price of diesel increases past \$2.50. For prices below \$2.50, larger fleets are favored, and refuse fleets are favored over transit.”<sup>7</sup>

Additionally, a study conducted by the National Renewable Energy Laboratory (NREL) concluded: “As illustrated throughout this report, the economic environment for any particular fleet brought about by subsidies and tax credits can have a tremendous impact on project profitability, especially those projects that involve vehicle and fuel purchasing. Significant synergies result when tax credits are used in combination. When combined, the tax credits for station cost, vehicle purchase, and fuel purchase result in payback periods shorter than 4 years for each fleet [considered with VICE 2.0]. Unfortunately, no federal credits are currently available.”<sup>8</sup>

An additional example of ways the AFTC creates a clear economic benefit is by incentivizing school districts to replace their current diesel bus fleets with clean propane buses. While a new propane bus costs approximately \$5,000 more than a new diesel bus. That incremental cost remains a barrier to further propane bus deployment, but once the initial investment is made, school districts realize fuel cost savings in the long run, leading to significant savings down the road. After recovering the incremental cost increase of adopting a propane bus, those savings go back to school districts, which they can then in turn use to fund facilities, teacher pay, and other necessary investments. The AFTC provides the necessary incentive to consumers to help offset the initial cost and makes the undeniable economic case for the adoption of alternative fuels like propane.

The proposal to reinstate the AFTC for five years with a two-year phase down provides the necessary time horizon for businesses to deploy the necessary capital to advance the market for alternative fuels. For investors to be willing to risk investing capital in operations or projects related to alternative fuels and alternative fueled vehicles, an extension of 3 years does not provide ample time for planning and investment.

Utilization of alternative fuels requires rethinking of our national fueling infrastructure, which, for fuels able to utilize the AFTC, has largely been done with private capital rather than government grants. Building out a national fueling infrastructure to support alternative fuels is a daunting task

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<sup>6</sup> Natural Gas as a Transportation Fuel – A Strategic Opportunity for U.S. Energy Security Enabled by Innovation and Advanced Technology. Presentation Office of Energy Efficiency & Renewable Energy U.S. Department of Energy at 2018 NGV America Annual Meeting and Industry Summit.

<sup>7</sup> <https://www.nrel.gov/docs/fy10osti/47919.pdf>

<sup>8</sup> <https://www.nrel.gov/docs/fy15osti/63707.pdf>

requiring enormous capital and confidence that the demand for new fuels will materialize. Tax incentives such as the AFTC help accelerate the investments in alternative fuel vehicles and increase demand for vehicles. This, in turn, will encourage more businesses to develop fueling stations that provide alternative fuels, and will reward manufacturers investing in production of alternative fuel vehicles and related fueling equipment. It also is important that governmental policies provide enough certainty to foster the right type of environment for investment in fueling infrastructure.

Additionally, many of the fuels eligible for the AFTC (CNG, LNG, RNG, Propane) represent an ideal scenario for tax credits intended to change behavior, as they fuel vehicle technology that is on-road, proven, and available today. Any revenue offset resulting from the AFTC is a sound investment; it will not go into vehicles experiencing early-stage technology challenges and will not result in failed attempts at fleet conversions. In fact, in the case of NGVs, while there are only 175,000 on U.S. roads, there are over 27 million deployed globally.<sup>9</sup> These numbers have been rapidly expanding globally<sup>10</sup>, demonstrating that the technology, at least for certain alternative fuels, is not experimental and does not represent financial risk on behalf of the government. Similarly, use of propane autogas globally has reached 23 million vehicles worldwide but the U.S. has deployed only 200,000.<sup>11</sup>

While technology has reached maturation for some of these fuels, there remains an opportunity for the AFTC to grow emerging technologies such as RNG and hydrogen. RNG, as explained before, is rapidly expanding in use and offers rapid growth to markets outside of California, once economic factors drive affordability and adoption in other states. Simultaneously, as hydrogen and fuel cell vehicles remain in their infancy, there is infinite room for market growth.

### **Economic Justification: Economic Impacts of AFTC Extension**

With obvious growth potential, the American economy can expect to benefit from a long-term, prospective extension of the AFTC and related investments in alternative fuel vehicles, infrastructure, and related technology. In 2018, as Congress continued to discuss the future of temporary tax provisions, NGV America conducted an economic analysis on a five-year extension of the AFTC. The five-year timeline was chosen for reasons stated above, but there was another crucial reason for the analysis to investigate a 5-year prospective extension: if the AFTC is reinstated for a full five years, impacts of this credit will have demonstrable benefits for an additional five years, without continued investment from the government.

With analysis of a five-year AFTC extension (2018-2022) several key findings were identified. While findings of the analysis would not apply to a five-year extension now (because two years of the extension would be retroactive as of 2019), the findings of the analysis offer economic forecasts demonstrating possible economic impacts from a five-year prospective AFTC extension.

The analysis found that if Congress renewed the AFTC prospectively for 5 years, the private sector would add an incremental 18,000 NGVs versus the status quo, and America will benefit from:

- \$2.2 billion in additional private sector investment in station infrastructure, equipment, and renewable natural gas (RNG) project development
- 26,000 new jobs added with an average salary of about \$48,000 per year
- \$3.8 billion of incremental economic output

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<sup>9</sup> <http://www.iangv.org/current-ngv-stats/>

<sup>10</sup> <https://www.csis.org/analysis/pathways-developing-natural-gas-vehicle-market>

<sup>11</sup> <https://www.hocongas.com/wp-content/uploads/2017/08/Autogas-fact-doc.pdf>

- 62.6 million metric tons of additional greenhouse gas emission reductions
- 25,030 metric tons of incremental NOx emissions reductions
- \$300 million in avoided public health costs

Most of the components in the manufacturing and supply chain for natural gas transportation fuels are sourced in America. Using more natural gas results in more domestic job opportunities. These jobs range from the manufacture of parts that go into natural gas vehicles and infrastructure projects to the development and operation of natural gas fueling stations and renewable natural gas (RNG) projects. With an average salary of over \$45,000 per year, these are jobs that strengthen America's middle class and expand the tax base.

During the analysis of a prospective extension from 2018-2022, a 10-year impact analysis was also conducted, which demonstrated remarkable results. Over a 10-year horizon, assuming no further public investment after the AFTC expired, there would be nearly 58,000 incremental NGVs with a commensurate increase in economic and environmental benefits:

- \$5.8 billion in additional private sector investment in station infrastructure, equipment, and renewable natural gas (RNG) project development
- ~62,000 new jobs added with an average salary of about \$52,000 per year
- \$9.9 billion of incremental economic output
- 200.6 million metric tonnes of additional greenhouse gas emission reductions
- 82,327 metric tonnes of incremental NOx emissions reductions
- \$1.0 billion in avoided public health costs

Extending the AFTC for natural gas provides clearly demonstrable economic and social benefits to American taxpayers. By reinstating or extending the AFTC for any length of time, Americans will see an increase in the number of well-paying jobs available in both urban and rural communities, greater economic growth, improved air quality, and significant investment in renewable and sustainable sources of transportation fuel. A copy of the complete analysis can be found in the supplemental materials of this document. It is important to note, however, that this analysis only accounted for increased NGV deployment resulting from an AFTC extension. Without accounting for increased deployment of propane, hydrogen, and other eligible fuels, it can be assumed that the total economic impact of the AFTC on these markets would be significant. Though we do know that in the case of propane school buses, the adoption of this alternative fuel provides both immediate and long-term benefits. In the short-term, transitioning from diesel school bus fleets to propane saves school districts money, which can be reallocated to fund teacher salaries, facility updates, or other necessary and under-funded expenditures. This represents one unique benefit of the AFTC, as savings are, in many cases, passed along to the end-user.

The ability of non-taxable entities to claim the AFTC credit enables school districts, universities, municipalities, and transit agencies to utilize this credit to make investments in alternative fuel transportation. The credit offers many benefits to such entities, including reducing municipal budget liabilities, investment in local infrastructure, and reduction of alternative fuel prices at publicly-owned fueling stations. For example, Clearwater (FL) Gas used their retroactive AFTC credit from tax year 2017 to reduce the price of CNG at their fueling stations by \$0.30/gge. If the AFTC were to be reinstated, Clearwater Gas anticipates they would apply the full \$0.50/gge credit to their fuel price. This tax relief flows directly to the fuel consumer and provides increased affordability of alternative fuel. Clearwater is one example of the hundreds of public entities that benefit significantly from the AFTC.

Further deployment of NGVs will also lead to growth in the natural gas industry writ large. The most recent assessments (released in 2017, based on 2015 data) on the economic impacts of natural gas use, transportation, and production, conducted by ICF and the American Petroleum Institute, found that there were 4.10 million U.S. jobs related to natural gas in 2015. Natural gas value chain and related industrial sectors represented 5.6% of the U.S. GDP and 5.1% of total non-farm employment when direct, indirect and induced activities were counted.<sup>12</sup> They also found state and local taxes and fees were \$149.6 billion of direct, indirect, and induced economic activity while federal taxes and fees for the same activity were \$185.5 billion from the natural gas industry.<sup>13</sup> For transportation, there were 3,315 jobs creating \$130 million in labor income and adding 430 million in economic output.<sup>14</sup>

Similarly, a burgeoning RNG market can expect incremental economic output as it grows to a market of scale. An ICF study entitled “Economic Impacts of Deploying Low NO<sub>x</sub> Trucks Fueled by Renewable Natural Gas” found that in California alone, “Dedicated investments in deploying low NO<sub>x</sub> trucks powered by renewable natural gas could create up to 134,000 jobs and provide up to \$14 billion of added economic value by 2030”. They also found that the average labor income per job created was \$68,500, which is more than double California’s median salary for current workers. Finally, they found a diverse array of sectors that would benefit from this effort: “Sectors experiencing the highest job creation include construction, manufacturing, repair and maintenance of equipment, engineering services, environmental consulting services, and service industries (e.g., restaurants, accounting services, etc.).”<sup>15</sup> With the possibility to grow jobs in natural gas transportation applications and an anticipated growth in natural gas or renewable natural gas jobs as a result, there lies a tremendous untapped opportunity for further economic growth based on increased deployment of NGVs and related alternative fuel vehicles. Similarly, increased adoption of propane vehicles, particularly buses and refrigerated trucks, will encourage more innovation, create American jobs, and lessen our country’s dependence on foreign energy. Extension of AFTC will spur investments necessary to continue to grow these and other related markets.

Propane-fueled refrigerated trucks are used by companies like Schwan's Home Service, a privately-owned U.S. company started as a family business back in 1952. The company sells and delivers frozen foods to homes across the America with approximately 3,500 employees and 3,300 propane-powered trucks. They use propane in their fleet because it is a safe, reliable, efficient, and domestically abundant alternative fuel. Reinstating the AFTC is necessary to help mitigate costs and encourage companies like Schwan's to further the deployment of new, clean transportation technology.

### **Policy Justifications for the Request**

It is crucial that the tax credit be extended prospectively, longer-term, not only for the economic reasons listed above, but for several other policy reasons. Primarily, geopolitical and environmental

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<sup>12</sup> <https://www.api.org/~ /media/Files/Policy/Natural-Gas-Solutions/API-Natural-Gas-Industry-Impact-Report.pdf>

<sup>13</sup> <https://www.api.org/~ /media/Files/Policy/Natural-Gas-Solutions/API-Natural-Gas-Industry-Impact-Report.pdf>

<sup>14</sup> <https://www.api.org/~ /media/Files/Policy/Natural-Gas-Solutions/API-Natural-Gas-Industry-Impact-Report.pdf> Exhibit 7-1

<sup>15</sup> [https://static1.squarespace.com/static/53a09c47e4b050b5ad5bf4f5/t/590767ce59cc68a9a761ee54/1493657553202/ICF\\_RNG+Jobs+Study\\_FINAL+with+infographic.pdf](https://static1.squarespace.com/static/53a09c47e4b050b5ad5bf4f5/t/590767ce59cc68a9a761ee54/1493657553202/ICF_RNG+Jobs+Study_FINAL+with+infographic.pdf)

benefits reaped from increased deployment of alternative fuel vehicles serve the American public in demonstrable ways, as outlined below.

### **Policy Justification: Geopolitical**

Members of both parties have long acknowledged the need for further U.S. energy independence. The transportation sector is particularly dependent on petroleum-based diesel fuels, exacerbating America's reliance on foreign oil. The U.S. still imports about 5 million barrels of crude oil a day and the transportation sector is particularly dependent on petroleum-based diesel fuels, exacerbating this reliance on foreign oil. While natural gas currently accounts for 30% of total energy consumption, it represents just 0.30% of energy consumed in the transportation sector<sup>16</sup>. Per the Department of Energy, "Petroleum comprised 92% of U.S. transportation energy use in 2018."<sup>17</sup> As such, there remains a transformative opportunity to invest in switching more American fleets to domestically-produced natural gas and other alternative fuels. Part of the reason alternative fuels have failed to reach market saturation is that they have been competing on an uneven playing field. Between unstable or rapidly increasing fuel prices, concerns over market manipulation by OPEC, and the role the global oil market plays in funding governments whose policies are hostile to U.S. interests, there are significant geopolitical reasons to pursue further energy independence.

According to Securing America's Future Energy, or SAFE, close to 90% of the world's proved oil reserves are held by OPEC and other state-run national oil companies. Unexpected crisis, regional tension, or political instability has an immediate and unpredictable impact on a volatile global oil market, leading to drastic price increases resonating throughout the U.S. economy. SAFE points out that every economic recession in the past 40 years has either been preceded by or coincided with a spike in global oil prices.<sup>18</sup> Despite record U.S. production, the U.S imported approximately 9.93 million barrels per day of petroleum from about 86 countries in 2018.<sup>19</sup> Temporary decreases in the cost of oil also cause concern for both the U.S. economy and for further deployment of alternative fuels. Increased interest in alternative fuels as a mechanism for energy and economic independence gained popular and political support in the 1980's after several supply disruptions and again in 1992 after the first Gulf War. Interest once again was revised in 2008 when oil prices spike to \$140 a barrel. Efforts to encourage greater use of alternative fuels have suffered from a lack of continued commitment from the Congress and also from low oil prices that have periodically occurred. Most recently, the market for alternative fuels was hampered by the significant decrease in global oil prices in 2014 - 2015. Lower oil prices significantly reduced likelihood of adoption alternative fueled vehicles for cost-related reasons mentioned above. It is worth pointing out that turmoil could once again return to oil markets and high oil prices could again harm the American economy. Further, SAFE notes:

Temporary lulls in the price of oil should not be taken as the end of market manipulation by actors like OPEC and NOCs. When the price of oil drops, investment in new production suffers, and major exporters are forced to find substitutes for declining revenues to finance their spending obligations, burning through billions in foreign reserves or cutting social programs that temper restive populations. The only way to escape this boom-bust cycle and

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<sup>16</sup> Energy Information Administration (EIA) Annual Energy Outlook 2017, Table 2: Energy Consumption by Source and Sector, <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=2-AEO2017&cases=ref2017&sourcekey=0>

<sup>17</sup> [https://tedb.ornl.gov/wp-content/uploads/2019/03/Edition37\\_Full\\_Doc.pdf#page=176](https://tedb.ornl.gov/wp-content/uploads/2019/03/Edition37_Full_Doc.pdf#page=176)

<sup>18</sup> <http://secureenergy.org/energy-the-economy/energy-and-the-economy-read-more/>

<sup>19</sup> <https://www.eia.gov/tools/faqs/faq.php?id=727&t=6>

achieve energy security is by drastically reducing oil's role in the American transportation sector and the economy.<sup>20</sup>

The U.S. is now the number one producer of natural gas in the world due to breakthroughs and enhancements in technology and an abundant resource base. U.S. producers are now producing and supplying unprecedented levels of natural gas for the U.S. and world market. Due to the vast natural gas resources that are now economically recoverable, the U.S. now can finally begin to think about displacing a significant share of petroleum imports with domestic fuels and cleaner-burning natural gas. Experts believe that the abundant supply of natural gas will last for many decades. According to the American Gas Association, the U.S. estimated future supply of natural gas (reserves plus resources) stood at 3,141 Tcf at year end 2016 — enough natural gas to meet America's diverse energy needs for more than 100 years. The estimated future supply has more than doubled for the period 1990–2016.<sup>21</sup>

Despite this and the fact that domestic oil production has increased significantly in recent years, the U.S. continues to import close to 8 million barrels of oil per day and annually sends hundreds of billions of dollars overseas for this imported oil.<sup>22</sup> That is money that would be better spent in the U.S. on domestic alternative fuels, helping to improve our domestic economy, helping to transition to a cleaner economy, and providing new job opportunities.

Displacing petroleum with domestic natural gas would provide huge economic benefits to the U.S. economy. It creates and sustains jobs in the domestic natural gas industry and related industries (e.g., processing, handling, transmission and distribution of natural gas). A 2017 study released by the American Petroleum Institute (API) estimates that the natural gas industry currently supports 4.1 million America jobs with a valued added benefit of \$550 billion to the U.S. economy. Expanding the use of natural gas in transportation will add to the number employed and to the economic benefit provided.

Displacing petroleum imports with natural gas for transportation not only keeps dollars in the American economy but it lowers the transportation costs for U.S. businesses, making them more competitive, and allowing them to expand their businesses. Fleets converting to natural gas will be able to lock-in lower costs for years to come because the price outlook for natural gas is stable. There are about 175,000 natural gas vehicles on the road in the United States, compared to about 26 million worldwide. Despite lagging other countries, the U.S. has in place the building blocks for a successful natural gas transportation industry. In the U.S., virtually every heavy-duty truck manufacturer and most transit bus manufacturers offer a selection of natural gas vehicles. Many prominent light duty manufacturers have arrangements with suppliers to make natural gas vehicles available to their customers. Unfortunately, the United States fails to incentivize manufacturing of these products, unlike countries around the world, where more natural gas vehicle options are available. U.S. manufacturers need clearer signals, better incentives, and stability for markets within which they make decisions about vehicle availability.

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<sup>20</sup> <http://secureenergy.org/energy-the-economy/energy-and-the-economy-read-more/>

<sup>21</sup> American Gas Association Playbook, [https://www.aga.org/contentassets/6ff34106cf9e4fc08fa22a385e187b93/aga\\_3610-2018-aga-playbook\\_clickable.pdf](https://www.aga.org/contentassets/6ff34106cf9e4fc08fa22a385e187b93/aga_3610-2018-aga-playbook_clickable.pdf)

<sup>22</sup> U.S. Energy Information Administration, 2019 *Annual Energy Outlook* (Reference Case) Liquid Fuels Supply and Disposition (2017 \$138.46 billion, 2018 \$169.57 billion, and 2019 forecast \$178.94 billion.). Over time, these payments represent trillion of dollars of investment that could be taking place in the U.S.



Fuel providers have also been adding to the number of fueling outlets that offer vehicular natural gas. Today, there are nearly 2,000 natural gas fueling stations in the U.S. This total is up significantly from just a few years ago and now provides coast to coast and border to border refueling options. The capital required to build out these stations represents \$250 - \$500 million a year in new investment. With fuel credits spurring additional vehicle adoption, private investment in these stations will increase. Natural gas consumption at about 600 million gasoline gallon equivalents represents just a small portion of the overall transportation market, which for on-road use consumes about 175 billion gasoline gallon equivalents.

Natural gas vehicles have the greatest potential of available alternative fuel technologies to displace oil consumption and achieve mass market adoption across all classes of on-road motor vehicles.<sup>23</sup> This statement reflects the fact that natural gas is well suited to use in a broad variety of vehicle platforms including pickup trucks, sport utility vehicles, refuse trucks, smaller sized delivery vehicles, and large trucks and buses. Natural gas also is an excellent fuel for displacing petroleum in many off-road applications such as marine, mining and rail. It is clear that with parity in the transportation fuels market, there are appropriate and necessary areas where alternative fuels can continue to increase our energy independence while bolstering our economy.

Increased adoption of propane also strengthens national security. More than 90 percent of propane used in the United States is produced domestically, with another 7 percent imported from Canada. That said, the domestic supply well outpaces current demand. ICF International and Enterprise Products Partners forecasts that more than 50% of domestic propane production will be exported in 2019, continuing the United States' position as the world's largest propane export market<sup>24</sup>. Should the domestic demand for propane increase, the industry already has established distribution infrastructure across the country<sup>25</sup>.

### **Policy Justification: Environmental**

The United States has a clean air problem. There are over 141.1 million Americans, or 4 out of 10, living in areas with air that is unhealthy to breathe.<sup>26</sup> Breathing in particle pollution increases risk of asthma, lung cancer, heart disease, and premature death. Unfortunately, the large share of Americans that reside in counties in violation of federal air pollution standards are African Americans. 71% of African Americans live in such counties and black children are two times more likely to be hospitalized and four times more likely to die from asthma than white children.<sup>27</sup> From 2001-2009, the greatest rise in asthma rates was among black children – a 50% increase. In fact, 1 in 6 black children had asthma in 2009.<sup>28</sup> The number one source of urban emissions are vehicles such as short-haul, long-haul, refuse, school and transit buses. 74% of heavy-duty trucks are not

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<sup>23</sup> See National Petroleum Council, "Future of Transportation Fuels" (August 2012)" ([http://www.npc.org/FTF-report-080112/Natural\\_Gas\\_Analysis-080112.pdf](http://www.npc.org/FTF-report-080112/Natural_Gas_Analysis-080112.pdf)); National Academy of Sciences, "Transitions to Alternative Vehicles and Fuels (March 2013) ([http://www.nap.edu/catalog.php?record\\_id=18264](http://www.nap.edu/catalog.php?record_id=18264)).

<sup>24</sup> <https://bpnews.com/index.php/publications/magazine/current-issue/1364-exports-to-exceed-50-of-propane-supply-by-2019>

<sup>25</sup> [https://afdc.energy.gov/fuels/propane\\_benefits.html](https://afdc.energy.gov/fuels/propane_benefits.html)

<sup>26</sup> Source: American Lung Association, 2019

<sup>27</sup> Source: EPA, July 2016

<sup>28</sup> Source: Centers for Disease Control and Prevention, May 2011

certified to latest NOx emissions standards.<sup>29</sup> These high polluting trucks are diesel trucks, but newer technology offers affordable, clean options offering a big impact when it comes to clean air. In fact, replacing 1 traditional diesel-burning heavy-duty truck with 1 new Ultra Low-NOx natural gas heavy-duty truck is the emissions equivalent of removing 119 traditional combustion engine cars off our roads.<sup>30</sup>

Additionally, natural gas vehicles are key to reducing greenhouse gas emissions as we battle against climate change. 29% of all greenhouse gas emissions are related to transportation, but deploying cleaner technology, with help of the AFTC, can reduce this significant source of GHGs. The newest heavy-duty natural gas trucks are 90% cleaner than the EPA's current NOx standard and 90% cleaner than the latest available diesel engine.<sup>31</sup> Fueling with natural gas reduces CO2 and greenhouse gas emissions compared to comparable diesel. If fueling with LNG, the well-to-wheels GHG emissions reduction is 11%; fueling with CNG is a 17 reduction.<sup>32</sup> However, fueling with renewable natural gas (RNG) provides even greater CO2 and greenhouse gas emission reductions, anywhere from 40-125% on a well-to-wheels basis.<sup>33</sup> When it comes to carbon intensity, the California Air Resources Board's Low Carbon Fuel Standards Pathways certified carbon intensity values for RNG (Bio-LNG or Bio-CNG) as the lowest Energy Economy Ratio-Adjusted Carbon Intensity, as low as -400 CI.<sup>34</sup>

Renewable Natural Gas (RNG), or biomethane (RNG) is produced by capturing methane wherever organic materials are present (e.g., landfills, dairy farms, wastewater treatment facilities, and animal & crop waste systems). The United States has abundant sources of renewable natural gas that can be harnessed for RNG production, including 66.5 million tons per year of food waste, 17,000 wastewater facilities, 8,000 large farms and dairies, as well as 1,750 landfills.<sup>35</sup> Renewable natural gas production is steadily increasing to meet growing demand throughout the U.S.

Utilized in heavy-duty NGVs and incentivized through the Renewable Fuels Standard, Low Carbon Fuel Standards, and the AFTC, RNG use as a transportation fuel has increased 577%, displacing 7+ million tons of carbon dioxide equivalent (CO2e).<sup>36</sup> In 2018 alone, 32%, of all on-road fuel used in natural gas vehicles was RNG, which is over 200 million gasoline gallon equivalents. Over the past five years, RNG as a Transportation Fuel lowered greenhouse gas emissions equivalent to removing 1,539,565 gasoline passenger cars from our roads for one year, reduced CO2 emissions equivalent to 815,950,377 gallons of gasoline or 712,313,458 gallons of diesel consumed, which is equal to the total energy used by 868,321 U.S. homes for one year.<sup>37</sup>

As mentioned above, there is tremendous opportunity for RNG development nationwide. Unfortunately, cost of RNG production remains high. California, through a diesel tax and Low Carbon Fuel Standard, has created a viable market for RNG use in transportation. For the rest of the

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<sup>29</sup> DTF Analysis on HIS Vehicles in Operation Data, December 2015

<sup>30</sup> Source: [https://greet.es.anl.gov/afleet\\_tool](https://greet.es.anl.gov/afleet_tool)

<sup>31</sup> <https://www.ngvamerica.org/wp-content/uploads/2018/12/NGV-VW-HD-Trucks.pdf>

<sup>32</sup> Source: NGV America Emissions Whitepaper based on CARB LCFS *\*Numbers compared to diesel emissions (well-to-wheel)*

<sup>33</sup> Source: [www.arb.ca.gov/fuels/lcfs/fuelpathways/pathwaytable.htm](http://www.arb.ca.gov/fuels/lcfs/fuelpathways/pathwaytable.htm), CARB, February 2017. Adjusted for heavy-duty truck applications.

<sup>34</sup> <http://www.arb.ca.gov/fuels/lcfs/fuelpathways/pathwaytable.htm>

<sup>35</sup> Source: Coalition for Renewable Natural Gas, 2017

<sup>36</sup> <https://www.ngvamerica.org/wp-content/uploads/2019/04/RNG-Driving-Down-Emissions.pdf>

<sup>37</sup> <https://www.ngvamerica.org/wp-content/uploads/2019/04/RNG-Driving-Down-Emissions.pdf>



country to follow suit, and reap the related economic and environmental benefits, the cost of utilizing RNG needs to be reduced and further deployment is needed.

Before accounting for RNG use, and with remaining incremental costs on NGVs, they still remain the most cost-effective mechanism of NO<sub>x</sub> reduction across several vehicle applications. On a heavy-duty truck, the life-cycle NO<sub>x</sub> emissions are greater than both diesel and electric trucks, and when comparing the cost of NO<sub>x</sub> reduction, natural gas heavy-duty trucks are 53% more cost effective than diesel alternatives and 47% more cost effective than electric options. Similarly, when comparing the cost of NO<sub>x</sub> reduction for refuse trucks, natural gas refuse trucks are 86% more cost-effective than diesel alternatives and 54% more cost effective than electric options.<sup>38</sup>

One unique aspect of the AFTC is the ability of non-taxable entities to claim the credit. School districts, universities, municipalities, and transit agencies are able to utilize this credit to make investments in alternative fuel transportation. In fact, every day, 25 million children in the U.S. spend an average of an hour and a half on public school buses. School districts and health advocates have recognized the importance of reducing students' exposure to harmful diesel exhaust emissions. There are now more than 150 school districts operating approximately 5,500 natural gas powered school buses to safely transport and to help improve their air quality. Replacing older diesel buses with new cleaner natural gas buses to achieves the greatest amount of emissions reduction and air quality benefit per dollar spent. When comparing the cost of NO<sub>x</sub> reduction, natural gas buses are 95% more cost effective than diesel alternatives and more than 50% more cost effective than the limited availability of electric options.<sup>39</sup> Propane buses also result in cleaner and quieter communities and will continue to contribute to a cleaner environment. According to IHS Polk new vehicle registration data through Q1 2018, propane school bus adoption has increased by 700% in the last five years, increasing the nationwide fleet to over 15,000 buses<sup>40</sup>. Despite this growth, propane buses represent only 2% of the total school bus market.<sup>41</sup>

Transit agencies, particularly transit agencies in non-attainment zones or in areas where weather conditions do not permit effective deployment of electric buses, have increasingly invested in clean, natural-gas powered transit buses. Road tested and ready to deploy, there are over 12,000 natural gas transit buses on U.S. roads today. In one example, a transit fleet began converting its entire bus fleet to natural gas in 2017. With over 310 CNG buses today, they plan to add 240 more by 2020. These buses average a 600-mile range on a single fill. Upon entire fleet conversion, this transit agency should realize annual fuel savings of \$8.5 million and reduce its NO<sub>x</sub> emissions by 97 percent. The Los Angeles County Metropolitan Transit Authority (LA Metro) operates the largest natural gas transit fleet in North America with more than 2,250 CNG buses. In the fall of 2016, LA Metro began deploying and testing near-zero-emission natural gas engines. In May 2017, LA Metro signed a multi-year contract with Clean Energy to purchase renewable natural gas (RNG), with plans to run on 100% RNG within five years.<sup>42</sup>

When comparing the cost of NO<sub>x</sub> reduction, natural gas transit buses are 96 percent more cost effective than diesel alternatives and 36 percent more cost effective than limited and cost-

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<sup>38</sup> Emission comparisons are based on results using Argonne National Laboratory's HDVEC tool (<https://afleet-web.ex.anl.gov/hdv-emissions-calculator/>) and include modeling of new low-NO<sub>x</sub> natural gas engines and the diesel in-use emission option.

<sup>39</sup> <https://www.ngvamerica.org/wp-content/uploads/2018/12/NGV-VW-School-Buses.pdf>

<sup>40</sup> <https://www.schoolbusfleet.com/news/730119/number-of-propane-school-buses-in-operation-tops-15-000-perc-reports>

<sup>41</sup> <https://www.fhwa.dot.gov/policyinformation/statistics/2017/mv10.cfm>

<sup>42</sup> <https://www.ngvamerica.org/wp-content/uploads/2018/12/NGV-VW-Transit-Buses.pdf>

prohibitive electric options. The availability of natural gas-powered buses has enabled transit agencies to modernize their fleets while maintaining consistent passenger prices due to the affordability of natural gas. Unfortunately, many fleets depend on the AFTC to make the business case for this type of investment, and as such, have slowed down fleet conversions when there is uncertainty surrounding an AFTC extension. Continued extension of the AFTC will permit more transit agencies to convert their fleets, clean their air, and identify cost-savings while also deploying increasing amounts of RNG.

Propane also offers significant benefits over traditional internal combustion engine fuels. Propane engines produce 12% less CO<sub>2</sub> emissions, 20% less NO<sub>x</sub> emissions, and 60% less CO emissions than gasoline engines. They also produce 80% less smog-producing hydrocarbon emissions than diesel engines. These environmental and health benefits have encouraged the adoption of propane in a key marketplace—school buses. One diesel school bus certified at the current standard produces more NO<sub>x</sub> than 10 propane buses at the .02 NO<sub>x</sub> level. One diesel bus manufactured before 2007 emits more NO<sub>x</sub> than 100 propane buses.

According to the Alternative Fuel Data Center, “Interest in propane as an alternative transportation fuel stems from its domestic availability, high-energy density, clean-burning qualities, and relatively low cost. It is the world’s third most common transportation fuel, behind gasoline and diesel, and is considered an alternative fuel under the Energy Policy Act of 1992.”<sup>43</sup> Propane continues to be a leader in the forklift and school bus markets. According to a Propane Education and Research Council (PERC) study, “Propane also continues to be the most common internal combustion fuel for forklifts and has rapidly become the third most common fuel for school buses. U.S. internal combustion demand accounts for 10 percent of domestic retail consumption.” Additionally, there continues to be an increase in the use of propane as an auto fuel. The same PERC study continues to say, “Demand from internal combustion increased by 7.1% from 2012 to 2015. New propane engine applications and growth of on-road vehicle sales helped to support this sector’s growth, which is expected to be one of the retail propane industry’s key growth driver in the coming years.”<sup>44</sup>

More than 13,000 propane autogas fleet vehicles were sold in 2017, according to data compiled by the Propane Education & Research Council. The new vehicles will annually consume approximately 36.8 million gallons of clean propane autogas, and many will be displacing fuels with higher emissions like gasoline and diesel.<sup>45</sup>

Propane also offers significant benefits over traditional internal combustion engine fuels. Propane engines produce 12% less CO<sub>2</sub> emissions, 20% less NO<sub>x</sub> emissions, and 60% less CO emissions than gasoline engines. They also produce 80% less smog-producing hydrocarbon emissions than diesel engines. These environmental and health benefits have encouraged the adoption of propane in a key marketplace—school buses. One diesel school bus certified at the current standard produces more NO<sub>x</sub> than 10 propane buses at the .02 NO<sub>x</sub> level. One diesel bus manufactured before 2007 emits more NO<sub>x</sub> than 100 propane buses.

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<sup>43</sup> [https://afdc.energy.gov/fuels/propane\\_basics.html](https://afdc.energy.gov/fuels/propane_basics.html)

<sup>44</sup> <http://www.npga.org/wp-content/uploads/2018/02/2015-Propane-Industry-Impact-on-US-and-State-Economies-FINAL.pdf>

<sup>45</sup> <https://propane.com/newsroom/press-releases/more-than-13000-propane-autogas-vehicles-sold-in-2017-will-add-36-8-million-gallons-of-clean-fuel-to-u-s-roadways/>

Renewable propane production is also on the rise. Renewable propane is most commonly produced as a byproduct of biodiesel production or from renewable liquid fuels from animal fats. This renewable fuel offers the same clean, efficient, reliable performance as conventional propane, with roughly half the carbon intensity value. Renewable propane also has the same molecular structure as traditional propane, allowing for a seamless transition to use in traditional propane applications.

In addition to cleaner air, propane-powered school buses are 50% quieter than their diesel counterparts. This noise reduction allows drivers to focus more on the road and surroundings, provides passengers with a calmer ride to and from school, and benefits residents along the various bus routes.

The need for clean air is clear and we are in a crucial time for reducing greenhouse gas reductions and carbon intensity due to increased concerns over climate change. Natural gas is on-road, available today, and utilizes domestic abundant or renewable energy. Yet despite the overwhelming evidence that NGVs make an excellent alternative fuel choice, there remain less than 175,000 NGVs on U.S. roads today. Compared to over 23 million vehicles on roads worldwide, there remains an untapped opportunity for improved environmental and economic results from alternative fuel vehicles such as NGVs.

#### **Proposal(s) for expansion or modifications to the provision**

We do not see the need for expansion or modification of the provision and in fact, would argue against other recommendations to open the AFTC to alterations and modifications. The credit, when enacted, is a very effective mechanism to obtain the various goals identified by supporters of the credit. Unfortunately, the credit has been extended retroactively several times and has rarely been extended prospectively, preventing fleets and businesses from planning investment in new vehicle purchases based on availability of the credit. Find here a brief overview of the credit's history:

- The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (PL 109-59, § 11113, 26 USC § 6426, § 6427; Became law on August 10, 2005) provides an incentive for compressed natural gas (CNG) and liquefied natural gas (LNG) when used as a "motor vehicle" fuel (including use in some non-road vehicles). The credit for CNG and LNG took effect on October 1, 2006 and originally expired on September 30, 2009.
- Congress made a number of changes to the fuel credits in § 6426, § 6427 in 2008, including extending the expiration date from Sept. 30, 2009 to December 31, 2009. PL 110-343, 122 Stat. 3765, Enacted H.R. 1424 (Became law Oct. 3, 2008)
- The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (PL 111-312, § 701; Became law on December 17, 2010) extended the CNG and LNG fuel credits for 2011 and also made them retroactive for 2010.
- The American Taxpayer Relief Act of 2012 (HR 8; PL 112-240, § 412; Became law on January 2, 2013) extended the availability of the 50-cent credit through the end of 2013 and made it retroactive for 2012.
- The Tax Increase Prevention Act of 2014 (H.R. 5771; PL 113-295; Became law on December 19, 2014) retroactively extends the fuel credit through 2014.
- The Consolidated Appropriations Act of 2016 extended the incentive through 2016 and made it retroactive for 2015 (HR 2029; PL 114-113, § 192; Became law on December 18, 2015).
- Thirteen temporary energy tax provisions including the AFTC expired at the end of 2017. All of these provisions expired at the end of 2016 and were retroactively extended by the

Bipartisan Budget Act of 2018 (BBA; P.L. 115-123) and made available for the 2017 tax year.

- The AFTC remains expired for 2018 and 2019, which is the longest period of time the credit has lapsed.

**Miscellaneous considerations related to the provision (i.e., other provisions in the code that interact with the provision that should be considered)**

There is one concern regarding related provisions in the code which is the Alternative Fuels Mixture Credit. The Alternative Fuels Mixture Credit (26 USC 6426(e)(3)), while located in a similar portion of the code, is unrelated to the Alternative Fuels Tax Credit (26 USC 6426(d)(5)) and 26 USC 6427(e)(6)(C)). Our coalition takes no position on the Mixture Credit but asks that the Joint Committee on Taxation score and the Energy Task Force Consider the AFTC and the Alternative Fuels Mixture Credit separately.

In years past, the AFTC and the Mixture Credit have been scored together, due to their proximity within the code, with the AFTC falling within 26 USC 6426(d)(5) and the Mixture Credit falling within 26 USC 6427(e)(6)(C) and the excise tax payments both falling under 26 USC 6427 (e)(6)(C). This had not been an issue until 2018, when there was a drastic increase to the cost of the Mixture Credit, for a variety of reasons. This increase in cost does not relate to the AFTC in any way, and as such, we ask that the Joint Committee on Taxation score these credits separately. We also ask the Energy Task Force to consider these credits individually, so as to appropriately demonstrate the revenue impacts and merits of each credit.

As a technical matter, the two credits ought to be considered separately, but there is also a policy justification for considering each credit separately: the AFTC is a credit on transportation fuel only, while the Mixture Credit is defined as "An alternative fuel blender that is registered with the Internal Revenue Service (IRS) may be eligible for a tax incentive on the sale or use of the alternative fuel blend (mixture) for use as a fuel in the blender's trade or business." Intent behind these credits are different, benefitting technologies and industries are different, markets related to application of these credits are different, and as such, we ask that they be considered separately.

Because of the structure of U.S. tax code containing the alternative fuels tax credit, we wanted to provide textual changes necessary to extend the alternative fuels tax credit, which can be done with these changes:

- 26 USC 6426 (d)(5) to be extended by changing the expiration date for alternative fuels.
- 26 USC 6427 (e)(6)(C) (expiration date for alternative fuels) to be extended.

Making changes to this part of the U.S. Code would extend the alternative fuels tax credit for a date to be determined but would have no bearing on the alternative fuel mixture credit.

**Conclusion**

Extension of the AFTC has obvious economic justifications, while providing numerous environmental and geopolitical benefits to further deployment of alternative fuel vehicles. Extending the AFTC is a crucial step toward parity for alternative fuels. Creating a level playing field on which alternative fuels can compete ensures that policies do not impede economic growth, business development, or discourage critical investment in clean transportation fuels and technology. The U.S. has a tremendous opportunity to significantly reduce its reliance on foreign petroleum, to improve economic competitiveness, and make demonstrable improvements to our environment through greater use of alternative fuels. Tax policies can aid in accelerating the successful market penetration of alternative fuel vehicles and thereby accelerate the achievement

of benefits outlined above. In order to be effective, tax incentives must provide certainty for industries, investors, and purchasers of alternative fuels, and must remain in place for no less than five years, prospectively.

Members of this coalition supporting an AFTC extension recommend an extension and phasedown as follows:

- Extend 2018 and 2019 as soon as possible
- Extend the AFTC prospectively for five years at the full \$0.50/gallon (2020, 2021, 2022, 2023, 2024)
- Phase down the AFTC for two years at \$0.25/gallon (2025, 2026)

As stated previously, we support this phase down but do not wish to see the AFTC ended permanently in 2026 if other competing fuel and vehicle types continue to receive tax relief in the form of other tax credits.

Members of our coalition request a time to meet with the Energy Task Force to further discuss the future of this credit. To arrange a meeting on behalf of the coalition, please contact Allison Cunningham, Director, Federal Government Affairs, NGV America, at 202-824-7363 or [acunningham@ngvamerica.org](mailto:acunningham@ngvamerica.org).

Additionally, please find attached supplemental materials from stakeholders supportive of coalition efforts and further information for your consideration. We appreciate your consideration of our request to extend the Alternative Fuels Tax Credit.

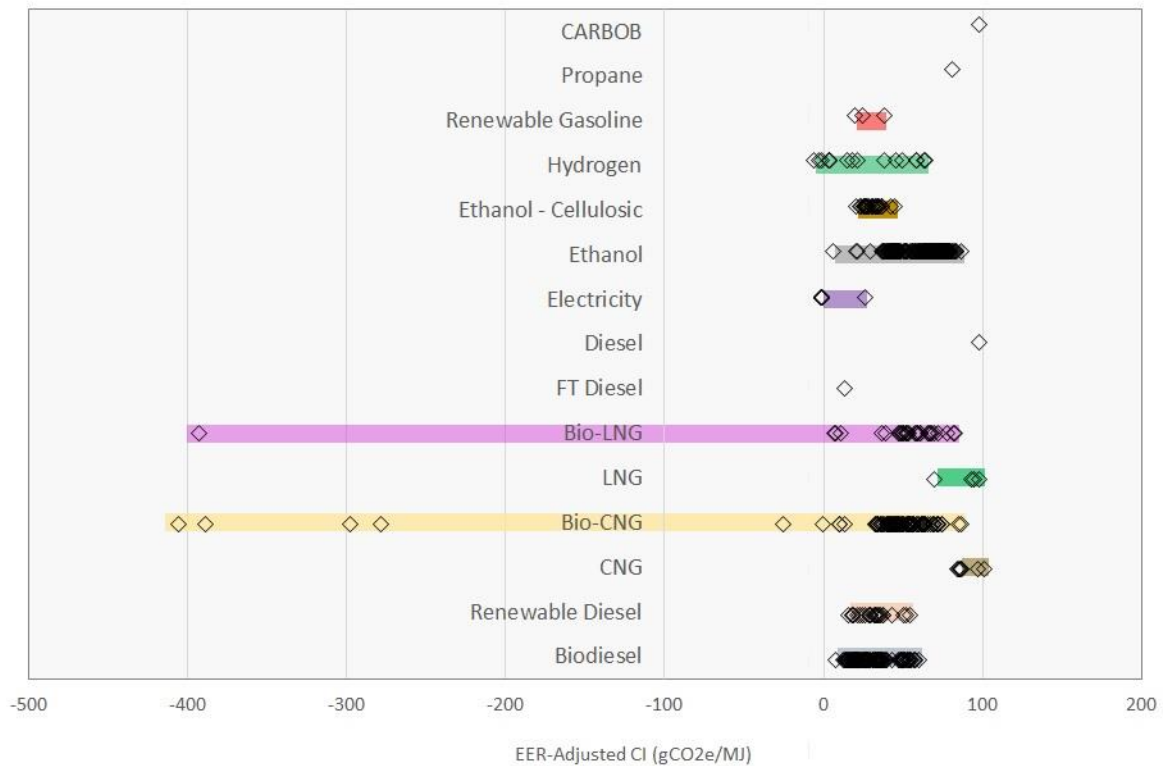
### **Supplemental Materials**

Please find attached copies of the following supplemental materials related to the request for an extension of the Alternative Fuels Tax Credit

- A copy of our “All Parties Letter” in support of an immediate extension of the AFTC, with 650 Signatory companies and organizations from across the country.
- A letter from over 200 local Clean Cities Coalitions supporting extension of the AFTC.
- Referenced economic analysis examining a five-year extension of the AFTC.
- A list of 149 transit agencies utilizing natural gas and propane.
- A list of meetings the AFTC Coalition has taken on extending the credit since February 1, 2019.
- Below, please find an appendix with graphical representations of related data-points.

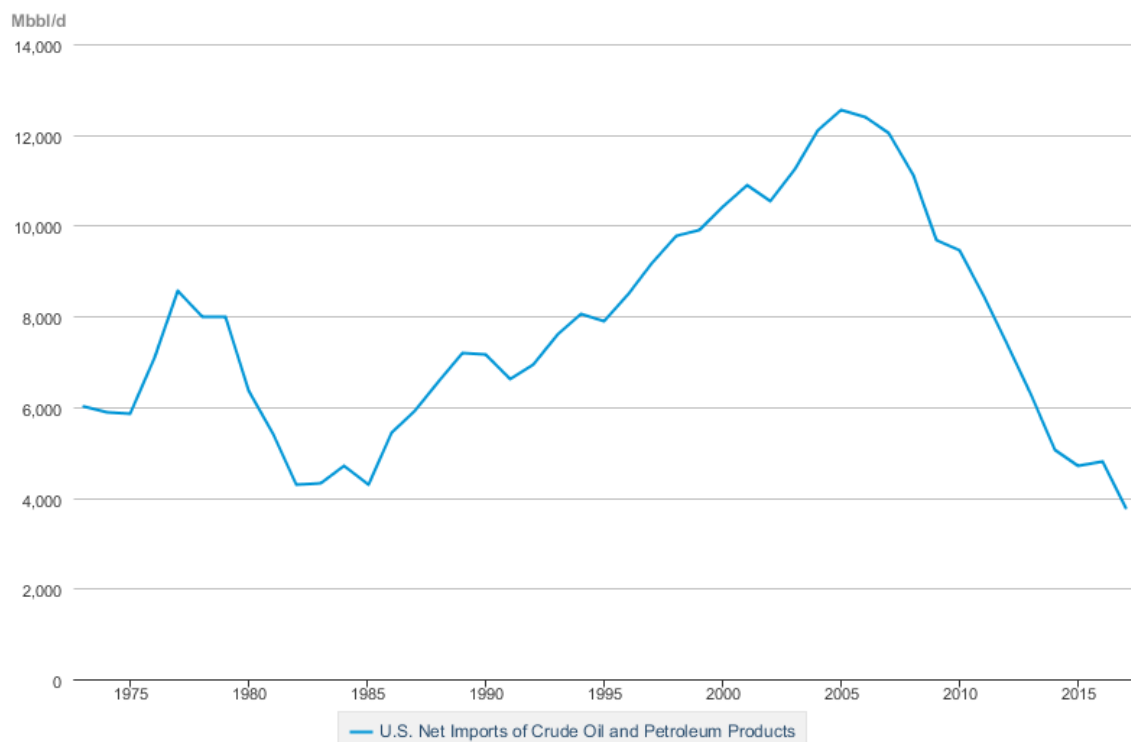
## Appendix

Carbon Intensity Values of Current Certified Pathways (2019)



Source: <https://www.arb.ca.gov/fuels/lcfs/fuelpathways/pathwaytable.htm>

### U.S. Net Imports by Country



**Table 5.4**  
**Diesel Share of Medium and Heavy Truck Sales by Gross Vehicle Weight, 1995–2017<sup>a</sup>**

Calendar year	Class 4 14,001– 16,000 lb	Class 5 16,001– 19,500 lb	Class 6 19,501– 26,000 lb	Class 7 26,001– 33,000 lb	Class 8 33,001 lb and over	Total (Class 4 - Class 8)
1995	68%	87%	70%	74%	100%	87%
1996	66%	92%	69%	68%	100%	85%
1997	61%	90%	82%	70%	100%	85%
1998	72%	91%	88%	72%	100%	88%
1999	62%	86%	90%	74%	100%	88%
2000	62%	93%	54%	68%	100%	83%
2001	91%	90%	70%	59%	100%	84%
2002	68%	93%	66%	54%	100%	82%
2003	74%	92%	77%	47%	100%	83%
2004	71%	92%	76%	54%	100%	85%
2005	74%	92%	73%	56%	100%	87%
2006	76%	92%	75%	59%	100%	88%
2007	78%	92%	52%	50%	100%	81%
2008	81%	92%	58%	50%	100%	84%
2009	87%	91%	56%	36%	100%	80%
2010	94%	93%	92%	39%	100%	87%
2011	82%	80%	95%	49%	100%	91%
2012	14%	79%	95%	49%	100%	89%
2013	39%	80%	96%	46%	100%	88%
2014	32%	80%	91%	45%	100%	88%
2015	24%	80%	98%	48%	100%	89%
2016	21%	54%	89%	45%	100%	78%
2017	16%	52%	87%	45%	100%	75%

Source:

Ward's Communications, [www.wardsauto.com](http://www.wardsauto.com). (Additional resources: [www.wardsauto.com](http://www.wardsauto.com))

<sup>a</sup> Estimates based on available factory sales. May not represent the entire industry.

Source: [https://tedb.ornl.gov/wp-content/uploads/2019/03/Edition37\\_Full\\_Doc.pdf#page=176](https://tedb.ornl.gov/wp-content/uploads/2019/03/Edition37_Full_Doc.pdf#page=176)

**Table 3. Effect of Tax Credits on Simple Payback**

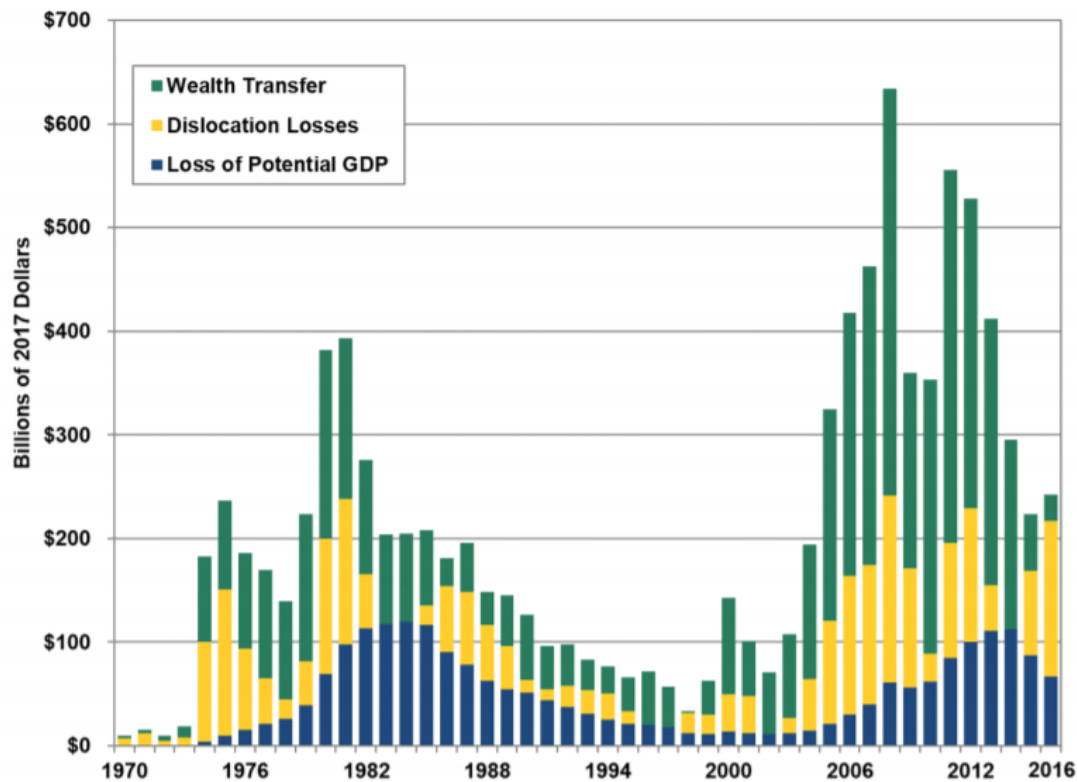
100-Vehicle Fleet	Simple Payback (years)				
	No Credits (Baseline)	Station Credit Only	Vehicle Credit Only	Fuel Credit Only	All Credits Combined
Transit Buses	4.33	4.32	2.87	3.26	2.1
School Buses	12.38	12.31	5.68	9.41	3.9
Trash Trucks	3.84	3.82	2.49	2.82	1.8
Para Shuttles	5.93	5.88	3.57	4.14	2.4
Delivery Trucks	8.65	8.56	4.84	6.0	3.1
Pickup Trucks	≥ 7	6.87	4.66	5.08	3.0
Taxis	4.58	4.52	3.34	3.13	2.2
Mixed Fleet A	5.16	5.13	3.14	3.78	2.2
Mixed Fleet B	6.36	6.31	3.62	4.61	2.5

The two most effective tax credits were for vehicle purchase and fuel purchase. Individually, either could take a marginally profitable project such as school buses, delivery trucks, or pickup trucks and bring it into the realm of acceptable payback periods of 6 years or shorter. Essentially, subsidies have the same effects on simple payback as fuel prices, station costs, and incremental vehicle costs. Simply stated, the effects of subsidies can be quite dramatic.

Source: NREL study with related conclusion on effectiveness of credits  
<https://www.nrel.gov/docs/fy10osti/47919.pdf>



### Costs of Oil Dependence to the U.S. Economy, 1970–2016



Notes: Wealth Transfer is the product of total U.S. oil imports and the difference between the actual market price of oil (influenced by market power) and what the price would have been in a competitive market. Dislocation Losses are temporary reductions in GDP as a result of oil price shocks.

Loss of Potential Gross Domestic Product (GDP) results because a basic resource used by the economy to produce output has become more expensive. As a consequence, with the same endowment of labor, capital, and other resources, our economy cannot produce quite as much as it could have at a lower oil price.

Source: Greene, David L., Roderick Lee, and Janet L. Hopson, "OPEC and the Costs to the U.S. Economy of Oil Dependence: 1970-2010," Oak Ridge National Laboratory Memorandum, 2011, and updates from the ORNL Transportation:  
[https://tedb.ornl.gov/wp-content/uploads/2019/03/Edition37\\_Full\\_Doc.pdf#page=176](https://tedb.ornl.gov/wp-content/uploads/2019/03/Edition37_Full_Doc.pdf#page=176)



February 11, 2019

The Honorable Charles Grassley  
Chairman  
Committee on Finance  
United States Senate  
219 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Ron Wyden  
Ranking Member  
Committee on Finance  
United States Senate  
219 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Richard Neal  
Chairman  
Committee on Ways & Means  
United States House of Representatives  
1102 Longworth House Office Building  
Washington, D.C. 20515

The Honorable Kevin Brady  
Ranking Member  
Committee on Ways & Means  
United States House of Representatives  
1102 Longworth House Office Building  
Washington, D.C. 20515

Dear Chairmen Grassley and Neal, and Ranking Members Wyden and Brady:

The undersigned organizations represent users, retailers, customers, fleet managers, utilities, and producers of clean alternative transportation fuels.

We ask your support for including a reinstatement of the \$0.50/gallon alternative fuels tax credit (AFTC) (26 USC § 6426(d) and § 6427(e)) in a fiscal year 2019 government spending package. The AFTC is a credit of \$0.50 per gasoline gallon equivalent (GGE) of certain transportation fuels, including natural gas, liquefied petroleum gas, P Series Fuels, liquefied hydrogen and others. Extending the AFTC retroactively for 2018 and prospectively for 2019 will allow businesses and customers to continue to deploy cleaner alternative fuel technologies. A full five-year extension of the AFTC would provide business certainty along with a significant contribution to our nation's economic growth. Unfortunately, the credit has currently lapsed as of December 31, 2017 and many fleets, businesses, and manufacturers are unable to plan future investments as they manage current uncertainty. Immediately reinstating the AFTC for 2018 and 2019 is necessary to encouraging further deployment of new, clean transportation technology.

Extending the AFTC will bring significant environmental benefits, improved air quality, and enhance our energy independence by lowering our dependence on foreign oil. Renewal of the AFTC also promotes increased private-sector investment in infrastructure and equipment, which leads to more jobs and economic output.

Thank you for your continued support for the AFTC and for the use of cleaner-burning alternative transportation fuels. We appreciate your consideration of this request.

Sincerely,

NGVAmerica  
National Propane Gas Association  
American Public Gas Association  
Hydrogen Fuel Cell and Energy  
Association  
American Natural Gas

Clean Energy Fuels Corp.  
Schwan's Company  
Trillium  
United Parcel Service  
VIA Metropolitan Transit  
Authority  
Waste Management

1975

1st Class Real Estate  
21st Century Coop  
3G CNG Corporation  
4th Generation Home Builders, LLC  
A&B Propane  
A-1 Propane & Services, Inc.  
ACE Solid Waste  
Ace-Robbins, Inc.  
Acme Propane Gas  
Advanced Propane, Inc  
Advantage Propane  
Aero Propane Gas, Inc  
Agility Fuel Solutions  
AGL Welding Supply Co.,Inc.  
AgVantage FS  
AgWest Commodities LLC  
Air & Gas Technologies, Inc.  
Airpark  
Alabama Propane Gas Association  
Alameda County Industries  
Algas Inc  
Allaround Propane Inc.  
Allgas Inc. of Montgomery  
Allied Propane Service  
Ameresco  
American Biogas Council  
American Fueling  
American Natural Gas  
American Public Gas Association  
AmeriGas  
AmeriGas Propane  
Amp Americas  
Anderson BlueBird Bus Sales of NE  
AnywherEnergy L3C  
Apadana Inc  
Apex Gas and Appliance Co.  
Apex Trucking Inc.  
Applebee Oil & Propane  
Applied LNG  
Aria Energy  
Armory Advisors  
Arrick's Bottle Gas INC  
Arrick's Propane  
ARRO Autogas  
Arrow Disposal Service

Arrowhead LP Gas  
Associated Development  
Athens Services  
Atlantic City Jitney Association  
Atlas Disposal  
Atlas Disposal of Utah  
Atlas Road Clean Fuels, LLC  
ATZ, Inc. dba Doug Fox Parking  
Automatic Gas Co  
Auxier Gas, Inc.  
Aviation CNG  
AVSG LP  
Bair Propane LLC  
Bakers Propane  
Barrett Propane  
BayRunner Shuttle  
Beaudry Oil & Propane  
Bergquist, Inc.  
Berico Fuels  
Black Hills Energy  
Blackburn Propane Service, Inc.  
Blackhawk Propane  
Blossman Gas and Alliance Autogas  
Blossman Gas, Inc.  
Blue Bird Bus Sales of Pittsburgh, Inc  
Blue Diamond Disposal, Inc.  
Blue Energy Group  
Blue Line Transfer, Inc.  
Blue Springs School District  
Blue Star Gas  
Blue Star Gas SLC Co  
Bluhms Gas Sales  
Boehlke Bottled Gas Corp  
Bolinger's Propane Service  
Bosselman Energy  
Boulden Brothers Propane  
Boyertown Oil & Propane  
Boye's Gas Service, Inc.  
Brooks Gas Co., Inc.  
Buatane & Propane Gas co.  
Budget Meter  
Building Products Plus LLC  
Burke County BOE Transportation  
Buster Brown Propane  
Butane Propane News (BPN)  
C. Blackburn Inc.

C.A.T. Inc.  
C3H8 Consulting LLC  
Caglia Diversified Management  
Caglia Environmental  
Calif Renewable Power  
Callahan's Gas Inc  
CalMet Services  
CalPortland Company  
Cans Unlimited ( CUI )  
Cardinal Bus Sales & Service, Inc.  
Carlson Home & Auto  
Carolina Wholesale Gas Company Inc.  
Carson Gas Company  
Catalina Composites  
Cavagna North America  
Cedar Avenue Recycling &  
Transfer Station  
Cedarburg Police Department  
Centennial SD  
CenterPoint Energy  
Central Butane Gas Co  
Central Energy Co LLC  
Central Gas Service  
Central Jersey Propane, Inc.  
Central Montana Propane  
Central Oklahoma Transportation and  
Parking Authority  
Central States Bus Sales, Inc  
Certified Contracting  
Champagne's Energy, Inc.  
Cherry Energy  
Chesapeake Utilities  
Chilton Oil Company  
Chilton Propane Gas Company  
CHS Brandon  
CHS Devils Lake  
CHS Herman  
CHS Inc.  
CHS Rochester  
Citizen  
City of Albuquerque, NM  
City of Beverly Hills  
City of Columbia, MO  
City of Commerce  
City of Edmonds  
City of Montebello

City of Port Washington Police  
Department  
City of Redmond, Washington  
Clean Communities of CNY  
Clean Energy Fuels Corp.  
Clean Fuels Consulting  
Clearwater Gas System, FL  
Cleburne Propane, LLC  
CNG Center  
CNG Services of Arizona  
CNG Source, Inc.  
CNG-One, LLC  
CoEnergy Propane  
Cokesbury Transportation  
Colorado & New Mexico Propane  
Gas Associations  
Comfort Gas, Inc.  
Community Transportation Association  
of America  
Consolidated Gas  
Consolidated Utilities Corp  
Consulting Solutions, LLC  
Consumer Oil & Propane, Inc  
Contract Transport Services LLC.  
Coombs Gas, Inc.  
Core-Mark  
Core-Mark Carolina  
Core-Mark International Tampa Division  
Core-Mark International, Inc.  
Cornerstone Environmental Group –  
A Tetra Tech Company  
Corporate Green, LLC  
Council Rock School District  
Country Propane Inc  
Coyne Oil & Propane  
CR&R Incorporated  
CS Gas Inc  
Cultural Care Au Pair  
Cummins Westport Inc.  
Cycle World  
Cylinder Exchange Service LLC  
D and D Gas  
D. Fox Consulting  
D.F. Richard Energy  
Davidson-Macri Sweeping, Inc.  
D-B Cartage, Inc.  
DCC Propane, LLC

Dead River Company  
Deiter Bros. Heating Cooling Energy  
DeKalb County Fleet Management  
Delco Foods  
Delta Liquid Energy  
Delta Liquid Energy/ARRO Autogas  
DFI Transport LLC  
Dick's Sanitation Service, Inc.  
Dillon Logistics, Inc.  
Dixie Gas & Oil Corp.  
Dixie Land Energy  
Dominion Energy  
Doonan Truck & Equipment of Wichita, Inc  
E. G. Smith Inc.  
E.J. Harrison & Sons, Inc.  
Early Dawn Refreshment Services, Inc.  
Eastern Propane Inc  
ECI  
Eco Friendly LLC  
Edco Disposal Corporation  
EDGE Gathering Virtual Pipelines 2, LLC  
EDL  
Edmonston & Associates  
Edward Zengel and Son Express Inc.  
Ehrhart Energy  
EIV Capital, LLC  
Electric Motor Shop, Inc.  
Emerald Alternative Energy Solutions, Inc.  
Enerdyne  
Energy Distribution Partners  
Energy Technology Training  
Energy Vision  
Energy's USA inc.  
EnergyUnited Propane, LLC  
Enviro Express Inc  
Estes Express Lines  
Evergreen FS Inc.  
EVO CNG  
EVO Transportation and Energy  
Services, Inc.  
Expo Propane/Sal's Propane/  
Energy Distribution Partners  
Express Mondor  
Farmers Co-op Oil  
Farmers Cooperative Assn  
Farmers Union Oil

FCA Transport LLC.  
Federal Signal  
Felker Truck and Equipment Inc  
Fencil Oil & LP Co., Inc.  
Filter Supply  
First Alt. Fuel, Inc.  
First Coop Association  
Fisk Tank Carrier  
Flinthills Environmental, LLC  
Florida Propane Gas Association  
Florida Public Utilities  
Florida Transportation Systems, Inc.  
Foothill Transit  
France Propane Service, Inc.  
Franger Gas Co, Inc.  
Frank Lamparelli Oil Co., Inc.  
Fred Garrison Oil Company  
Freedom CNG  
Freedom Fuel Equipment, LLC  
Freeway Propane  
Fresno Chamber of Commerce  
Fuel Cell and Hydrogen Energy  
Association  
Gala Gas Co., Inc.  
Garrow Propane  
Gateway FS  
G-Energy, LLC  
Georgia Gas Distributors, Inc  
Gibson's Heating & Plumbing Inc.  
Gladstein, Neandross & Associates  
Gold Coast Transit District  
Golden Empire Transit District  
Granite Propane Inc  
Great River CNG, LLC  
Greens Propane Gas Co. Inc  
Greentree Consulting LLC  
Greenwood RRST, LLC  
Growmark, Inc.  
GS Hydraulic Hose Corp  
G's Logistics, Inc.  
Guard Construction and Contracting  
Corporation  
Guntown LP Gas Company  
GW Ehrhart Inc  
H&M Gas Co.  
H&S Bakery inc

Hall Oil and Propane, Inc  
Hamilton Utilities  
Harris Feeding Company  
Heetco Inc.  
Hempfield School District  
Henry County Schools Transportation  
Heritage Propane  
Hexagon  
High Plains Cooperative  
Hisway Partners Inc. DBA  
Hometown Comfort  
Hocon Gas, Inc.  
Holland Bus Company  
Homewood Disposal Service, Inc.  
Honeyville Propane Inc.  
Hoover Truck & Bus Centers  
Houston Distributing Company  
Hudson Fire Protection District  
Hunt Propane, Inc.  
ICOM North America  
IGS CNG Services  
Illini FS  
Independence Fuel Systems, LLC  
Independent Propane Co  
InduMar Products, Inc.  
Indy Propane LLC  
Innovative Ag Service  
Iowa Propane Gas Association  
J&J Compression, LLC  
J. Rayl Transport, Inc.  
J.S. West Propane  
Jack's Butane Service  
Jaycox Construction CNG  
JaySan Gas Service, Inc.  
JBI  
JEB Lease Service Inc.  
JG Energy Solutions  
JM Reynolds Oil Co., Inc.  
Johnson oil  
JR Leonard Construction Co  
KALM Transport  
Kamps Propane  
Kansas City Area Transportation Authority  
KB Johnson Oil & Gas Co.  
Kentuckiana Cleanfuel, LLC  
Kentucky Propane Gas Association

KI BOIS Area Transit System  
Kinetrex Energy  
Klemm Tank Lines  
Knight Waste Services Ltd  
Koppy's Propane, Inc.  
L H Dickens & Son Inc  
L&L Enterprises of Waupaca, Inc.  
L.G. Jordan Oil Co., Inc.  
LA Gas Autogas station  
LaFerry's LP Gas Co. Inc.  
Lamers Bus Lines, Inc.  
Lampton Love Inc  
Landi Renzo USA  
Landmark Services Cooperative  
Leaf River Ag Service  
Lee's Propane Service, Inc.  
Lee's Summit RVII Schools  
Level Lifestyle  
Liberal CNG Coop  
Liberty Propane  
Lincoln Liquefied Gas Company  
Lindens Propane  
Livermore Sanitation Inc.  
Locks Mill Propane  
Long's Propane Gas LLC  
Louisiana Clean Fuels  
Louisiana Propane Gas Association  
LP Gas Insurance Specialists of America  
LPG & NH3 Supply, Inc.  
M & B Products, Inc.  
M&M Cartage Co Inc  
M. A. Brightbill Body Works, Inc.  
MacAllister Transportation  
Maschmeier fuels  
Mascott Equipment Co  
Mbg enterprises  
McAbee Trucking, Inc.  
McCraw Oil Company, Inc.  
McMahan's Bottle Gas  
McNeill Oil and Propane Inc  
Medstar transportation  
MFA Oil Company  
Michigan Propane Gas Association  
Mid States Propane  
Mid Valley Disposal  
Midwest Energy Solutions, Inc.

Midwest Roofing & Construction LLC  
Mississippi Propane Gas Associations  
MN Propane Association  
Modern Disposal Services Inc  
Modern Gas Company  
Modern Welding Company  
Momentum Fuel Technologies  
MOR-GAS, INC  
Morongo Basin Transit Authority  
Morrissey Consulting, LLC  
Morrow Renewables  
Mountain Gas  
Moyers Gas Service, Inc.  
Mt. Diablo Resource Recovery  
MTankCo  
MTC Transportation  
Municipal Gas Authority of Georgia  
Muskogee County Public Transit Authority  
Mutual Liquid Gas & Equipment Co., Inc.  
MVP Airport Parking  
Napa County Recycling & Waste Services, LLC  
NASA Services Inc  
Nat G CNG Solutions  
National Propane Gas Association  
National Waste & Recycling Association  
Natural Gas Supply LLC  
NC Propane Gas Assoc.  
Neill Gas Inc.  
Nel Hydrogen  
Nevada Propane Dealers Association  
New Century Farm Service  
New Frontier Holdings, LLC  
New Jersey Natural Gas  
Newport News Public Schools  
Newport West LLC  
Nexceris  
NGV Solutions  
NGVAmerica  
NICE Bus  
NiteHawk Sweepers  
NJ Propane Gas Association  
Normandy Distributing DBA  
AAA Advanced Chem-Dry  
North Central Bus and Equipment  
North County Transit District

North Kansas City #74 School District  
North Kansas City Schools  
North Star Energy LLC  
Northern Recycling and Waste Services  
Northern Resources Cooperative  
Northwest Propane Gas Company  
Northwest Transport, Inc  
NOVUS Wood Group  
Nutrien Ag Solutions  
NW Alliance for Clean Transportation  
NW Natural  
O'Connor Bus Sales  
Ogden Polar  
Ohio Fuel Cell Coalition  
Ohio Propane Gas Association  
Oklahoma Liquefied Gas, Inc.  
Oklahoma Propane Gas Association  
Oklahoma State University and  
Stillwater Community Transit  
Oklahoma Transit Association  
Old Dominion Freight Line, Inc.  
OLG Propane  
OMetro, Inc.  
Omnitek Engineering Corporation  
Omnitrans  
Onboard Dynamics  
OnCue  
O'Nealgas, Inc.  
Orange Avenue Disposal, Inc.  
Owens Energy  
Pacific Coast Propane  
Paladin Propane Partners, LLC  
Palm Springs Disposal Services  
Palmer Gas & Oil  
Palmetto Gas Corp.  
Palmetto Propane  
Palmetto Propane, Fuels & Ice  
Paraco Gas Corporation & Subsidiaries  
Parden LP Gas & service Co.,Inc.  
Pariso Logistics Inc.  
Parker Gas Co., Inc.  
Paso Robles Country Disposal, Inc  
Paso Robles Roll Off  
Paso Robles Waste & Recycle  
Payne Oil Company  
Pecos Propane, Inc.

PELGAS  
Penn Valley Gas  
Pennsylvania Propane Gas Association  
PepsiCo  
Phelps Sungas, Inc.  
Philadelphia Gas Works  
Phillips Energy  
Phoenix Energy Corp  
Piece of Mind, LLC  
Polk-Burnett Propane  
Portage Area Regional Transportation  
Authority  
Porter Gas Service Inc  
Postal Fleet Services  
Prairieland FS, Inc.  
Premier Cooperative  
Prescott Transit and Executive  
Transportation  
Presto Tap, LLC  
Pro Image Communications  
Professional Propane Services  
ProGas Inc.  
Progressive Power, LLC  
Propane Autogas LLC  
Propane Education and Research  
Council Member  
Propane Gas Association of New England  
Propane Marketers Association of Kansas  
Propane People Inc.  
PS Logistics FL  
PT Risk Management Insurance Services L'  
Quantum Fuel Systems LLC  
R.D. White and Sons  
R.E. Michel Co  
Rand Wade OilCo  
Ray Murray Inc  
RCLegacy Holdings LLC  
Recology CleanScapes  
Red Baker Propane Inc.  
Reddaway  
Redigas Inc.  
Redmark Cng Services L.L.C.  
ReFuel Energy Partners  
Regional Transportation Commission  
of Southern Nevada  
Rego Products  
Renergy, Inc.

Renzenberger, Inc  
Republic Services, Inc.  
Rhoads Energy  
Riverside Transit Agency  
RNGA Energy Group  
Robert H. Hoover & Sons Inc  
ROUSH  
ROUSH CleanTech  
Ruan Transportation Management  
Systems  
Rush Enterprises  
Rutherford Equipment  
Safety, Training, and More LLC  
Salem Area Mass Transit District  
Salmon River Propane  
San Diego Metropolitan Transit System  
Sapp Bros Inc.  
SchagrinGAS  
School Lines, Inc.  
Schwan's Company  
Select Milk Producers, Inc.  
Self Heating & Cooling, Inc.  
Sentara  
Sequoia Gas Company  
Sharp Energy  
Shaw Propane LLC  
Sheehy Mail Contractors Inc  
Shifflett Safety and Support  
Shuttle Park Two Inc  
Simple-Fill, Inc.  
Slate Spring LP Gas Co., Inc.  
South Central FS  
South Central Oil and Propane  
South Florida Gas Co.  
South Jersey Industries  
South San Francisco Scavenger Co Inc.  
South West Transit Association  
Southwest Transportation Agency  
Southwestern Energy Company  
Sparq Natural Gas, LLC  
Specialized Biogas Services  
SporTran  
Stanfords Propane Autogas Service Center  
Stanfords Propane Gas Conversion Center  
Stanfords Propane Gas Appliance Center  
Stanford's Propane Gas LLC

Stark Area Regional Transit Authority  
Stirk Compressed Natural Gas  
Stuck Enterprises, Inc  
Suburban Disposal Corp.  
Sullivan Propane  
Sumter County Board of Education  
Superior Energy Systems  
Superior Gas Inc, Notasulga  
Superior Gas, Inc.  
Superior Plus  
Superior Propane Incorporated  
Superior Ready Mix  
Supervalu/UNFI  
Tankfarm LLC  
Tarantin Industries  
Taylor Gas Company, Inc.  
Tech Air dba Scully Propane Service  
Tech Air Mid-Atlantic  
Ted Johnson Propane Co.  
Tennessee Propane Gas Association  
Tesei Petroleum, Inc.  
Texas Natural Gas Vehicle Alliance  
Texas Propane Gas Association  
The American Trucking Associations  
The Coalition for Renewable Natural Gas  
(RNG Coalition)  
The Rural Gas Company  
ThompsonGas, LLC  
Thornton's Gas Service  
Three Rivers FS Company  
Thunder Ridge Transport Inc.  
Time Transport, Inc.  
TN GAS, LLC  
Tops Markets  
Torrance Transit System  
Town of Berthoud  
Transfuels LLC and Capital Fuels, LLC  
Transportation Energy Partners  
Tri-Gas Company  
Trillium  
TruStar Energy  
Tucker Properties  
U.S. Gain  
UBCR LLC  
United Parcel Service  
United Propane Autogas Solutions Group

United Rail Partners, Ltd.  
United Truck Body Co, Inc.  
Unitrans (ASUCD/City of Davis)  
USA Hauling & Recycling  
USBiogas  
USF Holland LLC.  
Van Unen Miersma Propane  
Vegas Propane Inc.  
Veriha Trucking, Inc.  
VIA Metropolitan Transit Authority  
Viafield  
VT Accounting Associates, LLP  
Walters Gas Service, Inc.  
Warco Inc.  
Warco Transportation  
Ware Disposal Inc.  
Waste Connections Lone Star  
Waste Connections of California Inc.  
dba Greenteam of San Jose  
Waste Connections, Inc.  
Waste Industries  
Waste Management  
Waste Pro  
Waste Pro of Florida  
Waste Pro of Georgia  
Waste Pro USA  
Waste Pro USA, Waste Pro of Florida  
Waukon Feed Ranch Inc  
WCA Waste Corporation  
Webbtown Propane Company  
Webster & Garner Inc.  
Wells Propane Inc. dba: Baygas Propane  
Wessels Oil Co. Inc.  
West Propane  
West Virginia Propane Gas Association  
Western Natural Gas Co.  
Western Propane Gas Association  
Western Propane Services, Inc.  
Westhoff, Cone & Holmstedt  
WGL  
Whidbey Seatac Shuttle  
White River Distributors  
Williams Energy Group  
Wilson Oil & Propane  
WIN Propane  
Winnebago County Sheriff's Office



Wisconsin Bus Sales  
Wittenberger Bus Service  
WJDAYTECH Inc.  
WoodFuel.com LP  
Woodruff Energy  
Worthington Industries  
X3CNG  
XPO Sales INC

Yavapai Bottle Gas  
YRC Worldwide  
Zebulon Innovations

Cc: Senate Finance Committee  
House Ways and Means Committee  
Senate Majority Leader, Mitch McConnell  
Speaker of the House, Nancy Pelosi



February 8, 2019

The Honorable Charles Grassley, Chairman, Senate Finance Committee  
The Honorable Ron Wyden, Ranking Member, Senate Finance Committee  
The Honorable Richard Neal, Chairman, House Ways and Means Committee  
The Honorable Kevin Brady, Ranking Member, House Ways and Means Committee

**Re: Extension of Alternative Fuel, Vehicle, and Infrastructure Tax Credits**

Dear Chairman Grassley, Ranking Member Wyden, Chairman Neal and Ranking Member Brady:

The undersigned organizations represent users, retailers, customers, fleet managers, and producers of clean alternative transportation fuels. We urge you to extend critical expired alternative fuel and vehicle tax incentives for at least five years as part of a stable, growth-oriented tax strategy. Extension of these important incentives will help stabilize gasoline prices, decrease our reliance on foreign oil, and create American jobs.

Gasoline prices remain volatile and we continue to send more than *\$200 billion a year* to OPEC and other countries for oil. More than 70 percent of the oil we import is used as our primary transportation fuel for our national fleet of 270 million vehicles. Meanwhile, China and other nations threaten to beat out the United States for leadership of the global clean energy market.

As you know, there is broad bipartisan support for the alternative fuel and vehicle tax incentives. These incentives have leveraged billions in private investment and unleashed American ingenuity and technology innovation to enable vehicles using electricity, natural gas, propane, biodiesel, ethanol, and hydrogen to take hold in the marketplace. According to the U.S. Energy Information Administration, there are now more than 1.8 million alternative fuel vehicles on the road in the United States and more than 70,000 alternative fueling stations.

In addition to enhancing our energy security, the clean transportation industry is also critical to our economic growth and global competitiveness. There are now more than 1 million plug-in electric vehicles on the road in the U.S. The global market for lithium ion batteries will grow from \$25 billion in 2017 to \$47 billion in 2023 and annual revenue from the infrastructure charging sector is projected to grow to \$5.8 billion by 2022. The ethanol industry contributes about \$42 billion to our nation's economy, including more than 350,000 American jobs. Biodiesel has grown into a 2.4 billion gallon per year industry with 100 plants across the country supporting more than 60,000 jobs.

There are about 200,000 propane-powered vehicles on America's roads, and a fleet of more than 12,000 propane-powered school buses is used to transport more than 700,000 children to school each day. The propane industry contributed \$46.2 billion to U.S. gross domestic product and employed 53,964 domestic workers in 2015. The U.S. is the number one producer of natural gas in the world, and American

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businesses and consumers continue to embrace natural gas vehicles. Approximately 160,000 natural gas vehicles operate on America's roads today. These vehicles are supported by 1,824 fueling stations connected by 2.5 million miles of natural gas pipelines. Projections indicate that the transportation sector will consume 1.2 trillion cubic feet of clean burning, domestic natural gas by 2030 and that 50 percent of the light and heavy-duty vehicle markets could be powered by natural gas by 2050.

Now stability is needed in federal policies promoting alternative fuels and advanced technology vehicles to allow long-term planning and investment to occur at the fleet-level. Unfortunately, in recent years we have seen numerous stop-and-go policies that have been characterized by: short-term one-year extensions of incentives; policies that have expired and then are subsequently reenacted and made retroactive; and policies that lapse and are then reinstated.

The inconsistency of these policies creates uncertainty that has a chilling effect on the very investment actions they are seeking to encourage. Vehicle and fuel-use decisions by fleets are made with a long-term view. A period of stable policies will result in permanent changes to the transportation market, ultimately making government intervention unnecessary. Without certainty on these incentives, the industry will decrease investment, resulting in job losses and higher fuel costs for consumers.

Now is the time for Congress to maintain the nation's investment in clean, domestically produced fuels and vehicles. Congress should act swiftly to provide a minimum 5-year extension of the following tax incentives:

- Tax credit that supports electric charging, natural gas, propane and biofuels infrastructure;
- Tax credit for sellers of natural gas and propane;
- Tax credit for producers of biodiesel and cellulosic biofuels;
- Special depreciation allowance for cellulosic biofuel plant property;
- Tax credit for conversion to plug-in hybrid vehicles;
- Tax credit for purchases of alternative fuel vehicles

Every Member of Congress agrees that we should stabilize gasoline prices, reduce dependence on foreign oil, and create American jobs. Again, we urge you to act now to extend these tax incentives for at least five years, which will help accomplish all three important national objectives.

Sincerely,



Alleyn Harned  
President

**Transportation Energy Partners (TEP)** is a national, non-profit policy and education organization that brings *Clean Cities* coalition leaders together with the clean transportation industry to advance policies that will reduce American dependence on petroleum-based fuels. Since 1993, the nearly 90 *Clean Cities* coalitions and their 15,000 stakeholders have played a leading role in implementing local programs and projects to deploy alternative fuels, vehicles, and infrastructure that has reduced petroleum consumption by more than 9.5 billion gallons.

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**Organizations Supporting Extension of the  
Alternative Fuel Tax Incentives:**

AAW Infrastructure Partners, L3C.  
Adams 12 Five Star Schools  
Advanced Biofuels USA  
Advanced VTech  
Affordable Solar Hot Water and Power  
AFV INTERNATIONAL, LLC  
Agility Fuel Solutions  
Air Liquide  
Alabama A&M University  
Alabama Clean Fuels Coalition  
Alabama Solar Association  
Alliance AutoGas  
Alternative Fuel Supply LLC  
Alternative Fuels Coalition of Connecticut  
American Lung Association in Tennessee  
Amerigas  
ANGI Energy Systems, LLC  
Atlas Disposal of Utah  
Bauer Compressors Inc  
Benchmark Biodiesel  
Bioroot Energy, Inc.  
Birch Studio  
Birmingham City Schools  
Black Bear Solar Institute  
Blossman Services  
Blue Bird Corporation  
Boulder Hybrids  
Breakthrough Coaching, LLC  
Breathe California of the Bay Area  
Breathe Utah  
Bronzeville Community Development  
Partnership  
Bryant & Company Inc.  
BYD Motors Inc  
Canyons School District  
Caritas Vehicle Services  
Central Florida Clean Cities Coalition, Inc.  
Chicago Park District  
City of Elmhurst  
City of La Porte, Indiana  
City of South Bend

Clean Communities of Western New York  
Clean Fuel Connection, Inc.  
Clean Fuels Consulting  
CleanFuture, Inc.  
Climate Action Alliance of the Valley  
Connecticut Natural Gas  
Colorado Association of Transit Agencies  
Columbia-Willamette Clean Cities Coalition  
Common Grounds Landscape Management, Inc  
County of Arlington, Virginia  
Crossroads Holistic Health Center  
Darling Transportation Energy Solutions  
Derry Township School District  
Diversified Fleet Services  
Dominion Energy  
Drive Electric RVA  
Dual Fuel Systems, Inc.  
East Bay Clean Cities Coalition  
East Tennessee Clean Fuels Coalition  
Eastern Pennsylvania Alliance For Clean  
Transportation  
ECO Vehicle Systems, LLC  
Empire Clean Cities  
Energy Alabama  
Energy Management Association  
EV Connect Inc.  
Evergreen Transportation, LLC  
Evolution Marketing, llc  
Fast and Easy Food Stores Inc.  
Ferrellgas  
Firefly Transportation Services LLC  
First Priority GreenFleet  
First Tennessee Human Resource Agency  
Forest Preserve District of DuPage County Forth  
Franklin County Board of Education  
Gallatin Valley Farm to School  
GAP Trucking, LLC  
Gillespie Convenience and Fuel LLC  
Green Ways 2Go  
Gresham Sanitary Service  
Guard Contracting Corp  
HBH Gas Systems  
Hocon Gas, Inc.,  
Hocon Autogas

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Honeoye Central School District  
Hunts Point Seaport and Shipyard LLC  
Icom North America  
Indigenous Energy, Inc.  
Indy Ypsi Properties, LLC  
Integral Energy  
Integrity Chiropractic  
Intergalactic Hydrogen  
JG Energy Solutions  
KAKCO CNG Fuel  
Knapaha 4  
Katahdin Environmental Corporation  
Kelsey K. Sather, LLC  
Ki Technologies, Inc.  
Kitsap County  
Knoxville Electric Vehicle Association  
Kobussen Buses Ltd.  
La Corona Fine Properties Inc  
Lamers Bus Lines, Inc  
Lancer Auto Group, LLC  
Land of Enchantment Clean Cities Coalition  
Landmark Fence CO, LLC  
Lincoln Advisors  
Lone Star Clean Fuels Alliance (Central Texas  
Clean Cities)  
Mean Green Products LLC  
Michael W Grainey Consulting LLC  
Middle Tennessee Natural Gas Utility District  
Miron Construction Co., Inc.  
Momentum Fuel Technologies  
Motiv Power Systems  
Mountain States Heat & Power  
Muncie Sanitation  
New Thought Digital Agency  
Nexus natural gas  
NGV Solutions  
NJ Clean Cities Coalition, A NJ Nonprofit  
Corporation  
Northern Colorado Clean Cities  
Northwest Express, Inc  
NWP Energy Company  
Oasis Charger  
Odyne Systems  
Office of Westchester County Legislator  
MaryJane Shimsky (NY)

Office of Westchester County Legislator Nancy  
Barr (NY)  
Ogden Polar Group / AAL Enterprises OnCue  
ONE Gas  
Orange EV  
Packsize  
Phoenix Energy Corp  
Pittsburgh Region Clean Cities  
Propane Training Services LLC  
Reco Biodiesel, LLC  
Reco Biotechnology  
Red Birch Energy  
ReFuel Energy Partners  
Renewable Compressed Natural Gas Inc.  
Renewable Connections  
Revolution CNG, Inc.  
Roaring Fork Transportation Authority  
Robinson Waste Services, Inc.  
Rocky Ridge Fire Department  
Salt Lake County Health Department,  
Environmental Health Division  
Scott Appalachian Industries, Inc.  
Sharper Energy Technologies  
Solar Alternatives Inc  
St. Louis Regional Clean Cities  
Suburban Propane National Accounts AutoGas  
Superior Gas, Inc.  
Tedesco Construction Services, Inc.  
Testa Produce, Inc.  
Texas Propane Gas Association  
The Lion Electric Co. USA  
Thompson Gas  
Timco CNG  
Time Transport, Inc.  
TimeHorse, LLC  
Town of Hornbeck  
TRA Certification, Inc.  
TransPorte, City of La Porte, IN  
Tri-State Meter and Regulator Service, Inc.  
TSN Communications  
Twin Rivers USD  
Utah Clean Cities  
Utah Food Services  
Valley of the Sun Clean Cities  
Valor Holdings LLC

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Veal Convention Services, Inc.  
Virginia Biodiesel Refinery, LLC  
Virginia Clean Cities  
Western Washington Clean Cities Coalition  
Wolff Specialties

World Language Initiative - Montana  
X3CNG Colorado LLC  
Xtropy Web Marketing, LLC  
Yellowstone-Teton Clean Cities  
Zenith Motors



## **ALTERNATIVE FUEL VEHICLE TAX CREDIT EXTENSION WOULD DRIVE BILLIONS IN ECONOMIC GROWTH AND PRIVATE INVESTMENT, CREATE THOUSANDS OF JOBS, AND IMPROVE AIR QUALITY ACROSS THE COUNTRY**

NGVAmerica prepared the following white paper to evaluate the economic costs and benefits of extending the alternative fuel tax credit (AFTC) for compressed natural gas (CNG) and liquefied natural gas (LNG) that is sold or used to power motor vehicles. NGVAmerica thanks ampCNG for providing the quantitative model and thought partnership that shaped the analysis and conclusions of this paper.

### **Executive Summary**

Renewing and extending the AFTC for CNG and LNG will spur \$9.9 billion in economic growth, the creation of 62,000 new middle-class jobs, better air quality and improved public health at a net cost to the government of \$2.4 billion. These benefits are achieved by encouraging the use of America's abundant, clean, cost-effective natural gas resources as a transportation fuel and accelerating the development of the natural gas vehicle (NGV) industry.

Until the provision expired December 31, 2016, the U.S. tax code provided a credit of \$0.50 per gasoline gallon equivalent (GGE) of compressed natural gas and \$0.50 per diesel gallon equivalent (DGE) of liquefied natural gas sold or used as a motor vehicle fuel (see 26 USC 6426 and 6427). The fuel credit also included other alternative fuels such as propane and liquefied hydrogen.

The fuel credit was effective at providing a real alternative to dirty diesel vehicles by reducing the cost of CNG and LNG used in transportation applications and encouraging operators to add more natural gas vehicles to their fleet. As Congress considers significant reform to the U.S. Tax Code, they should renew the AFTC to extend the proven benefits of this incentive. This paper demonstrates that a 5-year extension of the AFTC will provide benefits many years after the credit is no longer active. It will provide businesses with the certainty they need to make significant, long-term investments in trucks, fueling infrastructure, maintenance capabilities, and manufacturing. Additionally, a multi-year extension of the program will spur enough research and investment in advancing NGV technology and reducing equipment / manufacturing costs that the adoption of this clean technology will continue without the need for further public investment beyond the five-year extension.

For example, over the next 10 years, the private sector will add 58,000 NGVs and America will benefit from:

- **\$9.9 billion of economic growth**
- **\$5.8 billion** in additional **private sector investment** in infrastructure and equipment
- **62,000** new **middle-class jobs**
- 200.6 million metric ton reduction of greenhouse gas emissions
- 82,300 metric ton reduction of NOx emissions
- \$1.0 billion in avoided public health costs

Renewing and extending the AFTC will increase energy independence by decreasing consumption of petroleum-based fuels, stimulating US manufacturing, promoting meaningful job growth, igniting sustained economic output, improving our nation's air quality, and reducing public health costs in disadvantaged communities for years to come.

## I. Introduction

Since the discovery of significant natural gas reserves in the United States in the mid-1990s and the development of revolutionary technology such as horizontal drilling, the United States has become the world's largest producer of clean-burning natural gas. By some estimates, the US has enough natural gas supply to last the next eighty-six years. While natural gas consumption has been increasing, the US still imports about 5 million barrels of crude oil a day. The transportation sector is particularly dependent on petroleum-based diesel fuels exacerbating America's reliance on foreign oil. While natural gas currently accounts for 30% of total energy consumption, it represents just 0.30% of energy consumed in the transportation sector<sup>1</sup>. With over 1,600 natural gas fueling stations across the country<sup>2</sup> and clean natural gas vehicle (NGV) options for almost every application, now is the time to:

- Spur job creation, infrastructure investment, and incremental economic output by using more natural gas as a transportation fuel
- Decrease America's reliance on foreign oil / displace petroleum-based transportation fuels and forge a path toward energy independence
- Address environmental and health concerns like smog and greenhouse gas emissions
- Develop more sustainable sources of transportation fuel

### Jobs Creation, Infrastructure Investment, and Economic Growth

Most of the components in the manufacturing and supply chain for natural gas transportation fuels are sourced in America. Using more natural gas results in more domestic job opportunities. These jobs range from the manufacture of parts that go into natural gas vehicles and infrastructure projects to the development and operation of natural gas fueling stations and renewable natural gas (RNG) projects. With an average salary of \$52,000 per year, these are jobs that strengthen America's middle class and expand the tax base.

### Path to Energy Independence

Extending the AFTC will also give a much-needed boost to NGV deployment in Class 7 and Class 8 trucks by encouraging both infrastructure investment and truck conversions. This, in turn, will accelerate the achievement of technology advancements and manufacturing economies of scale which become self-reinforcing as costs come down. Importantly, a spike in natural gas usage in vehicle applications will have little or no impact on prices in other applications. Ultimately, economics rather than policy will provide the most sustainable path to energy independence.

### Environmental and Health Benefits

Two of the most pressing environmental issues are ozone pollution/smog from nitrogen oxide (NOx) emissions in urban areas and greenhouse gas (GHG) emissions. While diesel-burning Class 7 and Class 8 trucks account for only 1% of the vehicles on the road, they are responsible for more than 50% of NOx emissions and more than 20% of GHG emissions<sup>3</sup>. In stark contrast, NOx emissions from conventional natural gas vehicles are 50% - 90% below federal standards and GHG emissions are at least 20% lower. Using certain sources of Renewable Natural Gas (RNG), the GHG emissions can be reduced by more than 100%. These air quality improvements drive public health benefits.

### Sustainability

Recent technological developments have also allowed for sources of renewable natural gas (RNG) to be used as a transportation fuel. RNG is produced by capturing methane wherever organic materials are present, including landfills, dairy farms, wastewater treatment facilities, and other animal and crop waste systems. RNG currently accounts for roughly 35% of the natural gas used in the transportation sector. When using RNG in transportation, "well-to-wheel" GHG emissions can be reduced by more than 100%. In addition, many of the highest potential RNG development sites are dairy and swine farms, so renewal of the AFTC will support the continued development of rural communities<sup>2</sup>.

Implicit in the above analysis, two foundational elements of the case for natural gas are that (a) it is America's most plentiful clean / renewable energy resource and (b) the technology to utilize it effectively as a transportation fuel across all vehicle applications is commercially viable today. These two issues are particularly relevant in heavy duty



trucking where many legislators and other decision-makers have mistakenly assumed the inevitability of electric vehicles (EVs). The road to electrifying heavy duty applications will be long and difficult. In particular, the size and weight of the batteries that would be required to pull Class 8 loads using current technologies would be prohibitive<sup>4</sup>. While a comprehensive analysis of the future capabilities and vehicle specifications of EVs is outside the scope of this work, as of this writing, there are no plans for a commercially available heavy duty EV truck in the next two years. In the near-term, NGVs are the only real choice for displacing petroleum's dominance in heavy duty applications.

## II. Methodology

To assess the potential impact of extending the AFTC, this analysis considered a high oil price, low oil price, and reference oil price scenario based on the Energy Information Administration's Annual Energy Outlook (AEO)<sup>5</sup>. In each scenario, the model projected an annual number of NGV truck conversions, the economic and environmental impact of those new trucks, and the associated "net" government investment in our future.

The key driver of truck conversion is economics. A diesel truck will be replaced by natural gas if the ongoing operating cost savings provide a sufficient return on the investment to upgrade the engine. There are many commercial factors that impact this calculation including conversion costs, fuel price, fuel efficiency, taxes and target payback timeline (years). The model accounts for variability in these factors by vehicle application, by state, and by year. This methodology is applied both with and without the AFTC to calculate the incremental effect of the AFTC on truck conversions.

The economic impact of truck conversions, including infrastructure spending, station builds, indirect and direct job creation, and economic output were calculated using ratios from Argonne National Labs JOBS model<sup>6</sup> and published research from ICF<sup>7</sup> and Nevada Governor's Office of Economic Development<sup>8</sup>. The public health benefit of NOx emissions reductions was calculated using ratios from an Environmental Research Letter on the VW emissions scandal jointly authored by MIT and Harvard researchers<sup>9</sup>. Environmental benefits of NGV truck conversion were calculated using California Air Resources Board (ARB) Carbon Intensity (CI) scores<sup>10</sup> and NOx emissions benchmarks<sup>11</sup>.

The cost of extending the AFTC is calculated based on the cumulative volume of fuel consumed by NGVs on the road today as well as those added over the 5-year period. This investment is offset by incremental tax revenues from two sources:

- Increased excise tax receipts due to the conversion cost of new NGVs
- Increased income tax receipts associated with job creation

Importantly, these sources of incremental tax revenue will persist long after the expiration of the AFTC.

## III. Findings

Assuming the reference oil price outlook from AEO, a renewal of the AFTC for 5 years will result in more than 18,000 incremental CNG and LNG trucks by 2022, and America will benefit from:

- \$3.8 billion of economic growth
- \$2.2 billion in private sector investment in infrastructure, equipment, and project development
- ~26,000 new jobs
- 62.6 metric ton reduction in greenhouse gas emissions
- 25,030 metric ton reduction in NOx emissions
- \$300 million in avoided public health costs

Over a 10-year horizon, assuming no further public investment after the AFTC expires, there will be nearly 58,000 incremental NGVs with a commensurate increase in economic and environmental benefits:

- \$9.9 billion of economic growth
- \$5.8 billion in private sector investment
- ~62,000 new jobs
- 200.6 million metric ton reduction in greenhouse gas emissions
- 82,327 metric ton reduction in NOx emissions
- \$1.0 billion in avoided public health costs

**Table 1. Benefits of AFTC by year (Reference Oil Price Scenario)**

	Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	5-Year Total	10-Year Total
Diesel-fueled Trucks Replaced by NGVs	# trucks	3,193	3,649	3,741	3,795	3,829	3,679	5,444	7,453	9,969	12,950	18,207	57,702
Additional Private Sector Investment	million \$	355	453	486	491	446	403	516	698	831	1,146	2,232	5,825
American Jobs Created	# jobs	4,046	5,397	5,876	5,716	4,937	4,595	5,189	7,308	7,781	11,027	25,972	61,872
Average Salary	\$/job	45,546	46,961	48,397	49,666	50,840	51,708	52,781	53,921	55,187	56,695	48,398	51,996
Incremental Economic Output	million \$	569	769	874	859	762	722	845	1,210	1,335	1,923	3,832	9,868
Greenhouse Gas Reduction	million MT CO <sub>2</sub> e	10,140	12,747	13,069	13,257	13,376	12,852	19,018	26,036	34,825	45,239	62,589	200,558
NOx Reduction	MTs	4,420	5,041	5,020	5,139	5,410	5,224	7,817	10,789	14,513	18,954	25,030	82,327
Public Health Costs Avoided	million \$	49	57	58	61	65	65	99	140	193	258	289	1,044

These incremental benefits are a direct result of the government investment in our future. As modeled, the cumulative “net” investment is approximately \$2.3 billion by year 10 due to the continued growth in the tax base long after the AFTC expires. In addition, America will have made great progress towards our goal of energy independence.

**Table 2. Cost of AFTC to Government and Economy (Reference Oil Price Scenario)**

	Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	5-Year Total	10-Year Total
Eligible CNG + LNG Fuel Consumption	million DGE	742	902	1,073	1,275	1,518	1,783	2,117	2,534	3,054	3,725	5,510	18,722
Blended Tax Credit per Gallon	\$/DGE	0.56	0.56	0.56	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.56	0.17
Total Tax Credit	million \$	418	509	606	721	858	0	0	0	0	0	3,112	3,112
Less: Increase in Tax Receipts	million \$	52	66	69	67	59	54	65	90	101	137	313	761
Net Government Investment in Our Future	million \$	366	443	536	654	800	-54	-65	-90	-101	-137	2,799	2,351

<b>Memo:</b>													
Less: Public Health Costs Avoided	million \$	49	57	58	61	65	65	99	140	193	258	289	1,044
Net Cost to Economy	million \$	317	386	479	593	734	-119	-164	-230	-293	-395	2,510	1,308

As expected, the impact of the AFTC is sensitive to the oil price assumption. In the short-term, the modeled impact of AFTC in the “High Oil” scenario is smaller but the total number of NGVs on the road is higher because diesel prices drive greater demand for NGVs. Ultimately, the economic and environmental benefits of NGVs grow as they become a larger fraction of the transportation fleet mix. The AFTC is an important catalyst for this in all three scenarios.

**Table 3. Incremental Economic and Environmental Benefits in All Scenarios**

	Units	5-Year Totals			10-Year Totals		
		Reference	High Oil	Low Oil	Reference	High Oil	Low Oil
Trucks Added	# trucks	18,207	17,706	20,642	57,702	77,147	57,042
Truck Stock	# trucks	104,880	127,875	106,878	235,732	389,632	230,818

## IV. Conclusion

Extending the AFTC for natural gas provides clearly demonstrable economic and social benefits at a nominal cost to the government over the long-term. Over the next 5 years, Americans will see an increase in the number of well-paying jobs available in both urban and rural communities, greater economic growth, improved air quality, and significant investment in renewable/sustainable sources of transportation fuel. Importantly, because NGVs will still only account for ~1% of forecasted natural gas energy consumption by 2027<sup>12</sup>, securing these benefits will have no meaningful impact on the price of natural gas in other applications. Finally, the momentum that is created around NGV technology advancements, manufacturing efficiencies, and industry-wide economies of scale will help put America on a self-reinforcing path to energy independence.

Advocating the increasing use of NGVs where they benefit most.  
For the economy. For the environment. For health. For security. **For America.**

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Natural Gas Vehicles for America

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## Transit Agency Use of Alternative Fuels

Please find below a list of transit agencies utilizing covered alternative fuels in their fleets as of the latest data available in the National Transit Database. Please note that the below 149 transit agencies reported natural gas and propane use and does not include transit agencies using hydrogen or other covered fuels. This demonstrates one non-taxable constituent group able to utilize the AFTC.

Los Angeles County Metropolitan  
Transportation Authority dba: Metro  
San Diego Metropolitan Transit System  
Dallas Area Rapid Transit  
Orange County Transportation Authority  
Metropolitan Atlanta Rapid Transit Authority  
Regional Transportation Commission of  
Southern Nevada  
Foothill Transit  
MTA New York City Transit  
City of Los Angeles Department of  
Transportation  
Nassau Inter County Express  
Washington Metropolitan Area Transit  
Authority  
City of Phoenix Public Transit Department  
dba Valley Metro  
Omnitrans  
Massachusetts Bay Transportation Authority  
Mass Transit Department - City of El Paso  
Regional Public Transportation Authority  
MTA Bus Company  
Fort Worth Transportation Authority  
Sacramento Regional Transit District  
Riverside Transit Agency  
Golden Empire Transit District  
Central Ohio Transit Authority  
New Jersey Transit Corporation  
Santa Monica's Big Blue Bus  
Ride-On Montgomery County Transit  
North County Transit District  
SunLine Transit Agency  
Fresno Area Express  
Pierce County Transportation Benefit Area  
Authority  
VIA Metropolitan Transit

The Greater Cleveland Regional Transit  
Authority  
Central Florida Regional Transportation  
Authority  
Greater Richmond Transit Company  
Metropolitan Transit Authority of Harris  
County, Texas  
Long Beach Transit  
Gold Coast Transit  
Victor Valley Transit Authority  
Birmingham-Jefferson County Transit  
Authority  
Santa Clarita Transit  
METRO Regional Transit Authority  
Corpus Christi Regional Transportation  
Authority  
Central Puget Sound Regional Transit  
Authority  
Central New York Regional Transportation  
Authority  
Culver City Municipal Bus Lines  
Pace - Suburban Bus Division  
Hillsborough Area Regional Transit Authority  
Santa Cruz Metropolitan Transit District  
Kansas City Area Transportation Authority  
Arlington Transit - Arlington County  
Centre Area Transportation Authority  
City of Visalia - Visalia City Coach  
Torrance Transit System  
Jacksonville Transportation Authority  
City of Tucson  
Yolo County Transportation District  
Rock Island County Metropolitan Mass  
Transit District  
Metropolitan Tulsa Transit Authority  
Transfort

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Niagara Frontier Transportation Authority  
Sonoma County Transit  
City of Albuquerque Transit Department  
Blue Water Area Transportation Commission  
Laredo Transit Management, Inc.  
Placer County Department of Public Works  
and Facilities  
Salem Area Mass Transit District  
Access Services  
City of Glendale  
Shreveport Area Transit System  
City of Elk Grove  
Greater Lafayette Public Transportation  
Corporation  
Montebello Bus Lines  
Stark Area Regional Transit Authority  
Norwalk Transit System  
Unitrans - City of Davis/ASUCD  
St. Cloud Metropolitan Transit Commission  
Beaumont Municipal Transit System  
Santa Fe Trails - City of Santa Fe  
Springfield Mass Transit District  
Utah Transit Authority  
Central Arkansas Transit Authority  
Kings County Area Public Transit Agency  
Regional Transportation Commission of  
Washoe County  
South Bend Public Transportation  
Corporation  
Lafayette Transit System  
Greater Portland Transit District  
City of Redondo Beach - Beach Cities Transit  
Anaheim Transportation Network  
Mass Transportation Authority  
Erie Metropolitan Transit Authority  
Greater Hartford Transit District  
City of Commerce Municipal Buslines  
City of Tulare  
Rogue Valley Transportation District  
City of Tallahassee  
City of Riverside Special Transportation  
Williamsburg Area Transit Authority  
Cape Fear Public Transportation Authority  
Albany Transit System  
StarTran  
Central Oklahoma Transportation and  
Parking Authority  
Denver Regional Transportation District  
Valley Regional Transit  
Butte County Association of Governments

Williamsport Bureau of Transportation  
Mid Mon Valley Transit Authority  
Lexington Transit Authority  
Napa Valley Transportation Authority  
City of Columbia  
Denton County Transportation Authority  
Johnson County Kansas, aka: Johnson County  
Transit  
Gwinnett County Board of Commissioners  
Buncombe County  
Interurban Transit Partnership  
Cobb County Department of Transportation  
Solano County Transit  
City of La Mirada Transit  
Ozark Regional Transit  
Nashua Transit System  
South Metro Area Regional Transit  
Peninsula Corridor Joint Powers Board dba:  
Caltrain  
Central Pennsylvania Transportation  
Authority  
City of Turlock  
Metropolitan Evansville Transit System  
Handitran Special Transit Division - City of  
Arlington  
San Mateo County Transit District  
Broward County Transit Division  
Delaware Transit Corporation  
Suburban Mobility Authority for Regional  
Transportation  
King County Department of Transportation  
Central Midlands Transit  
Laguna Beach Municipal Transit  
Kitsap Transit  
Link Transit  
Santa Clara Valley Transportation Authority  
Valley Transit District  
The Tri-County Council for the Lower Eastern  
Shore of Maryland  
Lee County Transit  
Spartanburg Regional Health Services, Inc.  
Muncie Indiana Transit System  
Fayetteville Area System of Transit  
Santee Wateree Regional Transportation  
Authority  
Metro Transit System  
County of Volusia, dba: VOTRAN  
City of Glendale Transit  
Skagit Transit

Advocating the increasing use of NGVs where they benefit most.

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Jefferson Parish Department of Transit  
Administration  
Capital Metropolitan Transportation  
Authority

Ms Coast Transportation Authority  
Laketran



## Alternative Fuels Tax Credit Task Force Outreach

Please find below a list of meetings undertaken by the AFTC task force from February 1 to present. February 1 was the date of the bipartisan Finance meeting with the extender community in which they encouraged House-focused outreach on extenders. The below list accounts only for NGV America-led coalition efforts and does not include meetings of individual member companies or other trades in support of the AFTC.

### House

Higgins 2/8/19  
Sewell 2/8/19  
DelBene 2/11/19  
Hoyer 2/11/19  
Gomez 2/11/19  
Pelosi 2/12/19  
M. Thompson 2/12/19  
Boyle 2/21/19  
Rice 2/25/19  
Blumenauer 2/26/19  
Schweikert 2/28/19  
Walorski 2/28/19  
Nunes 2/28/19  
Arrington 3/1/19  
Suoizzi 3/1/19  
Reed 3/5/19  
LaHood 3/5/19  
Marchant 3/5/19  
Ferguson 3/5/19  
Wenstrup 3/5/19  
G. Moore 3/7/19  
Panetta 3/7/19  
M. Thompson 3/7/19  
Kelly 3/8/19  
Chu 3/8/19  
J. Smith 3/12/19  
Cunningham 3/13/19  
Pascrell 3/19/19  
Estes 3/19/19  
Sanchez 3/19/19  
Guest 3/19/19  
Mullin 3/19/19  
Larson—  
Holding—  
Fletcher 3/21/19

Kildee 2/8/19  
Clyburn 2/11/19  
A. Smith 3/21/19  
Tonko 3/25/19  
House Ways and Means Minority 4/3/19  
House Ways and Means Majority 5/29/19

### Senate

Isakson 2/22/19  
Cornyn 2/25/19  
Cassidy 2/26/19  
Bennet 2/26/19  
Daines 2/27/19  
Portman 3/1/19  
Toomey 3/4/19  
Menendez 3/4/19  
Crapo 3/6/19  
Hassan 3/7/19  
Scott 3/11/19  
Stabenow 3/20/19  
Roberts 3/20/19  
Lankford 3/20/19  
Whitehouse 3/21/19  
Cantwell 3/25/19  
Cortez-Masto 3/25/19  
Enzi 3/25/19

(continued on next page)

**NGVAmerica Capitol Hill Fly In April 2, participants met with:**

Lankford	Mullin	Barrasso
Cornyn	Graves	Walorski
Veasey	DelBene	Murphy
Flores	LaMalfa	B. Johnson
Weber	Glenn Thompson	Woodall
Brady	Sinema	Pascrell
Cuellar	Bacon	Walden
Burgess	Stanton	Lujan
Davids	Holding	Loebsack
S. Graves	T. Young	DeGette
Smucker	Tonko	Larsen
Burr	Pence	Brownley
Castor	Sires	Matsui
Doyle	Reed	Heinrich
Scalise	Tim Ryan	Gardner
A. Smith	Senate ENR Staff	
Costa	Isakson	
Cardenas	Cassidy	

**Bipartisan Bicameral Tax Lunch and Learn on Friday, March 15, 2019**

The AFTC Coalition received feedback from House Democrat Leadership that there were new Members on Ways and Means and new tax staff who needed to learn more about extenders before the House would take action. As such, the AFTC task force and NGVAmerica hosted a “Lunch and Learn” briefing.

The briefing invitees included bipartisan, bicameral tax, energy, and transportation staff, who heard from panelists on the importance of extenders to rural America (short line railroads) for clean air and transportation (NGVAmerica) and the importance of credits to non-taxable entities (VIA Metropolitan Transit). Stakeholders for all credits in the Grassley/Wyden bill were invited to join and were given an opportunity to explain each of their credits and provide written materials for staff. There were over 70 attendees, split evenly between staff participants and industry representing various extenders.





June 21, 2019

The Honorable John Thune  
511 Dirksen Senate Office Building  
Washington, DC 20510-4105

The Honorable Debbie Stabenow  
731 Hart Senate Office Building  
Washington, DC 20510-2204

Dear Senators Thune and Stabenow,

Thank you for the opportunity to provide comments on behalf of the Alliance for Industrial Efficiency (“the Alliance”) on how tax policy can drive investment in combined heat and power (CHP) and waste heat to power (WHP) technologies. The Alliance believes that increasing the section 48 investment tax credit (ITC) for CHP from 10 to 20 percent, and incorporating WHP into the ITC will allow more American businesses to realize the energy savings and resiliency benefits these technologies provide, as well as enhance the overall competitiveness of the American economy.

The Alliance is a coalition of business, labor, non-profit organizations, and educational institutions committed to advocating for best practices and policies to increase the use of CHP and WHP technologies. The Alliance supports the use of CHP and WHP to harness the heat that is lost during conventional power generation and industrial processes—and using it to make American businesses, manufacturers, and institutions more efficient, competitive and resilient. If CHP provided 20 percent of U.S. electricity capacity, we could create nearly 1 million high-skilled technical jobs, save over 5 quadrillion BTUs of fuel annually (equal to nearly half of U.S. the energy consumed by U.S. households), produce 200,000 megawatts of power (equivalent to 400 conventional power plants), and reduce air pollution by an amount equivalent to that produced by about half the passenger vehicles on the road.

CHP has been successfully and widely deployed in the large, heavy industries, but a huge untapped potential exists for CHP applications in smaller commercial facilities. Currently, 85 percent of CHP capacity is employed in traditional industrial applications such as the chemical, petrochemical industries, pulp and paper, food processing, and primary metals. Typically, these are larger systems located at sites where the end users are familiar with CHP technology and its benefits. However, we see the large potential for new CHP deployment in non-traditional markets such as commercial buildings, institutional settings like hospitals and universities, multi-family housing, and light manufacturing. In these markets the CHP system is small—generally under 15 megawatts. According to the Department of Energy’s 2017 analysis of U.S. technical potential for CHP, over 70 percent of the potential CHP capacity in the country is in these non-traditional markets in which system capacities are under 10 megawatts.<sup>1</sup> The prospective hosts of these smaller systems have limited CHP experience and technical resources, so users and suppliers face higher risks when seeking to realize the potential benefits of CHP installations.

A larger ITC for CHP property would reduce the level of perceived financial risk on the part of both hosts and suppliers and help these energy consumers realize the energy savings CHP can provide in non-traditional applications.

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<sup>1</sup> U.S. Department of Energy. June 2017. *CHP Technical Potential in the U.S.*



In addition, the Alliance urges the Senate Finance Committee to make a small modification to make waste heat to power property eligible for the section 48 investment tax credit. Efforts to make this change have had broad bipartisan support. In the 114<sup>th</sup> Congress, the Senate Finance Committee approved S. 913 without controversy; and in the 115<sup>th</sup> Congress, legislation including this change was championed by Senators Carper, Heller, Graham, and Casey (S. 1409). Senator Carper is updating and preparing the bill for reintroduction, and we urge its inclusion in any tax extenders package or other tax vehicle that may pass during this Congress.

It is a shame to waste energy. WHP is a clean form of energy that uses leftover heat from industrial, commercial and institutional operations to generate electricity for use onsite or for export to the electric grid. WHP systems capture waste heat from sources such as exhaust stacks, pipes, boilers and cement kilns, which would otherwise be lost to the atmosphere, and converts the waste heat into electricity. Because WHP generates electricity with no additional fuel or combustion, WHP is effectively a “zero emission” energy resource. Like wind and solar energy, waste heat is a resource we already have, but it just needs to be captured and used. However, the resource is underutilized in the U.S., since only 10 percent of the 15 gigawatts of WHP project potential across the United States has been realized to date.

Despite the fact that WHP is an innovative, zero-emission energy resource, it does not qualify for any federal tax incentive. When Congress created the ITC for CHP in the Emergency Economic Stabilization Act of 2008 (P.L. 110-343), the legislative intent was to include WHP. However, CHP and WHP have some key differences that have prevented WHP from accessing the ITC as written in law. CHP systems capture waste heat generated in the production of electricity for thermal uses, whereas WHP systems capture waste heat and energy from processes and operations and convert that energy into electricity. These differences were not well understood at the time the CHP ITC was drafted. The IRS has advised the WHP industry that only a legislative clarification is sufficient to resolve WHP’s eligibility for the ITC.

It is time for the tax code to put WHP on par with other clean energy resources, which have access to the ITC. In 2017, the Joint Committee on Taxation estimated that the WHP provision in S. 1409 would cost only \$60 million over 10 years. Including WHP under the ITC would give American businesses a much-needed incentive to make use of a vast resource that is going largely unused today.

The Alliance appreciates the Senate Finance Committee’s previous attention to ensuring that the tax code provides effective incentives CHP and WHP and looks forward to continuing collaboration on these matters. Alliance members would be happy to discuss these matters in greater depth with you and your staff.

Sincerely,

David Gardiner  
Executive Director  
Alliance for Industrial Efficiency



**To:** Finance Committee Energy Temporary Tax Policy Task Force

**From:** American Wind Energy Association

**Date:** June 21, 2019

**Regarding:** Comments on energy tax policy

## **Introduction**

We appreciate your request for comments as you work on a tax extenders bill this year. The American Wind Energy Association is the national trade association of the U.S. wind sector and we represent over 800 member companies. Wind energy now provides over 97,000 megawatts of capacity and accounts for more than 6.5% of our nation's electricity generation. The industry employs 114,000 workers in all 50 states and 500 manufacturing facilities across the country provide wind project components.

The short-term outlook for wind energy is strong, but the industry faces various longer-term challenges. These challenges include inadequate transmission infrastructure, lack of a clear price signal on carbon emissions, and cost increases due to the imposition of tariffs. A further challenge is the current lack of tax policy parity that would be exacerbated if existing, technology-specific tax incentives for mature technologies are extended before they expire. Despite the 69% decrease in the cost of wind over the last 9 years, these challenges necessitate further policy support that includes a few near-term tax policy provisions if a broader technology-neutral or parity framework is not enacted.

## **Tax Policy Parity**

An ideal energy tax framework would provide parity to technologies based on a policy principle, which is why AWEA is encouraging a widely applicable, transferable technology-neutral tax credit based on carbon emissions. However, we are open to considering other ideas to prevent a patchwork of different credit levels and timeframes in order to ensure parity for all zero-carbon technologies. Without a more level tax policy playing field business uncertainty will persist, putting at risk further economic development and investment from the wind sector.

Recognizing that a broader restructuring of energy tax policy is an ambitious undertaking that is beyond the scope of the work of the Finance Committee's energy temporary tax policy task force, we request the task force to consider three policy ideas for inclusion while being mindful of overall parity between renewable energy sources. These include limited PTC/ITC transferability, a stand-alone ITC for energy storage, and an extension of the ITC for offshore wind projects.

## **PTC/ITC Transferability**

Allowing the PTC and ITC to be transferable on a limited basis will ease the barriers in recruiting capital to finance projects as the PTC/ITC phase out. Specifically, AWEA supports the Renewable Energy Transferability Act (H.R. 2704), a bipartisan bill benefitting multiple technologies introduced by Reps. Earl Blumenauer (D-OR-3) and Darin LaHood (R-IL-18). Just as the nuclear energy PTC was modified to allow for limited transferability to facilitate project development, PTC/ITC transferability would allow developers to structure the financing of projects without relying on tax equity partnerships and their inherent tax accounting difficulties. By mitigating the additional challenges of the phase down in 2018 and 2019, the wind industry could continue to utilize the PTC/ITC to lower clean energy prices for consumers. Resolving this challenge by providing a transferable PTC/ITC is estimated to promote four to seven gigawatts (GW) of incremental wind power capacity additions through 2023, assuming the policy is in place before 2020.

## **Stand-Alone Storage ITC**

Another policy that would widely benefit other electricity technologies and enhance grid resilience is a stand-alone ITC for energy storage systems. A stand-alone tax credit is needed to offset the high cost of storage systems. Currently, only storage systems integrated with energy projects under a narrow set of conditions are eligible for a 30% ITC. For wind energy, a stand-alone storage ITC is estimated to support an additional two to four GW of incremental wind power capacity additions through 2027, assuming the tax credit is enacted by 2020. AWEA specifically supports the bipartisan Energy Storage Tax Incentive and Deployment Act (S. 1142 and H.R. 2096).

## **Offshore Wind ITC**

Finally, AWEA supports a 30% ITC for offshore wind energy production. With stable policies in place, the Department of Energy estimates the U.S. could develop a total of 22 GW of offshore wind projects by 2030 and 86 GW by 2050. Currently there is just one offshore wind project operating in the U.S. and the average cost of offshore wind energy is roughly one and a half times more than the cost of onshore wind. As our nation continues to develop this homegrown resource, we will see new jobs and investments in manufacturing and port infrastructure. A tax credit for offshore wind energy will make this nascent industry more cost-competitive and save money for the consumers who are demanding more clean energy production in their states.

## **Conclusion**

In conclusion, we urge Congress to continue the challenging but important task of streamlining energy tax policy to create a level playing field while the more immediate work of addressing tax extenders moves forward. We welcome the opportunity to further discuss our ideas and other issues with the tax policy task force and thank you for your attention to our views.



June 21, 2019

The Honorable John Thune, Co-Lead  
Senate Energy Tax Task Force  
511 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow, Co-Lead  
Senate Energy Tax Task Force  
731 Hart Senate Office Building  
Washington, DC 20510

Dear Senators Thune and Stabenow:

The Business Council for Sustainable Energy (BCSE) appreciates the opportunity to submit the following comments to the Senate Finance Committee Energy Tax Task Force on temporary tax policy in the Internal Revenue Code and respectfully requests the opportunity to share its views with you in an in-person meeting with the Task Force.

BCSE is a coalition of companies and trade associations representing the energy efficiency, natural gas and renewable energy sectors. Founded in 1992, the Council advocates for policies that expand the use of commercially-available clean energy technologies, products and services. Its membership includes project developers, industrial manufacturers, equipment and technology providers, independent electric power producers, investor-owned utilities, public power and energy and environmental service providers.

BCSE is pleased to have an independent initiative under its banner, the Clean Energy Business Network (CEBN). CEBN represents small- and medium-size businesses providing clean energy technologies and services, including 3,000+ clean energy professionals across all 50 U.S. states. A number of these professionals signed onto a letter that CEBN submitted to the Finance Committee earlier this year expressing the need for energy tax extenders; please see the enclosed file for reference.<sup>1</sup>

Together, BCSE and CEBN represent a broad range of the clean energy economy, from Fortune 100 companies to small businesses working in all 50 states and over 350 Congressional districts. On a national basis, the energy efficiency, natural gas and renewable energy sectors support over 3.5 million U.S. jobs.

BCSE and CEBN members have a wide range of energy policy interests. As a broad-based coalition of businesses and trade associations, not all BCSE and CEBN members take a position on or endorse the views offered in these comments.

We commend Congress for its accomplishments in the 115<sup>th</sup> Congress. For example, several important measures were enacted that have been long-supported by the Council and its members, including the extension of a number of clean energy tax measures. While these actions have been very positive for some of our industry members, there are still some technologies from industry sectors that BCSE represents that are now at an even larger competitive disadvantage. As Congress continues its work on budget and tax issues, the Council encourages you to maintain the positive momentum that has been achieved and use it to provide parity for the other clean energy industries our country needs.

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<sup>1</sup> Please see: <https://www.cebn.org/cebn-2019-tax-extendors-letter-senate-3-18-19/>

## Temporary Tax Policy Creates an Uneven Competitive Environment

It is essential to extend the expired energy-related tax measures. Specifically, Congress should reinstate the energy efficiency measures and provisions for the non-wind Production Tax Credit technologies (hydropower, waste to energy, biomass, biogas and geothermal). This is needed to provide a more even competitive environment for investment in these sectors.

In addition, BCSE supports a range of other energy tax measures and modifications addressing sectors such as building efficiency, including the §179D Energy Efficient Commercial Building Tax Deduction; the §25C Nonbusiness Energy Property Credit that incentivizes homeowners for efficiency upgrades and equipment purchases; and the §45L Energy Efficient New Home Construction Credit.

Further, Congress should enact legislation to clarify that the entire portfolio of energy storage (i.e., grid batteries, pumped hydro, compressed air/liquids, thermal storage) qualifies for a §48 tax credit, and should extend several transportation-related credits, including the §30C credit for alternative fuel infrastructure; the §30B credit for fuel cell vehicle purchases; and modify the §30D impacting electric vehicle purchases.

With the bipartisan introduction of the Tax Extender and Disaster Relief Act of 2019 earlier this year by Senate Finance Committee Chairman Chuck Grassley and Ranking Member Ron Wyden, as well as current legislation under consideration by the Ways and Means Committee, BCSE hopes action can be taken quickly this session.

## The U.S. Electricity Sector is in the Midst of a Rapid and Structural Transformation

The electricity sector is in the midst of a rapid and structural transformation – in terms of technology integration and its interconnection with buildings and transportation. Decentralized systems are emerging, and multiple technologies can be integrated to provide a balanced and flexible system. Further, grid-connected buildings and vehicles are responding to electricity system needs, providing new sources of system flexibility.

The sector is also being impacted by natural disasters and is facing the threat of cyber attacks. As such, the sector is looking to become more resilient, but the process is ad hoc and slow. In terms of physical resilience, there are more technology options available to fortify centralized and distributed energy systems, including advanced microgrids, bi-directional inverters and more responsive substation operations.

Statistics from the *2019 Sustainable Energy in America Factbook*,<sup>2</sup> released earlier this year by the Business Council for Sustainable Energy and BloombergNEF provides up to date, annual national information on key trends in the U.S. energy sector and serves as a reference guide of leading energy statistics for use by policymakers and other stakeholders. The *Factbook* documents several noteworthy overarching electricity sector trends and demonstrates the impact policy has had in contributing to these changes.

Energy efficiency, natural gas and renewable energy are the growth areas of the U.S. electricity sector, delivering affordable, safe and reliable power to homes and businesses. Further, investment in these sectors – combined with the deployment of a range of technologies such as energy storage, combined heat and power, and fuel cells, along with demand response, automation and digital applications – is decarbonizing the power sector, keeping electricity costs low and creating jobs.

Carbon capture, utilization and storage can also play a role, especially with new policies like the extended and expanded 45Q tax credit in place.<sup>3</sup>

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<sup>2</sup> Business Council for Sustainable Energy, *2019 Sustainable Energy in America Factbook*, available at: <http://www.bcse.org/factbook/>.

<sup>3</sup> Please see: <https://www.catf.us/2019/02/ccs-reduce-49-million-tonnes-co2-emissions/>.



The U.S. electricity generation mix is changing rapidly, at the end of 2018:

- Natural gas accounted for 35 percent of electricity generation, making it the number one source of U.S. electric power, up 25 percent over a five-year period;
- Renewable energy generation accounted for 18 percent of U.S. electricity generation, nearly on par with the nation's nuclear fleet;
- Coal generation has declined, ending 2018 at 27 percent of the power mix; and
- Looking back over the past twenty-five years, natural gas and renewable energy represent over 94 percent of U.S. electric capacity additions, pointing to a structural change in the power generation mix.

Energy efficiency investment has reached new heights:

- Total U.S. spending on energy efficiency through formal frameworks – such as utilities, Energy Savings Performance Contracts (ESPCs) and Property Assessed Clean Energy Programs (PACE) – climbed to a record level of \$15 billion in 2017 (the most recent year for which data is available).

Electricity prices are low for households and businesses:

- Consumers devoted a smaller share of their spending in 2018 towards electricity than at any time ever recorded, and the total share of household expenses dedicated to energy costs overall also hovered near an all-time low;
- The U.S. remains competitive globally for energy-intensive industries thanks to low industrial power prices;
- Natural gas prices have fallen dramatically over the last decade: industrial prices have fallen 59 percent; commercial gas prices have declined 37 percent and residential prices have declined 21 percent. In 2018, the average price was \$3.20/MMBtu.
- Prices for wind and solar Power Purchase Agreements (PPAs) have also fallen dramatically as the levelized costs decline.

Energy efficiency, natural gas and renewable energy provide U.S. jobs:

- The renewable energy, energy efficiency and natural gas sectors supported over 3 million U.S. jobs in 2017.<sup>4</sup>

### **Contributions to the Changing U.S. Electricity Sector**

The market dynamism in the electricity sector is partly credited to policy frameworks – at the federal, regional, state and local levels – combined with the new wave of activity by corporations in terms of electricity sector investment, renewable energy procurement and energy efficiency spending.

At the federal level, tax policy, along with other policies that have been implemented over the past two decades, has contributed to the changing electricity sector.

### **BCSE Supports a Range of Policies Measures to Accelerate Deployment of Affordable, Reliable and Clean Energy Sources**

BCSE supports a range of policies that share bipartisan support and we hope will be enacted in the 116<sup>th</sup> Congress in the areas of infrastructure, energy, research, development and deployment and tax policy.

BCSE also supports federal legislative action to address climate change mitigation and to improve resilience. The congressional hearings this year show a renewed and bipartisan focus on federal climate change policy. Critical to any climate change policy is that it be market-based and inclusive of the broad range of readily-available clean energy

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<sup>4</sup> [\*The 2019 U.S. Energy and Employment Report\*](#) released on March 6, 2019 by the National Association of State Energy Officials (NASEO), the Energy Futures Initiative (EFI).

technologies that can reduce emissions – affordably and reliably. Smart policies will focus on leveraging private sector investment and send strong and long-term market signals to reduce emissions.<sup>5</sup>

To maintain a diverse portfolio of energy technologies, Congress should formulate and enact stable, long-term policy frameworks, including tax policy, that will support the deployment of the full scope of clean energy technologies in a meaningful way. These measures span power generation, building efficiency and transportation and can provide significant public benefits in the areas of energy reliability and security as well as environmental, economic and jobs benefits.

Tax policy has been an effective policy tool to deploy a range of clean energy technologies. In the absence of a federal policies in other areas, the tax code may be a tool that policymakers consider to accelerate deployment and investment. As Congress moves forward, it should consider the full landscape of energy-related tax measures, as some are expired, some are soon to be expiring and some are new areas of focus.

There are many possible objectives to be considered in the formulation of tax policy, including, but not limited to:

- Deployment of clean energy
- Reduced energy use
- Emissions reductions – air quality and climate change
- Job creation
- Waste management
- Forest management
- Grid flexibility
- Resilience

Looking forward, tax policy must address the nuances of different business models and technology deployment pathways, as well as create a level playing field for all technologies to participate. New build and existing fleets should be considered in the development of tax policy and tax policy should address electric generation, transportation fuels and energy efficiency. Co-benefits beyond power production should be considered such as, grid flexibility and integration of technologies, emission reduction, hazardous waste disposal, forest management, water quality improvements, resilience, etc. Of note, technologies that provide multiple benefits may require specific measures.

BCSE will continue to explore options and opportunities to enact stable tax policy and the Council looks forward to working with members of the Senate Energy Tax Task Force to achieve these objectives. For questions or further information, please contact Ruth McCormick on the Council's staff at [rmccormick@bcse.org](mailto:rmccormick@bcse.org).

Sincerely,



Lisa Jacobson, President

Cc:

Senator Pat Roberts (R-KS)  
Senator John Cornyn (R-TX)  
Senator Bill Cassidy (R-LA)

Senator Thomas Carper (D-DE)  
Senator Sheldon Whitehouse (D-RI)  
Senator Maggie Hassan (D-NH)

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<sup>5</sup> See, BCSE Climate Change Statement, available here:

[https://www.bcse.org/images/2019%20Clean%20Air/BCSE%20Climate%20Change%20Policy%20Principles%20\(2019\).pdf](https://www.bcse.org/images/2019%20Clean%20Air/BCSE%20Climate%20Change%20Policy%20Principles%20(2019).pdf).



June 21, 2019

The Honorable John Thune, Co-Lead  
Senate Energy Tax Task Force  
511 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow, Co-Lead  
Senate Energy Tax Task Force  
731 Hart Senate Office Building  
Washington, DC 20510

Dear Senators Thune and Stabenow:

As a national non-profit organization seeking to advance residential building performance across the country, the Building Performance Association respectfully urges your support for tax incentives for homeowners that invest in sound residential energy efficiency home upgrades, tax incentives like a forward-looking, expanded 25C tax credit. The 25C tax credit is the only energy efficiency tax credit provided to consumers, everyday homeowners who struggle to pay their utility bills. Residential tax incentives are critical to reducing the upfront cost of energy efficiency improvements, thereby allowing more Americans access to the efficiency market, reduce monthly utility bills, and increase the health and safety of their homes. Energy efficiency is our nation's cleanest, most cost-effective energy resource, and energy efficiency incentives should be included in the tax code in a way that provides parity with other energy sources.

The Building Performance Association (BPA) is a national non-profit 501c3 organization that works with industry leaders in the home performance and weatherization industries to advance energy-efficient, healthy and safe homes retrofit policies, programs and standards through research, education, training and outreach.

As you know, America's homes and offices consume about 75% of all the national electricity and represent 40% of its total energy demand, thereby resulting in a significant impact on America's economy. The average homeowner spends approximately \$2,300 a year on energy bills, and a comprehensive whole-house energy efficiency upgrade will likely reduce this cost 20-25%.<sup>1</sup> To achieve these savings, however, the homeowner must invest in the upgrade measures (HVAC, insulation and air sealing, etc.). While most efficiency improvements more than pay for themselves over their lifetimes, these upfront costs remain a significant barrier for many homeowners. Since energy efficiency not only reduces a homeowners energy costs, but also improves grid reliability, reduces carbon emissions, and promotes economic growth – all public goods – a homeowner tax credit is an appropriate incentive to help homeowners make smart energy choices and improve America's residential infrastructure.

**Position on short-term and/or permanent extension of provision, proposal for modification, and policy/economic justification**

Previous tax reform proposals have focused primarily on energy production, largely ignoring the key role of energy efficiency – America's greatest energy resource. Only one tax provision currently provides an energy efficiency incentive for America's homeowners, 25C. We support a

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<sup>1</sup> [https://www.energystar.gov/index.cfm?c=home\\_improvement.hpwes\\_for\\_homeowners](https://www.energystar.gov/index.cfm?c=home_improvement.hpwes_for_homeowners) and <http://aceee.org/fact-sheet/homeefficiency-retrofit-program-feb-2009>.

forward looking extension of a tax credit for residential energy efficiency upgrades and recommend improving the 25C credit by updating goals and transitioning the credit into permanent performance-based instead of prescriptive incentive. While the 25C tax credit should be updated and improved (more on this below), the very modest tax incentive has motivated many homeowners to do more to save energy. Furthermore, the high-efficiency products that qualify for the tax incentive, are largely made in America – spurring local job growth in manufacturing as well as installations. Businesses, investors, and consumers need stable, predictable federal tax policy to create jobs, invest capital, and deploy energy efficiency technologies. Energy efficiency tax incentives will help ensure that the United States does more with less (energy) to the betterment of our economy, national security, and environment. Incentivizing energy efficiency also avoids “picking winners and losers” among resources.

We support Sen. Wyden’s “Clean Energy for America Act” in that it provides an extension and update of the 25C tax code and also amends the provision to become performance-based over time, allowing for both innovation and the acceleration of whole-house performance-based retrofits. While we would like to see modest changes to this bill, we see this legislation as setting an excellent framework for tax reform.

Energy efficiency is more than just a way to reduce energy waste and save consumers and businesses money on their monthly utility bills – it is by far the largest sector in the U.S. clean economy. A report from E4TheFuture, entitled “Energy Efficiency Jobs in America,”<sup>2</sup> found that three out of every four clean energy jobs is an energy efficiency job, and as of 2015 the energy efficiency industry employed 1.9 million Americans. The report also found that most energy efficiency jobs are created by small businesses: of the 165,000 U.S. companies engaged in energy efficiency, 70% of them have 10 or fewer employees.

A significant portion of the energy efficiency jobs in the U.S. are in the residential sector, and forty percent of those jobs involve the installation of energy efficiency products. These are the contractors – the “boots on the ground” – installing energy efficiency products and technologies and working to reduce energy waste in homes and buildings across the country. These jobs are, by their very nature, inherently local and cannot be exported. These are also the jobs created when there are new incentives for energy efficiency upgrades.

In addition to economic and jobs benefits, residential energy efficiency also plays a key role in public health. A U.S. Department of Energy report on the Weatherization Assistance Program<sup>3</sup> found that home improvements focused on energy efficiency can improve indoor air quality, which reduces respiratory illness and sick days, and boosts mental alertness and productivity for both children and adults. A report from E4TheFuture, entitled “Occupant Health Benefits of Residential Energy Efficiency,”<sup>4</sup> which reviews existing research on the link between resident health benefits and energy efficiency upgrades, also found that residential energy efficiency upgrades can produce significant improvements in asthma symptoms and help improve overall physical and mental health.

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<sup>2</sup> [https://e4thefuture.org/wp-content/uploads/2016/12/EnergyEfficiencyJobsInAmerica\\_FINAL.pdf](https://e4thefuture.org/wp-content/uploads/2016/12/EnergyEfficiencyJobsInAmerica_FINAL.pdf)

<sup>3</sup> <https://energy.gov/eere/wipo/downloads/weatherization-assistance-program-national-evaluation>

<sup>4</sup> <https://e4thefuture.org/occupant-health-benefits-of-residential-energy-efficiency/>

Given the important public goods provided by energy efficiency in job creation, health and safety, and energy reliability, it is vital that incentives to encourage and facilitate energy efficiency improvements in homes and buildings be included in the tax code.

### **Retroactive Extensions are Bad Public Policy**

The Building Performance Association does not support simple retroactive extension of the 25C tax credit. First and foremost, homeowners cannot be retroactively incentivized to make efficiency upgrades to their home. As a result, precious public dollars are provided to homeowners who did not need an incentive to be motivated to take the upgrade – no new efficiency is gained in retroactive incentives. We recommend using these funds to add further years forward to the incentive to capture more savings.

Furthermore, and just as importantly, retroactive extension of 25C put an increased burden on home performance contracting companies, which are almost exclusively small businesses. When homeowners, who have been told by their tax consultants about the retroactive credit, return to these companies in search of proper documentation, these small business owners must go back through their files to reproduce invoices. This paperwork creates an undue burden for these small companies.

The Building Performance Association believes that energy efficiency is vital to our economic growth and international competitiveness. Energy efficiency improvements pay for themselves many times over and improve energy security, help Americans save money, and create more comfortable and safe homes and buildings. We strongly urge members of the committee to support energy efficiency incentives and include them in the tax code in a way that provides for parity with other energy sources. Thank you for providing this opportunity to submit testimony. We look forward to working with you.

### **Contact Information**

Kara Saul Rinaldi

Vice President of Government Affairs, Policy, and Programs

Building Performance Association

Phone: (202) 276-1773

[kara.saul-rinaldi@building-performance.org](mailto:kara.saul-rinaldi@building-performance.org)

June 21, 2019

The Honorable Chuck Grassley  
Chairman  
Senate Committee on Finance  
United States Senate  
219 Dirksen Senate Office Building  
Washington, D.C. 20510-6200

The Honorable Ron Wyden  
Ranking Member  
Senate Committee on Finance  
United States Senate  
219 Dirksen Senate Office Building  
Washington, D.C. 20510-6200

Dear Chairman Grassley and Ranking Member Wyden:

The CEO Climate Dialogue writes to thank you for announcing the creation of bipartisan task forces to examine tax policy solutions and request stakeholder comment. While the CEO Climate Dialog does not have a position on the question of tax extenders, we are interested in informing the Energy Task Force of our recently announced principles on addressing climate change. Jurisdiction for much of this may fall to the Finance Committee. Thus, we respectfully request that these remarks be included in your record of comments and that the committee consider them in its role in addressing climate change.

The CEO Dialogue is a group of 14 U.S. and Global Fortune 500 corporations or their subsidiaries and four leading environmental nonprofit organizations who are committed to advancing climate action and durable federal climate policy in the U.S. Congress. Companies involved in The CEO Dialogue include BASF Corporation, BP, Calpine, Citi, Dominion Energy, Dow, DTE Energy, DuPont, Exelon, Ford Motor Company, LafargeHolcim, PG&E Corporation, Shell, and Unilever. With input from four leading environmental groups – the Center for Climate and Energy Solutions, Environmental Defense Fund, The Nature Conservancy, and World Resources Institute – the group is committed to working with lawmakers to explore various policies designed to address carbon pricing.

As our name implies, the CEOs of the organizations involved in the CEO Dialogue are committed to our goal and Guiding Principles. We believe it is urgent that Congress and the White House enact a long-term federal policy to protect against the worst impacts of climate change, in accordance with a set of [six Guiding Principles](#) (which we share below). The group aims to build bipartisan support for climate policies that will increase regulatory and business certainty, reduce climate risk, and spur investment and innovation needed to meet science-based emissions reduction targets.

The CEO Climate Dialogue appreciates the time and consideration the Committee on Finance is giving to energy sector tax policy issues. Effective policy solutions for addressing climate change may partially fall into your committee's jurisdiction. We are encouraged by your efforts and believe the Energy Task Force provides an important opportunity to foster learning and dialogue among multiple stakeholders, including the business community, on the need to accelerate the transition to a low-carbon economy.

Thank you for convening these task forces and for the opportunity to submit this letter for the record. We look forward to working with Congress as you address these issues.

Sincerely,

A handwritten signature in blue ink, appearing to read "T Mealey".

Timothy J. Mealey  
Senior Partner & Managing Director, Meridian Institute  
Submitted on behalf of the Members of the CEO Climate Dialogue



## Guiding Principles for Federal Action on Climate

It is urgent that the President and Congress put in place a long-term federal policy as soon as possible to protect against the worst impacts of climate change. Acting sooner rather than later allows us to meet the climate challenge at the least possible cost and put the necessary investments in place in time to meet our emissions targets. Adherence to the full set of the following principles can help ensure success:

1. **Significantly reduce U.S. greenhouse gas emissions** so that the U.S. is demonstrably a leader on global efforts to effectively limit climate change. Specifically, U.S. policy should ensure the country is on a path to achieve economy-wide emissions reductions of 80% or more by 2050 with aggressive near and mid-term emission reductions commensurate with this goal.
2. **Effective:** A key test of any climate policy is whether it will deliver timely emissions reductions across the economy and includes mechanisms that provide certainty that emission goals are met. The timeline for reductions must allow capital intensive industries to adjust in an economically rational manner. Policies must encourage investment and planning decisions consistent with the timeframes needed. Policies must focus on emissions reductions outcomes, not specific resources or technologies.

3. **Market-based:** An economy-wide price on carbon is the best way to use the power of the market to achieve carbon reduction goals, in a simple, coherent and efficient manner. We desire to do this at the least cost to the economy and households. Markets will also spur innovation, and create and preserve quality jobs in a growing low-carbon economy.
4. **Durable and responsive:** Well-designed and stable policies will deliver predictable results and increase public support over time, providing durability across time and political cycles. Policies should be adaptive over time in terms of pace and scope of reductions as our understanding of climate change, policy impact, and technological changes evolves.
5. **Do no harm:** Policies must support the competitiveness of the U.S. economy. Policies must address emissions leakage that can undermine climate objectives. Policies must also safeguard against negative impacts on biodiversity, land, and water.
6. **Promote equity:** Unabated climate change is a major threat to the U.S. economy. Therefore, policies to address climate change, which may also entail some cost, must provide transparency and promote affordability while distributing costs and benefits in such a way that promotes equity. Policies must include mechanisms to invest in American workers, and in disadvantaged communities that have the least resources to manage the costs of climate change.



Zak Kuznar, PhD  
Managing Director  
Energy Storage Development  
Duke Energy Corporation  
Charlotte, NC 28202

513 287-2312  
[Zachary.kuznar@duke-energy.com](mailto:Zachary.kuznar@duke-energy.com)

June 21, 2019

The Honorable John Thune  
Co-Lead, Task Force on Temporary Tax Provisions - ENERGY  
Senate Finance Committee  
Dirksen Senate Office Building 511  
United States Senate  
Washington, DC 20510

The Honorable Debbie Stabenow  
Co-Lead, Task Force on Temporary Tax Provisions - ENERGY  
Senate Finance Committee  
Hart Senate Office Building 731  
Washington, DC 20510

**Re: An Investment Tax Credit for Energy Storage**

Dear Senator Thune, Senator Stabenow, and Members of the Task Force:

Duke Energy appreciates this opportunity to provide comments on investment tax credits for energy storage. We recommend that any tax credit for energy storage should include provisions to enable regulated electric utility companies to account for the credit in the same manner as a non-regulated entity.

Duke Energy is one of the nation's largest energy companies. Our combined gas and electric utilities serve approximately 9 million energy customers – representing nearly 30 million Americans – in Indiana, Ohio, Kentucky, North Carolina, Tennessee, South Carolina, and Florida. Our commercial energy business operates nearly \$5 billion in wind, solar, and energy storage assets across twenty states.

Duke Energy is one of the largest operators of energy storage in the world:

- We operate 2,000 megawatts of pumped hydro storage – as large as two nuclear reactors – in South Carolina and are expanding;
- We operate the single largest renewable-energy-plus-storage asset in the nation at the Nottrees facility in Texas (153 megawatts of wind turbines and 36 megawatts of battery storage);
- We are growing our regulated utility energy storage fleet and project adding 375 megawatts of battery energy storage across our utilities, representing approximately \$600 million of new investment for the benefit of our customers; and finally,



- We are co-developing a 1,200 megawatt compressed air energy storage (CAES) project at the site of abandoned salt mines in Utah.

Presently, neither S. 1142 nor H.R. 2096 (proposed *Energy Storage Tax Incentive and Deployment Act*) include provisions that would enable broad-based adoption of energy storage across the nation. Both bills lack provisions that will enable regulated utilities to account for an investment tax credit in a manner that is at parity with a non-regulated entity. Without these provisions, utilities around the country will be stymied in their attempts to deploy grid scale energy storage for the benefit of all customers.

The accounting provisions proposed in Attachment A will ensure that any investment tax credit for energy storage allow a diversity of U.S. firms to better financing, regulatory approval, and scale, create jobs, and become more competitive in the fast-growing storage market. Given storage's transformative potential, failure to provide a tax credit normalization opt-out for utilities would be a significant oversight.

As your committee continues to develop tax policy for clean energy technologies, we urge you to support an energy storage tax credit that provides a level-playing field for all industry participants. Tax credit normalization opt-out provisions are critical for protecting consumer interests and advancing the adoption of energy storage.

We look forward to working with you and members of the committee on this important issue. Thank you again for your continued leadership.

Very respectfully,



Zak Kuznar, PhD  
Managing Director, Energy Storage Development  
Duke Energy Corporation

CC: The Honorable Chuck Grassley  
The Honorable Ron Wyden  
The Honorable Pat Roberts  
The Honorable Thomas Carper  
The Honorable John Cornyn  
The Honorable Sheldon Whitehouse  
The Honorable Bill Cassidy  
The Honorable Maggie Hassan

Enclosure: Attachment A



**Second Degree Amendment to Amendment Adding Clause (viii) to Subparagraph (A) of  
section 48(a)(3) of the Internal Revenue Code of 1986  
(Energy Storage Technology)**

**SEC. --. ELECTION FOR PUBLIC UTILITY PROPERTY.**

(a) In General.— [Paragraph \(2\) of section 50\(d\)](#) of the Internal Revenue Code of 1986 is amended—

(1). by adding at the end the following new sentence: “At the election of a taxpayer, this paragraph shall not apply to energy property described in clause (viii) of section 48(a)(3)(A) that is placed in service by the taxpayer after December 31, 2018, provided --”; and

(2). by adding the following new subparagraphs:

“(A) No election under this paragraph shall be permitted if such election is prohibited, or required by a State or political subdivision thereof, by any agency or instrumentality of the United States, or by a public service or public utility commission or other similar body of any State or political subdivision that regulates public utilities as described in section 7701(a)(33)(A) thereof.”; and

“(B) An election under this paragraph shall be made separately with respect to each investment credit property by the due date (including extensions) of the Federal tax return for the taxable year in which such property is placed in service by the taxpayer, and once made, may be revoked only with the consent of the Secretary.”

(b) Effective Date.—The amendments made by this section shall apply to property placed in service after December 31, 2018.”

June 21, 2019

The Honorable John Thune  
Co-Lead, Senate Finance Energy Taskforce  
511 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow  
Co-Lead, Senate Finance Energy Taskforce  
511 Hart Senate Office Building  
Washington, DC 20510

Dear Senators Thune and Stabenow:

The undersigned organizations are writing to share our strong support for S. 1094, the Driving America Forward Act, with the Finance Committee's Energy Taskforce.

S. 1094 would update the tax credits for plug-in and fuel cell electric vehicles to allow an additional 400,000 vehicles under the Section 30D plug-in electric drive vehicle credit (at a reduced value, maximum \$7000) and extend the Section 30B fuel cell electric vehicle credit for 10 years. These changes will stimulate manufacturer investment, support U.S. job growth and ensure consumer choice in clean, advanced transportation.

Electric drive vehicles (EVs) provide consumers and businesses with options that meet their mobility needs and save money at the pump while contributing to the nation's energy, national security and public health goals.

Continuing these incentives will create domestic jobs and contribute to U.S. leadership in EV technology, which is critical to our global competitiveness. Promoting investment in electric drive helps ensure that the U.S. does not lose its leadership in a market that we built.

These policies are working and we urge Congress to continue them.

Sincerely,

ABB Inc.  
Advanced Energy Economy  
Albemarle Corporation  
Alliance to Save Energy  
Association of Global Automakers  
The Auto Alliance  
BMW of North America  
CALSTART  
Charge Forward  
Charge Up Midwest  
ChargePoint  
Clean Fuels Ohio  
Clean Fuels Michigan  
ClipperCreek, Inc.  
CMS Energy  
Copper Development Association  
Eaton Corporation  
Ecology Center

Edison Electric Institute  
Electric Auto Association  
Electric Drive Transportation Association  
eMotorWerks, an Enel Group Company  
Environmental Law & Policy Center  
EV Drive Coalition  
FCA US, LLC.  
Ford Motor Company  
Forth Mobility  
Fuel Cell and Hydrogen Energy Association  
General Motors  
Greenlots  
Honda North America, Inc.  
Michigan League of Conservation Voters  
Motor & Equipment Manufacturers  
Association  
NAFA Fleet Management Association  
National Grid

Nissan North America, Inc.  
Panasonic Corporation of North America  
PDC Machines Inc.  
Plug In America  
Rivian  
SemaConnect Inc.  
Siemens Corporation USA  
Sierra Club  
Silicon Valley Leadership Group  
TE Connectivity Tesla, Inc.  
The Nature Conservancy  
Toyota Motor North America  
Union of Concerned Scientists  
Volkswagen Group of America



June 12, 2019

The Honorable Chuck Grassley  
135 Hart Senate Office Building  
Washington, DC 20510

The Honorable Richard Neal  
2309 Rayburn House Office Building  
Washington, DC 20515

The Honorable Ron Wyden  
221 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Kevin Brady  
1011 Longworth House Office Building  
Washington, DC 20515

Dear Chairmen Grassley and Neal and Ranking Members Wyden and Brady,

The Geothermal Resources Council (GRC) kindly urges Congress to immediately pass legislation to extend the expired federal tax credits benefiting geothermal energy.

The tax credits have remained lapsed since the end of 2017, creating confusion for the numerous industry sectors that utilize these incentives to support deployment of clean energy solutions. The continued uncertainty also undermines the effectiveness of these incentives and stands as a needless barrier to additional job creation and economic growth.

As the professional association for the geothermal industry and community, the GRC can attest to the vital importance of the tax credits to the success of geothermal energy business. Our industry needs an extension of the expired tax credit — two years retroactive (2018-19) and ideally at least two years forward (2020-21). The tax credits provide a predictable market signal for project development, which in turn leverages private investment and promotes job creation and local economic benefits across the country.

We strongly support the Tax Extender and Disaster Relief Act of 2019 introduced on February 28 by Senate Finance Committee Chairman Chuck Grassley and Ranking Member Ron Wyden. We applaud them for including an extension within “Section 107. Credit For Electricity Produced From Certain Renewable Resources”, specifically Section 107(a)(3), which benefits geothermal energy. We urge the Senate to take up this bill as soon as possible and for the House to follow suit expeditiously. Quick action on

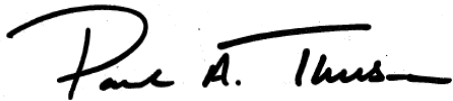
this issue is critical. Once the extenders package is passed, we look forward to a discussion on the long-term future of geothermal energy incentives.

Geothermal power is a critical source of renewable electricity for U.S. households and businesses as we transition to a clean energy future. It is affordable, reliable and plays a critical role in maintaining a functioning electric grid – due to its position as flexible, renewable, baseload resource that can complement other intermittent renewable resources. Extension of the expired tax credits will play an important role in continuing the development and support of our industry.

The GRC is a non-profit professional association for the geothermal industry and community in the USA and abroad. We were founded in 1972 and are headquartered in Davis, California. We have over 1,300 members from around the world and are working to advance our industry by supporting the development of geothermal energy resources through communication of robust research, knowledge and guidance.

We thank you for your consideration. We are available to answer questions and discuss further at your convenience.

Respectfully,



Paul Thomsen  
GRC Policy Committee Chair  
pthomsen@ormat.com



Will Pettitt, PhD  
GRC Executive Director  
wpettitt@mygeoenergy.org



The Honorable John Thune  
511 Dirksen Senate Office Building  
Washington, DC 20510-4105

The Honorable Debbie Stabenow  
731 Hart Senate Office Building  
Washington, DC 20510-2204

Mayflower Wind Energy, LLC  
281 Albany Street  
Cambridge, MA 02139  
United States of America

Tel: +1 832 337 6620  
Fax: +1 832 487 1818  
Email: [j.hartnett@shell.com](mailto:j.hartnett@shell.com)

June 21, 2019

Dear Senators Thune and Stabenow,

We appreciate the opportunity to comment on how federal tax policy can provide a strong foundation for the emerging offshore wind energy industry in the United States. We believe the creation of a 30 percent investment tax credit for offshore wind energy projects would provide the U.S. industry the opportunity to reach the scale necessary to offer clean, renewable, energy at competitive prices to American consumers.

Mayflower Wind Energy LLC (Mayflower) is a joint venture between EDP Renewables Offshore North America LLC (EDPR) and Shell New Energies LLC (Shell). Mayflower was recently successful in acquiring Outer Continental Shelf Lease Block 0521 (OCS-0521) in Bureau of Ocean Energy Management's (BOEM) federal commercial wind energy auction offshore Massachusetts (ATLW-4A) held December 13, 2018. Once constructed, the wind farm in OCS-0521 could accommodate turbines that would generate around 1.6 gigawatts (GW) of wind power capacity. The power generated can provide more than 680,000 average Massachusetts homes with clean energy each year.

As you know, this is the last year wind energy projects can begin construction in order to qualify for the production tax credit (PTC) and the investment tax credit (ITC) in lieu of the PTC at a 60 percent reduction from its original value. The PTC incentivized the creation of an industrial and infrastructure base that has enabled U.S. onshore wind power to more than triple in the past decade to become the largest source of renewable generating capacity in the country. However, the current investment tax credit of 12 percent with its expiration at the end of this year is insufficient to drive the investment needed to create the economies of scale necessary to make offshore wind energy widely competitive in the U.S. We believe that increasing the percentage and extending the timeline of the investment tax credit for offshore wind energy can drive the same kind of transformation in a relatively shorter period of time, because of the existing onshore wind and offshore energy capacity in other industries that can be adapted to offshore wind energy.

The U.S. has great offshore wind energy potential, but realizing this potential will require substantial investment in an industrial and infrastructure base to support large scale project development. With



only one 30-megawatt facility in operation, offshore wind remains a nascent industry that can become more competitive as it achieves economies of scale. Enacting an increased percent investment tax credit for offshore wind energy would incentivize the level of investment necessary to create a well-trained workforce, competitive supply chain, ports, construction ships, cabling and other infrastructure enabling the offshore wind energy to achieve economies of scale. The steady pipeline of offshore wind energy projects incentivized by this increased investment tax credit would encourage downstream investment in supporting infrastructure and supply products. This creates the industrial base that creates jobs and drives down costs for consumers. Achieving these efficiencies would introduce another source of homegrown, affordable, renewable energy into the market—giving consumers and electric utilities more choices.

The United States is well positioned to become a global leader in offshore wind energy thanks to abundant wind resources along the Atlantic and Pacific coasts; the existing related supply chains in the onshore wind, and oil and natural gas industries; and the leadership of forward-looking state and local government leaders. Congress can do its part by enacting an investment tax credit for offshore wind that drives the level of investment necessary to make the U.S. a global leader in offshore wind energy during the coming decade.

Thank you for your consideration of our views. We would be happy to meet with you, or members of your staff, to discuss the Mayflower project and the reasons we believe an investment tax credit will create a solid foundation for this industry.

Sincerely,

John Hartnett  
President, Mayflower Wind Energy, LLC



## ***Fleet Solutions for Fleet Professionals***

The Honorable John Thune  
U.S. Senate  
511 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Debbie Stabenow  
U.S. Senate  
731 Hart Senate Office Building  
Washington, D.C. 20510

Dear Senator Thune and Senator Stabenow,

Thank you for the opportunity to submit comments and recommendations to the Task Force in response to the Finance Committee's efforts to develop long-term solutions to temporary tax policies. On behalf of the NAFA Fleet Management Association, I appreciate your interest in hearing from stakeholders on energy-related tax policy issues.

We believe tax provisions that provide incentives for the use of alternatives to conventional fuels continue to be needed to encourage the continued use of alternatives, such as biodiesel, propane and natural gas, and to commercialize vehicle technologies. NAFA would like Congress to consider extending through 2020 the incentives for:

- the \$0.50/gallon alternative fuel tax credit for compressed natural gas, liquefied natural gas, propane autogas, and other alternative transportation fuels (26 USC § 6426(d) and (e), and 6427(e))
- the \$1.00/gallon tax credit for biodiesel (26 USC § 40A); and
- the 30% alternative fuel infrastructure tax credit (26 USC § 30C).

NAFA has more than 2,000 individual fleet manager Members who are employed by corporations, universities, governments agencies (federal, state, municipal, provincial), utilities, and any other entity that uses vehicles in its normal conduct of business or needs to move people or goods from one place to another.

The fleets managed by NAFA's Members run the gamut from light-, to medium-, and even heavy-duty vehicles, including sedans, vans, emergency response vehicles, utility trucks, delivery vehicles, buses, and specialized equipment. Depending on the employer's mission, these fleets may be contained to one specific geographic area, dispersed among multiple regions or states, or be in multiple countries. Regardless of the fleets' location, the similarity among them is that they are run by a NAFA Member who is responsible for each vehicle's selection, specification, acquisition, maintenance, repair, fueling, safety, and eventual remarketing.

NAFA Members are in control of more than 4.2 million vehicles and manage assets in excess of \$92-billion (USD). These vehicles travel more than 84-billion miles each year.



Fleets have been the early adopters of biodiesel and alternative fuel vehicles. A fleet's decision to adopt these fuels and vehicles has often been in response to public policies that urge, or often mandate that fleets go green. Others do so to reduce the fleets' environmental impact while improving the bottom line.

Fleets have used millions of gallons of biodiesel and acquired thousands of alternative fuel vehicles. Existing alternative fuel tax credits play a significant role in a company or government agency's vehicle and fuel purchasing decisions. It is well-documented that these credits help make the business case for biodiesel and alternative fuel vehicles. Without these credits, it is often difficult to justify the purchase of these fuels and vehicles. Unfortunately, these credits lapsed as of December 31, 2017, and many fleet managers for businesses and government agencies are unable to plan future investments as they manage current uncertainty.

Fuel tax credits have helped accelerate the adoption of natural gas and propane as motor fuels. These credits help offset the higher acquisition cost of alternative fuel vehicles by reducing operating costs and help ensure the long-term demand and commercial viability of alternative fuel technologies. With respect to propane, it allows a fleet to extend maintenance intervals and keep vehicles longer, thereby reducing capital costs over time.

The biodiesel credit is reflected in the price a fleet pays for fuel and is a significant factor in projecting fuel costs. However, without the tax credit, biodiesel can be significantly more expensive than conventional diesel fuel – making it more difficult for companies and state and local governments to justify the cost of biodiesel. In addition to supporting fleets, the biodiesel credit has proven to be a powerful policy mechanism to create jobs and help local economies.

For tax-exempt entities, such as state and local governments and nonprofits, the fuel incentives are the only incentives that directly benefit them. Tax-exempt entities cannot claim the vehicle and infrastructure credits.

As the following case studies from NAFA members illustrate, these incentives have enabled corporate and government fleets throughout the country to make the needed investment for migrating to biodiesel, natural gas, and propane.

- “Cost savings are essential for the City fleet management division. The budget approval process must have extensive justification for funds especially if there is an ask for an increase, and in most cases green products have an increased cost. The City leverages any cost savings to be used in greener products to include biodiesel (used cooking oil/renewable diesel), upfront costs for electrified vehicles, hybrid systems for medium/heavy duty vehicles and telematics. If there are no cost savings or incentives, the City will be unable to reach the climate goals set forth by the Mayor's executive orders.”

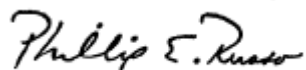
- “We have assisted fleets in the Western U.S. convert hundreds of vehicles to propane Autogas and have also installed an infrastructure network that covers 5 states and allows fleets to use Autogas while away from base. Our customers rely heavily on the credits to further their adoption, often using the credits to purchase additional Autogas conversions. It is vital that the customer can plan for the credits to allow them to budget for the equipment needed for further adoption.”
- “This rebate has helped our company procure compressed natural gas (CNG) vehicles as it was included as part of our ROI when calculating vehicle cost and lifecycle cost for our fleet. Additional examples of the benefit of these incentives provide are higher fleet fuel efficiency, CNG refueling equipment acquisitions, overall budget reductions, and cleaner air.”

The case studies above reflect the same business decisions that NAFA members are making in all parts of the country.

We strongly encourage the Task Force to recommend the renewal and extension of these tax credits and urge the Committee to move promptly to consider legislation which addresses them. NAFA believes that immediate short-term restoration of these tax credits through 2020 is needed as Congress determines the best way to structure them for the future. This extension would aid budgetary planning for fleets and provide adequate notice to account for a long-term solution, such as an eventual phase-out. We stand ready to work with you to advance any legislative vehicle that will address the alternative fuel and biodiesel tax provisions.

Thank you for the opportunity to submit these comments, we look forward to continuing to participate in the stakeholder outreach process and would appreciate the chance participate in any meetings or listening sessions the Task Force plans to hold. If you or your staff have any questions or need additional information, please feel free to contact Patrick O'Connor, NAFA's U.S. Legislative Counsel at 703/351-6222 or via email at [patoconnor@kentoconnor.com](mailto:patoconnor@kentoconnor.com).

Sincerely,



Phillip E. Russo, CAE  
Chief Executive Officer

June 2019



To: United States Senate Finance Committee Energy Task Force  
From: Solar Energy Industries Association  
Date: June 21, 2019  
Re: Investment Tax Credits

The Solar Energy Industries Association (SEIA) is writing to urge the Committee to extend the 30 percent investment tax credits (ITC) for residential and commercial solar energy property (Code sections 25D and 48). The 30 percent credit rates are scheduled to expire on December 30, 2019 and will begin phasing down on January 1, 2020.

## NAME AND GEOGRAPHIC FOOTPRINT OF ORGANIZATION

SEIA is the national trade association for the U.S. solar energy industry, which employs more than 242,000 Americans, including 19,000 veterans. We represent businesses that manufacture, install and support the development of solar energy.

SECTOR	2010	2011	2012	2013	2014	2015	2016	2017	2018
Installation & Project Development	49,934	52,503	65,165	81,827	112,143	142,383	171,533	165,174	155,157
Wholesale Trade & Distribution	11,744	17,722	16,005	19,771	20,185	24,377	32,147	30,912	29,243
Operations & Maintenance	-	-	-	-	-	-	-	-	11,164
Manufacturing	24,916	24,064	29,742	29,851	32,490	30,282	38,121	36,885	33,726
All Others	12,908	5,948	8,105	11,248	8,989	11,816	18,274	17,300	13,053
<b>TOTAL</b>	<b>99,502</b>	<b>100,237</b>	<b>119,017</b>	<b>142,697</b>	<b>173,807</b>	<b>208,858</b>	<b>260,075</b>	<b>250,271</b>	<b>242,343</b>

*Source: The Solar Foundation*

Solar's economic footprint is significant but still far from reaching its full potential. Geographically, our companies operate in all 50 states in virtually every Congressional district. The vast majority of solar companies are small businesses run by hardworking entrepreneurs. In the solar industry, this can mean everything from obtaining permits to negotiating with power purchasers, navigating ordinances that vary by city and state, raising capital and overcoming challenges interconnecting to the grid.

A stable and growing solar industry can provide a great future for American workers, and this means both white- and blue-collar jobs. Universities and community colleges now offer programs to train workers to join the solar industry. Across the country, American workers are staking their future on solar.

SEIA is seeking an extension of the existing solar investment tax credit at 30 percent followed by the existing phase-down. SEIA also supports a technology-neutral approach to renewable energy credits.

## **POLICY AND ECONOMIC JUSTIFICATION FOR THE REQUEST**

In 2015, Congress enacted extensions of the 30 percent ITC for both residential and commercial solar energy property in the Omnibus Consolidated Appropriation Act of 2015. The Act provided for extensions of the credits through December 31, 2019, decreasing to 26 percent on January 1, 2020, and 22 percent on January 1, 2021. The section 25D residential credit would expire completely after December 31, 2021.

After the enactment of the 2015 legislation, SEIA estimated that the 2015 credit extensions would lead to increased installation, jobs and deployment. Initially, this happened – in 2016, the solar industry added more than 15 gigawatts (GW) of installations, doubling annual deployment over 2015 and increased its share of the electricity market to 1.3 percent. Jobs in the solar industry rose from 208,000 in 2015 to more than 260,000 in 2016.

## **UNFORSEEN IMPACTS OF TARIFFS ON THE SOLAR INDUSTRY**

Unfortunately, the robust growth in the solar industry that was predicted in response to the 2015 ITC extensions did not continue after 2016, due primarily to the threat of and then imposition of steep 30% tariffs on imported solar panels and related materials, as well as some results of changes in the tax laws.

At the time of the 2015 legislation, there was no way for the solar industry or Congress to anticipate the high tariffs on imported solar panels, inverters and other materials (such as steel and aluminum) used in the construction of solar facilities. Whatever one's views on tariffs, it is indisputable that both the protracted threat of tariffs and the tariffs themselves were deeply damaging, injecting long-term uncertainty, freezing business deals and casting a chill over future development.

## **SOLAR JOBS LOST AND PROJECTS CANCELLED**

The effect of these changes has led directly to two years of job losses in the solar industry and the cancellation of billions of dollars in investment. According to respected market advisory firm IHS Markit, over the period 2018-2021, the U.S. will sustain a loss of 9 GW of solar facilities that would otherwise have been built, equating to \$18 billion in lost investment in the nation's economy. This negates a great deal of the value of the ITC extension – and that doesn't even include the industry-wide chill experienced during the threat of tariffs throughout 2017.

Beyond these changes, continuing the solar investment tax credit makes sense economically. While solar had strong yearly growth until the tariffs, it provides a fraction of America's energy nationally, contributing just 2.3% of electricity generation.

Even this is extremely uneven nationwide, with states such as Kansas<sup>1</sup> and Texas<sup>2</sup> beginning to take advantage of the credit. Solar is still taking hold in many states across the country and has significant room to grow. Americans on a bipartisan basis, nearly 90 percent, support more solar energy.

In the sunniest regions of the United States solar is frequently economically competitive with other new sources of electricity generation. However, solar is just beginning to compete and offer more affordable, cleaner energy in the south, Midwest and gulf states. In fact, many farmers whose income is at the mercy of volatile prices especially due to tariffs and a changing climate are increasingly relying on solar to provide more reliable income. Solar can add productivity and value to farmland, and, in many cases, coexist with other crops, native pollinators and livestock. Continuing the ITC can help a great deal at a time that tariffs are battering the agricultural industry.

We are also starting to see more solar panel factories open in Georgia, Florida and Alabama. These factories were built with the expectation that there will be strong domestic demand for their products for years to come. (Due to their size, these new panel factories require a vibrant domestic market for solar power.) Moreover, there are several Midwestern, South and Southwestern steel fabrications factories in places like Ohio, Indiana, Alabama, Texas and Arizona dedicated to producing solar racking components, an important part of solar energy. Extending the ITC will help ensure the viability of American manufacturing for solar-related products going forward.

In addition to the economic benefits that would accrue from an extension of the ITC, the carbon reduction attributes of solar are significant. Solar deployment can help reduce emissions, support local economies and well-paying jobs, reduce air pollution and provide clean energy to American families and businesses. The solar industry today reduces carbon emissions by 73.3 million metric tons per year. That is the equivalent of taking 15.6 million vehicles off the road or planting 1.2 billion trees – all led by the private sector, enterprise and hard work.

Furthermore, the ITC continues to fuel technology innovation. The surge of battery deployment over the past two years has been possible because of the solar ITC. It is also driving innovation on aggregating batteries deployed in different locations and utilizing energy stored in these batteries to supply the grid with capacity and energy services. SEIA also supports efforts to expand the ITC to include energy storage technologies.

In conclusion, the solar industry is a new American industry that, with the right policies in place such as the ITC, can provide a bright future for American business and the American people. We urge Congress to use the proven tools it has available to grow the economy, encourage innovation and spur entrepreneurship. The solar ITC works well and will continue to work if extended.

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<sup>1</sup> <https://www-1kansas.com/news/local/education/article231120918.html>

<sup>2</sup> <https://www.energymanagertoday.com/largest-solar-plant-texas-0181756/>



## ATR Opposes Retroactive Changes to the Alternative Fuels Mixture Credit

June 24, 2019

Dear Chairman Grassley, Ranking Member Wyden and Members of the Senate Finance Committee Energy Tax Extenders Taskforce:

I write to offer recommendations regarding temporary tax provisions.

**Broadly, ATR opposes tax extenders and supports efforts to repeal or make all extenders permanent** as part of the broader goal of reducing the number of distortionary credits and deductions in favor of lower tax rates.

**ATR also believes that extenders should be dealt with prospectively, rather than retroactively.** Taxpayers that have followed the law based upon reasonable statutory interpretations should be afforded certainty and fairness. Retroactivity undermines confidence in the tax system by affecting activity (in this case taxes paid, and credits claimed) that has already occurred.

**Based on these two principles, ATR opposes retroactively changing the Alternative Fuel Mixture Credit (AFMC)** as proposed in The Tax Extender and Disaster Relief Act of 2019 (S.617). Specifically, this legislation retroactively disallows taxpayers blending butane with gasoline from claiming the AFMC.

This is bad policy that interferes with ongoing litigation, denies taxpayers due process, and creates potentially arbitrary and unfair outcomes. **ATR opposes this change and urges Congress to instead consider changes to the AFMC prospectively.**

### Background

Under IRC section 6426(e), taxpayers are permitted to claim a credit for blending specified alternative fuels (such as liquefied petroleum gas (LPG), liquefied hydrogen, and liquefied natural gas) with “taxable fuels” (traditional fuels such as gasoline). The AFMC equals 50 cents per qualifying gallon and is claimed against fuel excise taxes under Section 4081.

Prior to the expiration of the AFMC on December 31, 2017, several taxpayers claimed the credit for blending butane with traditional fuels. These claims have been denied by the IRS and are currently being adjudicated through court.

### Retroactively Changing the AFMC is Bad Tax Policy

Tax policy is based on consistency, certainty, and fairness. Taxpayers routinely make decisions based on a reasonable interpretation of the law with the expectation that the future changes to the law will not be applied looking backwards.

Retroactively changing the tax code punishes taxpayers based on activity that has already occurred.

Legislation that retroactively changes the AFMC would violate this principle by affecting claims from past tax years.

This would also set the precedent that Congress can disallow taxpayers from claiming other provisions in the future and undermines confidence in the tax system.

Perversely, the proposed AFMC change could result in discriminatory treatment for similar taxpayers as the retroactive disallowance would be effective as of the date of enactment. This means a taxpayer that is successful in court and is paid the credit before enactment of the bill would not be affected. On the other hand, a taxpayer that has a claim pending in court will not be allowed to claim a credit.

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When Congress has determined the statute of a law is inconsistent with Congressional intent, they have disallowed the provision on a prospective basis. For instance, when paper manufacturers claimed a credit for mixing diesel with alternative biomass fuels, or “black liquor,” Congress disagreed with this outcome and repealed the credit prospectively.

#### Lawmakers Should Not Interfere in Ongoing Litigation

The proper place for the dispute over whether a taxpayer is able to claim the AFMC for blending butane with gasoline is the courts, not Congress. If Congress disagrees with the outcome of litigation it should change the law prospectively.

In the interim, there is significant ambiguity over whether butane qualifies for the AFMC. While the IRS has ruled that butane-gasoline mixtures do not qualify (Rev. Rul. 2018-2, 2018-2 IRB 277), this ruling is based on the theory that butane is a gasoline blendstock and gasoline blendstocks are considered a “taxable fuel” (IRC Section 4081) and therefore cannot also be an “alternative fuel.”

Nothing in law prohibits butane (or any other fuel) from being considered a taxable fuel under one section of the code and an alternative fuel in another section.

The plain reading of law suggests that butane-gasoline mixtures should qualify for the AFMC. The AFMC explicitly states that “liquefied petroleum gas” qualifies as an “alternative fuel” under Section 6526(d). Butane is considered to be an LPG in science, industry, and other Treasury regulations (reg. section 48.5041-8(f)(1)(i)).

In addition, butane qualifying for the AFMC fits with the objectives of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). This legislation was enacted with several goals including to reduce dependence on foreign oil and incentivize clean fuels.

Incentivizing the blending of butane with gasoline meets both objectives – butane can be produced from crude oil or natural gas – both of which are available in the U.S, and it is generally cleaner than burning unfinished gasoline.

Given this strong case that butane should qualify for the AFMC, Congress should let the dispute be resolved through the courts, rather than through retroactive and preemptive legislation.

#### Conclusion

As Congress considers the proper treatment of expired and expiring provisions, it is imperative that changes to the tax code are made prospectively, rather than retroactively.

Retroactively changing the Alternative Fuels Mixture Credit is unsound tax policy that denies due process for taxpayers that followed a reasonable interpretation of the law and supersedes ongoing litigation.

If lawmakers decide that Butane should not qualify for the AFMC, they should modify the credit prospectively. More broadly, Congress should take steps to limit the number of distortionary and targeted tax provisions in the code to create a tax system that is fairer, simpler and more equitable.

Thank you for your consideration. If you have any questions, please feel free to contact me or ATR’s Director of Tax Policy Alex Hendrie at 202-785-0266.

Onward,



Grover G. Norquist  
President, Americans for Tax Reform



# CARBON CAPTURE COALITION

June 21, 2019

The Honorable John Thune, Co-lead  
The Honorable Debbie Stabenow, Co-lead  
Finance Committee Energy Task Force  
Washington, D.C. 20510  
VIA Email: [energy\\_taskforce@finance.senate.gov](mailto:energy_taskforce@finance.senate.gov)

Dear Senators Thune and Stabenow:

The Carbon Capture Coalition is a nonpartisan partnership of over 60 energy, industrial, and technology companies, labor unions, and conservation, environmental, clean energy and agricultural organizations that supports commercial adoption of carbon capture technology (see attached list of Coalition participants and observers). The Coalition was created to help realize carbon capture's full potential as a national strategy for reducing carbon emissions, supporting domestic energy and industrial production and protecting and creating high-wage jobs. The Coalition's diverse participants work together to achieve a common goal: Economy-wide deployment of carbon capture from industrial facilities, power plants and ambient air through financial incentives and other policies that drive private investment, innovation and cost reductions in carbon capture, pipeline transport, utilization, removal and storage.

On behalf of the Carbon Capture Coalition, we submit the following comments for the consideration of the Energy Tax Taskforce:

The Carbon Capture Coalition achieved its top federal legislative priority in February 2018 with passage of landmark legislation in Congress to reform and expand the U.S. Federal Section 45Q tax credit for the storage and beneficial use of carbon captured from industrial facilities, power plants and ambient air. The reform of the 45Q incentive was enacted as part of the broader Bipartisan Budget Act of 2018. This legislation, known as the FUTURE Act, was introduced by Senators Heidi Heitkamp (D-ND), Shelley Moore Capito (R-WV), Sheldon Whitehouse (D-RI) and John Barrasso (R-WY). It was cosponsored by one-fourth of the U.S. Senate, including 18 Democrats, six Republicans and one Independent. A companion bill, the Carbon Capture Act, was introduced in the House by Congressman Mike Conaway (R-TX) and cosponsored by 50 members, including 35 Republicans and 15 Democrats.

The bipartisan support for both bills was unprecedented for legislation of its kind, spanning the political spectrum and all regions of the country and underscoring the breadth of support for carbon capture.

Key provisions of the reformed 45Q tax credit include:

- Increases the credit value incrementally over ten years from \$10 to \$35 per metric ton of CO<sub>2</sub> stored geologically through enhanced oil recovery (CO<sub>2</sub>-EOR) and from \$20 to \$50 per ton for saline and other forms of geologic storage;



- Provides \$35 per metric ton of emissions reduced through the beneficial use of captured carbon for purposes beyond CO<sub>2</sub>-EOR;
- Allows projects involving carbon monoxide (CO) capture and direct air capture to qualify for the credit;
- Authorizes the program for carbon capture projects that commence construction within six years of enactment, and projects meeting that timeframe can claim the credit for 12 years after being placed in service;
- Reduces the minimum eligibility threshold for qualified facilities from 500,000 metric tons of CO<sub>2</sub> or CO captured annually to 100,000 tons for industrial facilities, expanding participation to additional industry sectors by making smaller industrial facilities eligible to claim the credit (retains the 500,000-ton eligibility threshold for electric generating units);
- Establishes a threshold of 25,000 metric tons for CO<sub>2</sub> or CO captured and put to beneficial uses other than EOR;
- Awards the credit to the owner of the carbon capture equipment and allows transfer of the credit to other entities responsible for managing the CO<sub>2</sub> to provide greater flexibility for companies with different business models to utilize the tax credit effectively, including cooperatives and municipal utilities; and
- Increases financial certainty for investors in carbon capture projects by eliminating the previous cap on credits, which the original 45Q credit was about to reach.

## **Enhancing Monetization of 45Q and Other Tax Credits**

The ability of project developers and investors to monetize the full value of the reformed and expanded 45Q and other tax credits is paramount to project finance and feasibility, and Coalition recommends that Congress adopt the following policies.

### ***Preventing the Disallowance of 45Q under the BEAT Tax***

The Coalition recommends that Congress amend the Internal Revenue Code to prevent disallowance of 45Q under the Base Erosion and Anti-Abuse Tax (BEAT), treatment already afforded investors claiming the Production Tax Credit for wind energy and the Investment Tax Credit for solar energy. Important potential tax equity investors in carbon capture projects may be subject to BEAT, which was revised in major tax reform legislation in 2017 to lower the threshold that triggers application of the new tax to multinational companies. Business tax credits such as 45Q can be applied to offset up to 80 percent of a company's BEAT obligation. However, this provision applies only through 2025, and the Coalition supports an additional fix that would extend through the duration of the 45Q tax credit.

### ***Expanded Transferability***

Congress should provide additional flexibility to the existing transfer provision in the 45Q statute by including additional taxpayers who are involved in the carbon capture transaction to be allowable as transferees. Additional flexibility will make it easier for investors in carbon capture equipment to transfer the credit to taxpayers with tax liability, creating a larger market for monetizing 45Q tax credits and, thus, a larger pool of eligible investors in projects.

A new credit transfer provision for 45Q could be modeled on the existing transfer provision found in Section 45J(e) of the Advanced Nuclear Tax Credit, which serves as a precedent for a more flexible transfer standard for 45Q. Potential transferees for such tax credits may include persons who have an ownership interest in the carbon capture facility; provided equipment or services in the construction of such a facility; provided transportation of CO<sub>2</sub> from the facility or transmission or distribution of electricity

from such facility; purchased electricity or products from such a facility; or provides financing for the qualified facility or carbon capture equipment.

#### ***Providing a Revenue-Neutral Refundable Option***

The Coalition recommends that Congress provide a revenue-neutral refundable option for the 45Q tax credit. Such an option would allow project developers the choice to convert the 45Q tax credit into a cash grant, which would create certainty for project developers concerning the monetization and value of the tax credit. Carbon capture projects have high capital costs, and many carbon capture project developers and financiers may have federal tax credits that they are unable to use or that must be carried over to later years. Such a policy should be structured to be revenue neutral for the federal government by allowing a project developer to take the credit as cash for a limited number of years, instead of claiming the tax credit for the full 12 years allowed under the current statute.

#### ***Establishing a Bonding Mechanism***

Congress should consider a proposal to establish “American Energy Bonds” that would allow project developers and energy companies to more efficiently monetize federal tax credits, including 45Q, to encourage additional private investment in our nation’s energy infrastructure. Under the proposal, energy companies would be allowed to make interest payments in the form of tax credits, provided they invest the proceeds of the bonds in qualified American energy infrastructure projects, including carbon capture and utilization. Once assigned to the bondholder, the energy company would no longer be eligible to claim the credit, which would go to the bondholder. Importantly, this structure would not create a new tax credit or expand any pre-existing credits.

### **Technical Corrections to Expand Eligibility and Access**

Technical corrections are also needed to ensure that carbon capture and utilization projects are eligible for and have access to available federal incentives.

#### ***Eliminating the 25,000-Ton Threshold in 45Q for Carbon Utilization Projects***

The Coalition recommends that Congress eliminate the 25,000-ton annual minimum CO<sub>2</sub> capture threshold for carbon utilization projects seeking to claim the 45Q tax credit. In the FUTURE Act, Congress added carbon utilization to 45Q to incentivize the development and deployment of new applications for using captured carbon beyond its traditional use in CO<sub>2</sub>-EOR, and a minimum threshold of 25,000 metric tons of annual capture and a maximum threshold of 500,000 tons were established to determine eligibility. Since passage of the legislation last year, it has become clear, based on technical input from technology companies, that most projects in the nascent carbon utilization field will simply not be able to reach the 25,000-ton threshold. This creates the risk that new 45Q program will fail to accomplish the intended goal of catalyzing the demonstration and deployment of new carbon utilization technologies in the commercial marketplace.

#### ***Fixing the 48A Tax Credit to Enable Carbon Capture Retrofits of Existing Power Plants***

The Coalition endorses proposed reforms to the existing 48A Advanced Coal Tax Credit contained in the bipartisan Carbon Capture Modernization Act introduced recently in the Senate and House (S. 407 and H.R. 1796). The Act corrects design flaws in the 48A program that have made it impossible for companies to access existing incentives to retrofit currently operating coal-fired power plants with carbon capture technology. Fixes in the legislation include removing efficiency requirements that are incompatible with carbon capture (while still achieving far greater emission reductions than from efficiency improvements alone), lowering the percentage CO<sub>2</sub> capture requirement for existing units to improve project

economics, lowering the size threshold for eligible projects and directing the Treasury Department to offer additional application rounds to reallocate available 48A credits.

In addition to specific provisions in the legislation, the Coalition recommends that Congress reduce the threshold for eligible projects to 50 MW.

In 2018, coal-fired electricity generation accounted for 30 percent of global CO<sub>2</sub> emissions. A majority of that generation is found today in Asia's young and growing coal fleet, where average power plants are only 12 years old and will require carbon capture retrofit solutions to meet midcentury emissions reduction goals. Innovation knows no borders, and it is vital that the U.S. continue to lead the way in commercial deployment of technologies to manage carbon emissions from existing power plants. Enacting these proposed reforms to the federal 48A tax credit would free up an estimated \$1.7 to \$2 billion in available funding for tax credits, allowing U.S. power companies to pursue multiple additional carbon capture projects and build on the success of NRG Energy's world class Petra Nova project at a power plant near Houston.

### **Federal Policies to Complement 45Q**

Additional federal incentives and other policies can be combined with the 45Q tax credit to help more carbon capture and utilization projects reach financial feasibility than with just the 45Q tax credit alone. The following policies would complement 45Q by reducing the cost of debt and equity, thus providing project developers with access to capital on more favorable terms.

#### ***Making Carbon Capture Projects Eligibility for Tax-Exempt Private Activity Bonds***

The Carbon Capture Coalition endorsed the bipartisan Carbon Capture Improvement Act introduced in the Senate and House last Congress, which would make carbon capture projects eligible for private activity bonds (PABs), thereby allowing project developers access to tax-exempt debt to finance their projects and thus lowering their capital costs. PABs are a common, well-accepted financing technique used to finance airports, seaports, mass transit, water pollution control, hazardous waste disposal, and solid waste facilities (including sulfur scrubbers in coal power plants). However, carbon capture equipment cannot now be financed with PABs. Roughly two-thirds of the cost of capturing a ton of CO<sub>2</sub> is repayment to investors and lenders who funded the carbon capture plant. PABs reduce annual debt payments by both lowering interest rates and extending the repayment period. Federally authorized access to PABs is a permanent incentive, not subject to the on-again, off-again nature of federal tax credits.

The Carbon Capture Improvement Act was introduced on June 10, 2019.

#### ***Providing for Eligibility of Carbon Capture Projects for Master Limited Partnerships***

The Coalition supported the bipartisan MLP Parity Act when it was introduced in the Senate and House last Congress. The Act would make a broad range of clean energy technologies eligible for the MLP structure, including carbon capture. MLPs combine the tax benefits of a partnership with a corporation's ability to raise capital in public markets. Eligibility for MLPs would allow carbon capture projects to reduce the cost of equity, providing access to capital on more favorable terms. MLP financing has backed more than \$500 billion worth of U.S. oil and gas pipelines and some coal-related infrastructure. Typically, annual funds raised in the tax equity partnership market through tax credits has been \$5 to \$10 billion. By contrast, typical annual issuances in the MLP market have been in the \$50 billion a year range. Like PABs, eligibility for MLPs would provide a permanent federal incentive, unlike tax credits.


The MLP Parity Act was introduced on June 13, 2019.

We appreciate this opportunity to submit comments to the Energy Task Force. Please let us know if we can answer any questions or provide additional information. We would also be pleased to arrange for industry, labor and NGO members of the Carbon Capture Coalition to meet with you or your staff as a follow-up, if that would be helpful to you.

Sincerely,



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# CARBON CAPTURE COALITION

## Participants

AFL-CIO  
Air Liquide  
Air Products  
AK Steel  
American Carbon Registry  
ArcelorMittal  
Arch Coal  
Archer Daniels Midland Co.  
Baker Hughes, a GE Company  
BPC Action  
Carbon180  
Carbon Wrangler LLC  
Clean Air Task Force  
ClearPath Foundation  
Cloud Peak Energy  
Conestoga Energy Partners  
Core Energy LLC  
EBR Development LLC  
EnergyBlue Project  
Energy Innovation Reform Project  
Glenrock Petroleum  
Great River Energy  
Greene Street Capital  
Impact Natural Resources LLC  
ION Engineering LLC  
International Brotherhood of  
Boilermakers  
International Brotherhood of  
Electrical Workers  
Jackson Hole Center for Global  
Affairs  
Jupiter Oxygen Corporation  
Lake Charles Methanol  
LanzaTech  
Linde LLC

Mitsubishi Heavy Industries  
America, Inc.  
National Audubon Society  
National Farmers Union  
National Wildlife Federation  
NET Power  
New Stel International, Inc.  
NRG Energy  
Occidental Petroleum Corporation  
Peabody Energy  
Prairie State Generating Company  
Praxair, Inc.  
Renewable Fuels Association  
Shell  
SMART Transportation Division  
(of the Sheet Metal, Air, Rail and  
Transportation Workers)  
Summit Power Group  
Tenaska Energy  
The Nature Conservancy  
Third Way  
Thunderbolt Clean Energy LLC  
United Mine Workers of America  
United Steel Workers  
Utility Workers Union of America  
White Energy  
Wyoming Outdoor Council

## Observers

Algae Biomass Organization  
Carbon Engineering  
Carbon Utilization Research Council  
Cornerpost CO2 LLC  
Enhanced Oil Recovery Institute,  
University of Wyoming  
Institute of Clean Air Companies  
Melzer Consulting  
Tellus Operating Group  
World Resources Institute

## **Exelon Corporation**

### **Policy Submission to the Energy Task Force on Extenders**

#### Policy Summary

Exelon Corporation (“Exelon”) submits the following proposal and requests consideration by the Senate Finance Committee’s Energy Tax Policy Task Force.

Every day, even during the hottest days of summer and the coldest nights of winter, the nation’s nuclear fleet keeps the lights on for millions of Americans around the clock. It supports 475,000 jobs and helps keep electricity prices stable for consumers. And the fleet does all of this while emitting no carbon into the atmosphere—a powerful tool in the fight against climate change.

Despite this, America’s nuclear fleet is at a crossroads. The nation’s fleet of 97 nuclear plants is operating more efficiently and safely than ever, but low-natural gas prices and an influx of subsidized renewable resources has led to unusually low power prices. This challenge has been exacerbated by the fact that demand for electricity has been stagnant due to the economic downturn and the success of energy efficiency programs. As a result, roughly half of the nation’s nuclear plants – particularly those in merchant power markets – are under moderate or high risk of premature retirement. If policymakers do not act, our nation’s economy and environment will be severely impacted.

For nearly four decades, federal tax policy has incentivized the development of non-emitting renewable electric generation sources through tax credits for wind, solar, and other renewable resources. This policy, however, has ignored the largest source of non-emitting generation: nuclear power.

That’s why national and international experts in climate policy have called on policymakers to ensure that the existing fleet of nuclear plants continues to operate as long as possible to speed efforts to decarbonize the economy.

A bipartisan, bicameral solution to this problem exists: The Nuclear Powers America Act (S. 1134/ H.R. 2314) would provide a new Investment Tax Credit (ITC) for existing nuclear power plants. In April, H.R 2314 was introduced by Reps. Darin LaHood and Cherie Bustos along with 22 current cosponsors and S. 1134 was introduced by Sens. Cardin and Cramer. The bill would amend Internal Revenue Code Section 48 to expand the ITC for taxpayers that invest in

qualified existing nuclear energy property. Currently, ITCs are available only for new energy sources including solar, wind, geothermal, fuel cell, and combined heat & power.

Exelon thanks committee members for considering this important proposal. Exelon representatives look forward to the opportunity to meet with Energy Task Force members and staff.

### Exelon

Exelon is the nation's leading electricity service provider and one of the largest competitive U.S. power generators. In addition to our nuclear fleet, Exelon facilities generate electricity from natural gas, wind, solar, and hydropower. Our company makes one out of every nine megawatts of zero-emission generation, twice as many megawatts of clean generation as our nearest peer. The distribution utilities in our company currently provide electricity to 10 million residential, public sector, and business customers. Our competitive business provides electricity and natural gas services to over two million customers in 48 states as well as Washington, D.C. and Canada. Our company employs more than 33,000 people throughout the U.S.

Exelon operates the largest fleet of nuclear power plants in the U.S. with 22 reactors, nearly one-quarter of all plants in the country. Exelon's nuclear plants operate with a 94.6 percent capacity factor, the highest in the country.

### Policy and Economic Justification

Nuclear power is the nation's most reliable generation, meeting demands for uninterrupted energy over extended periods. Nuclear power plants operate at much higher capacity factors than renewable energy sources or fossil fuels. Capacity factor is a measure of what percentage of the time a power plant produces energy. Nuclear plants run more often than other fuel sources primarily due to two factors: first, they are turned off to refuel only once every 18 to 24 months, which is the industry's most efficient cycle, and second, nuclear plants are built to withstand extreme weather including tornados, hurricanes, floods, and ice.

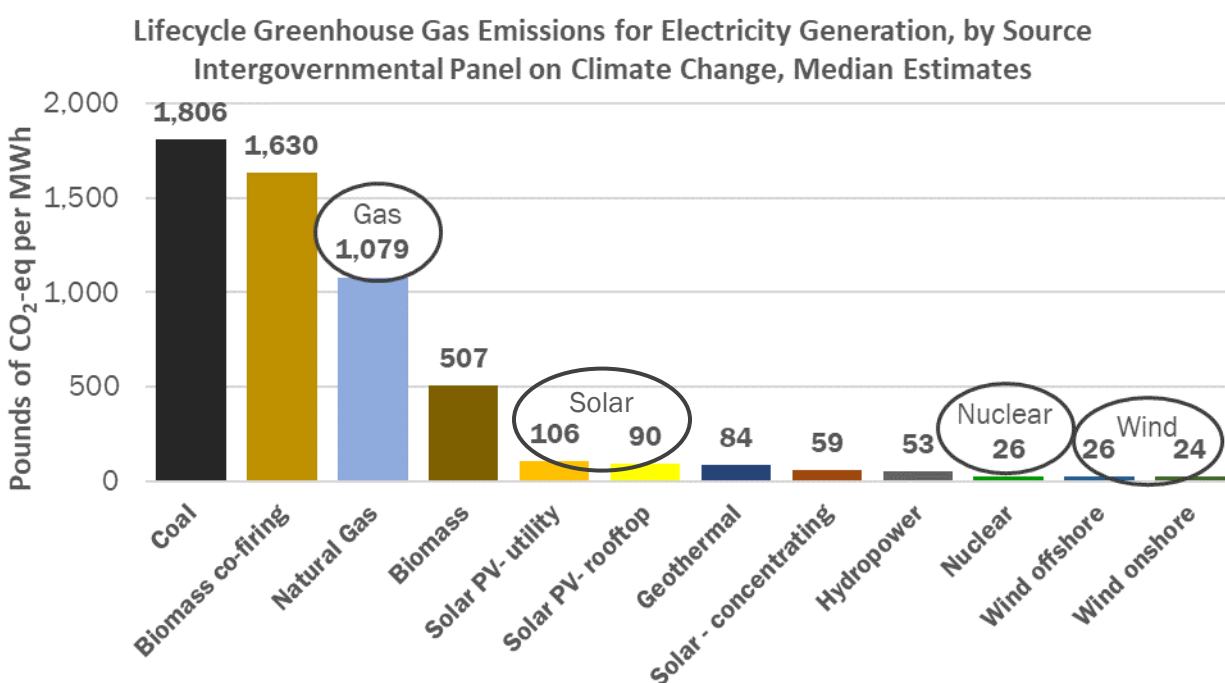
In 2016, nuclear power plants in the United States had an average capacity factor of 92.3 percent, meaning they operated at full power on 336 out of 365 days per year; plant maintenance and refueling occurred during the other 29 days. In contrast, U.S. hydroelectric facilities delivered power 38.2 percent of the time (138 days per year), wind turbines 34.5 percent of the time (127 days per year) and solar electricity arrays 25.1 percent of the time (92

days per year).<sup>1</sup> The fuel source for these other carbon-free resources is dependent on Mother Nature, which has only become less certain given the impacts of climate change.

Former Secretary of Energy Ernie Moniz recently weighed in on a system dependent upon renewables. "The idea we're going to have by 2050 ... a 100 percent renewable system is not realistic, straightforwardly, certainly at a reasonable cost," Moniz stated about proposals recently put forward.

Even plants powered with coal or natural gas only generate electricity about half the time. Their lower capacity factors result from factors including fuel costs and seasonal and nocturnal variations in demand. Nuclear is the clear winner with respect to reliability.

On a lifecycle basis, nuclear power has lower greenhouse gas emissions than solar and the same greenhouse gas emissions as offshore wind (IPCC 2014), making it one of the cleanest forms of electric generation.<sup>2</sup>



In a notable reversal to long-held policy positions, groups including the U.N. International Energy Agency, the Natural Resources Defense Council, the Union of Concerned Scientists, World Resources Institute and the Nature Conservancy have recently acknowledged the

<sup>1</sup> U.S. Energy Information Administration. (2019, March). Electric Power Monthly. Retrieved from [https://www.eia.gov/electricity/monthly/current\\_month/epm.pdf](https://www.eia.gov/electricity/monthly/current_month/epm.pdf).

<sup>2</sup> IPCC 2014, Annex III Table A.III.2 [https://archive.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc\\_wg3\\_ar5\\_annex-iii.pdf](https://archive.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_annex-iii.pdf), converted to pounds per MWh.



importance of nuclear energy to the effort to fight climate change and find a path to sustainability.<sup>3,4,5</sup>

### Nuclear Plants at Risk

Half of the U.S. nuclear fleet is at risk of premature closure for economic reasons because their value as a clean resource is not recognized in most jurisdictions.<sup>6</sup> Since 2013, eight nuclear stations have been retired: Crystal River (FL), Fort Calhoun (NE), Kewaunee (WI), Oyster Creek (NJ), Pilgrim (MA), San Onofre 1 & 2 (CA), and Vermont Yankee (VT). The retirement of these plants has taken six thousand megawatts off from the grid.

Another 10 units have announced that they will retire prematurely, threatening to take another 10,200 megawatts off the grid. States have prevented the premature retirement of another 12 units totaling 11,771 megawatts by compensating them for their clean air value, but these programs are being challenged before the Federal Energy Regulatory Commission, which has rejected similar state efforts. Finally, S&P Global has identified 27 additional units as being at high or moderate risk of an early shutdown, which would bring another 27,307 more megawatts off the grid.<sup>7</sup>

According to ScottMadden Management Consultants, if all the “at risk” nuclear plants are allowed to close, “nearly 90% of the wind and solar output that has been added since 2008 would be given back to fossil sources. Without intervention, the United States will have very little progress to show for its efforts and investments in renewables over the past decade.”<sup>8</sup>

According to Bloomberg New Energy Finance,<sup>9</sup> 50% of nuclear power plants -- 54 gigawatts of capacity -- are operating at a loss based on market deficiencies and questionable regulatory decisions that fail to recognize the clean and reliable baseload power that nuclear energy

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<sup>3</sup> The Nature Conservancy (2018, October). The Science of Sustainability: Exploring a Unified Path for Development and Conservation.

<sup>4</sup> Union of Concerned Scientists (2018, November). The Nuclear Power Dilemma: Declining Profits, Plant Closures, and the Threat of Rising Carbon Emissions.

<sup>5</sup> Woolard, John (2019, June). Beyond Renewables: How to Reduce Energy-Related Emissions by Measuring What Matters. *World Resources Institute*.

<sup>6</sup> Fitzpatrick, R. (2018, April 10). Nuclear Closures Undo Years' Worth of Climate Progress – Third Way.

<sup>7</sup> Clemmer, S., Richardson, J., Sattler, S., & Lochbaum, D. (2018, November). The Nuclear Power Dilemma: Declining Profits, Plant Closures, and the Threat of Rising Carbon Emissions. *Union of Concerned Scientists*.

<sup>8</sup> ScottMadden (2019, June). Spinning Our Wheels: How Nuclear Plant Closures Threaten to Offset Gains from Renewables. Retrieved from <https://www.scottmadden.com/insight/spinning-our-wheels/>

<sup>9</sup> Steckler, N. (2016, July 07). Reactors in the red: Financial health of the US nuclear fleet. *Bloomberg New Energy Finance*. Retrieved from <http://docplayer.net/26060517-Reactors-in-the-red-financial-health-of-the-us-nuclear-fleet.html>

provides. These plants are competing against fossil and renewable generation that are subsidized through the Federal tax code and, in many cases, state portfolio mandates.

A recent study by The Brattle Group<sup>10</sup> looked at the impact if four plants in Ohio and Pennsylvania close prematurely. In addition to the loss of 3,000 high-paying jobs, the study found that these closures would serve to reverse more than two decades of environmental benefits gained from solar and wind resources in the region — 25 years of commitments to carbon-free energy solutions erased, along with billions of dollars in customer and taxpayer investment accumulated over time.

The world is on track to lose a quarter of its existing nuclear capacity by 2025, leaving clean energy and climate goals in jeopardy, according to a report by the U.N.'s International Energy Agency ("IEA").<sup>11</sup> The Paris-based IEA suggests that this reduction in existing nuclear power capacity will be lost in six years and an additional loss up to two-thirds of existing nuclear capacity by 2040.

The share of nuclear energy in the United States' electricity fleet could fall from around 20% of power generation today to just 8% by 2040 given current trends, IEA analysts conclude.

### Economic and Security Impact

The nuclear industry supports 475,000 jobs right here in the United States – more than any other segment of the power generation sector – and adds \$60 billion to the country's Gross Domestic Product. The commercial nuclear industry also contributes more than \$10 billion in federal and \$2.2 billion in state taxes each year.

Most of these plants are the economic core of rural American communities. Each plant employs between 400 and 700 Americans at wages that are an average of 36 percent higher than the prevailing local salary rate. On average, each plant contributes \$40 million in annual payroll and \$470 million in revenue from buying local goods and services. They also provide much-needed funding for local community services like schools, roads, and law enforcement.

The economic and societal impact of existing nuclear power plants cannot be understated. For example, Michigan's four nuclear reactors — D.C. Cook 1 & 2, Fermi, and Palisades — generate 27 percent of the state's electricity while emitting no greenhouse gases. Representing roughly

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<sup>10</sup> Murphy, D., & Berkman, M. (2018, April). Impacts of Announced Nuclear Retirements in Ohio and Pennsylvania. *The Brattle Group*. Retrieved from [https://nei.org/CorporateSite/media/filefolder/resources/reports-and-briefs/Impacts\\_of\\_Premature\\_Nuclear\\_Retirements\\_in\\_Ohio\\_and\\_Pennsylvania.pdf](https://nei.org/CorporateSite/media/filefolder/resources/reports-and-briefs/Impacts_of_Premature_Nuclear_Retirements_in_Ohio_and_Pennsylvania.pdf).

<sup>11</sup> International Energy Agency. (2019, May). Nuclear Power in a Clean Energy System. Retrieved from [https://www.eenews.net/assets/2019/05/28/document\\_ew\\_01.pdf](https://www.eenews.net/assets/2019/05/28/document_ew_01.pdf)

4,000 megawatts of capacity, these plants make enough electricity to power 4 million Michigan households. What's more, they account for a staggering 91 percent of all carbon-free electricity generated in the state.

Another report by the Brattle Group,<sup>12</sup> "Nuclear Power Plants' Contribution to the Michigan Economy," estimates the overall economic value of Michigan's nuclear plants, as well as their contributions to limiting greenhouse gas emissions in the state. The findings speak for themselves. Michigan's nuclear industry accounts for 3,200 full-time jobs (both direct and secondary), reports Brattle, and provides almost \$23 million in net state tax revenues annually. The data also reveals that these plants contribute more than a half-billion dollars to the state's gross domestic product, a key indicator of economic health.

On top of that, without the electricity generated by Michigan's nuclear plants, the Brattle Group finds that average annual carbon dioxide emissions would be about 25 million tons greater than currently. Economically speaking, that is worth an additional \$1.085 billion annually, valued at recent U.S. government estimates for the social cost of carbon dioxide emissions.

### Nuclear Investment Tax Credit

The House and Senate bills introduced this year provide a nuclear ITC that equals 30% of certain nuclear energy-related expenditures made by the taxpayer for each taxable year through 2023. The credit rate is reduced starting in 2024 to 26%, 22% in 2025 and further reduced to 10% for all years thereafter. This proposal is based off the solar ITC.

This credit would be available to existing nuclear plants that apply for an operating license renewal before 2026. The credit is subject to recapture for plants that take advantage of the credit but still shut down prematurely.

The proposal would allow plants that are owned by government bodies or electric co-ops to elect to transfer the credit to eligible project partners including other plant owners, suppliers, and contractors that contribute to operating or refueling the plant. This credit transferability provision is modeled after the new nuclear production tax credit (PTC). Taxpayers may only claim the credit for the ITC or PTC, but not both.

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<sup>12</sup> Berkman, M., & Murphy, D. (2015, September). Michigan Nuclear Power Plants' Contribution to the State Economy. *The Brattle Group*. Retrieved from [https://d3n8a8pro7vhmx.cloudfront.net/nuclearmatters/pages/206/attachments/original/1494336029/Sep15-Nuclear-Matters-Report\\_Michigan-Value-of-Nuclear.pdf?1494336029](https://d3n8a8pro7vhmx.cloudfront.net/nuclearmatters/pages/206/attachments/original/1494336029/Sep15-Nuclear-Matters-Report_Michigan-Value-of-Nuclear.pdf?1494336029)

Qualifying property includes equipment used to keep a nuclear power plant viable through the end of its operating license such as replacing large building components (steam generators), other improvements as well as fuel costs. These costs are typically included in the plant's tax basis and recovered through depreciation deductions over time. In the legislative proposals, these costs are used to calculate the credit amount.

Exelon recommends including the credit in the package of energy extenders that the Senate Finance Committee is considering in order to make it available for capital expenditures since January 1, 2019.

Nearly every major authority on climate change has said that carbon-free nuclear energy must be part of the solution if the world is to make progress on decarbonizing the power sector by midcentury to escape the worst consequences of global warming. This provision is integral to preserving the existing nuclear fleet and achieving that goal.

# GRUNLEY

June 24, 2019

U.S. Senator Benjamin Cardin  
509 Hart Senate Office Building  
Washington, DC 20510

Re: IRC Section 179D - Energy Efficient Commercial Buildings Deduction

Senator Cardin,

The purpose of this letter is to express our support of the recently proposed legislation S.617 – Tax Extender and Disaster Relief Act of 2019. More specifically, Section 113 of the legislation that extends the Internal Revenue Code Section 179D - Energy Efficient Commercial Buildings Deduction (“179D Tax Deduction”) for calendar years 2018 and 2019.

Founded in 1955 and headquartered in the Washington metropolitan area, Grunley Construction Company specializes in building new facilities as well as renovations, restorations and modernizations of large-scale commercial, institutional and government buildings, including offices, universities/schools, courthouses, laboratories, data centers, multi-family residential properties, performing arts centers, embassies, monuments and museums.

179D has been a powerful incentive for us allowing us to grow and scale our business and continue to create innovative concepts that improve the design towards more energy efficient buildings. The 179D program allows us to continue to create and maintain technical jobs and provide competitive pay to our skilled workers. We look forward to applying for the 179D tax deduction for projects placed into service in 2018 and 2019, once the incentive is extended for these calendar years.

We urge you to vote in favor of extending the Energy Efficient Commercial Buildings Deduction for Grunley Construction Company, small businesses in Maryland alike, and the Maryland economy that all stand to benefit greatly from this tax deduction. Thank you for your support and consideration for this powerful program.

Sincerely,

**GRUNLEY CONSTRUCTION CO., INC**



Kenneth M. Grunley, President and CEO  
KMG/rlc



**Statement of the  
American Council of Engineering Companies  
To the Senate Finance Committee  
Energy Task Force**

June 26, 2019

The American Council of Engineering Companies (ACEC) – the business association of the nation’s engineering industry – is pleased to submit these comments to the Senate Finance Committee Energy Task Force as it examines temporary tax policy.

Founded in 1906, ACEC is a national federation of 52 state and regional organizations representing more than 5,600 engineering firms and 600,000+ engineers, surveyors, architects, and other specialists nationwide. ACEC member firms drive the design of America’s infrastructure and built environment.

The Council strongly supports permanency for the Section 179D energy-efficient commercial buildings tax deduction. Since its enactment in 2005, Section 179D has supported the construction of thousands of energy-efficient buildings and has created or preserved hundreds of thousands of jobs. In addition, it has resulted in lower energy usage and reduced carbon emissions.

Preservation of the deduction is needed, as the higher up-front costs of energy-efficient systems remain a significant burden to building owners, who often must wait many years to realize the energy savings needed to recoup these investments.

This provision allows private building owners to claim a \$1.80 per square foot deduction for the installation of certain energy-efficient systems, including lighting, HVAC, and the building envelope. The energy-efficiency improvements must surpass ASHRAE Standard 90.1 by 50 percent, and owners may be able to claim a partial deduction. In the case of a governmental building owner, the law facilitates the allocation of the deduction to the primary designer of the energy-efficient improvements.

ACEC supports certain modifications to Section 179D, such as allowing nonprofit entities to allocate the deduction to the primary designer of the energy-efficient improvements, and technical changes to allow S corporations and partnerships to receive the full benefit of the deduction. We ask for the Committee’s consideration of these improvements and look forward to working with the Committee and Treasury on

implementation, including ways to improve the allocation of the deduction for public buildings.

ACEC also supports a multi-year extension of the Section 45 production tax credit (PTC) for biomass, geothermal, landfill gas, waste to energy, hydropower, marine and hydrokinetic. We supported the multi-year extension and phase-down of the Section 45 PTC for wind and the Section 48 investment tax credit for solar, which were approved by Congress in 2015 as part of the Protecting Americans from Tax Hikes (PATH) Act. We think that the other renewable energy technologies we have listed here should have similar treatment.

Thank you for your consideration of our views on these important energy tax issues, and we look forward to working with the Senate Finance Committee as it continues its review of expired tax provisions.

June 26, 2019

The Honorable John Thune  
Co-Lead, Senate Finance Committee Energy Taskforce  
United States Senate

The Honorable Debbie Stabenow  
Co-Lead, Senate Finance Committee Energy Taskforce  
United States Senate

The Honorable Bill Cassidy  
Senate Finance Committee Energy Taskforce  
United States Senate

The Honorable Thomas Carper  
Senate Finance Committee Energy Taskforce  
United States Senate

The Honorable John Cornyn  
Senate Finance Committee Energy Taskforce  
United States Senate

The Honorable Margaret Wood Hassan  
Senate Finance Committee Energy Taskforce  
United States Senate

The Honorable Pat Roberts  
Senate Finance Committee Energy Taskforce  
United States Senate

The Honorable Sheldon Whitehouse  
Senate Finance Committee Energy Taskforce  
United States Senate

Dear Senators:

The Senate Finance Committee's bipartisan Taskforce on Energy is tasked with finding solutions to provide long-term certainty to temporary tax provisions related to energy. Farm Bureau supports policies that help create a diverse domestic fuel and energy supply to propel America's economic growth and strengthen our nation's energy security. We encourage your taskforce to recommend the extension of tax incentives for renewable fuel and energy.

Farm Bureau is a long-time advocate of biodiesel, biofuel and renewable energy production. Renewable energy production helps farmers and ranchers expand markets for their products. It also supports local communities through production facilities that provide employment opportunities, and it broadens local tax bases. In addition, all citizens, including farmers who are large energy consumers, benefit when our nation reduces its dependence on volatile international oil markets.

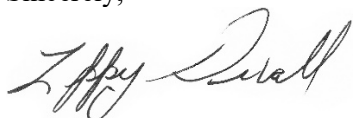
Specifically, Farm Bureau supports tax incentives for:

- Biodiesel and renewable diesel;
- Second generation biofuel;
- Alternative refueling property; and
- Electricity produced from wind and biomass.

Predictable, stable, long-term tax policy provides businesses and investors with the certainty they need for sound business planning. The uncertainty surrounding biodiesel tax credits and incentives for renewable energy undermines the purpose of these credits, which is to provide incentives for investment and to promote economic growth. It is critical that Congress provide long-term certainty for these important tax credits.

Thank you for your consideration.

Sincerely,



Zippy Duvall  
President





June 26, 2019

The Senate Finance Committee Energy Task Force  
219 Dirksen Senate Office Building  
Washington, DC 20510

Dear Senators:

On behalf of the Master Limited Partnership Association (MLPA), I am pleased to provide the following comments in response to your request for input on possible long-term tax policy solutions to address the temporary nature of tax incentives for many renewable energy resources.

### **Overview**

Master Limited Partnerships (MLPs) are publicly traded partnerships governed by Internal Revenue Code Section 7704, specifically Section 7704(c). The MLP structure, as narrowly defined by Congress in 1987, enables qualifying businesses to organize as pass-through tax entities and to raise capital from a broad base of investors by utilizing public equity markets. MLPs by definition are not closely-held partnerships.

Most of the assets held by MLPs are domestic. MLPs have successfully operated as Congress envisioned for over 30 years and now are an integral part of the way our nation raises capital to build critical infrastructure for domestic energy supplies, particularly natural gas, natural gas liquids (NGLs), crude oil, refined products and renewable fuels including ethanol and biodiesel.

MLPs provide individuals with a vehicle to invest and participate directly in the development and growth of U.S. energy infrastructure, natural resources, and real estate. Generally, the majority of retail MLP investors (either directly or through funds) are individuals over the age of 50. These MLP investments are particularly attractive to investors reliant on a source of fixed income, such as seniors, because they generally distribute most of their operating cash flow each quarter, providing a reliable income stream. The combination of investor demand for income-paying securities and their pass-through status provides MLPs with a lower cost of capital, ultimately supporting a lower cost of energy delivered to consumers.

### **Expanding MLP Status to Renewable and Alternative Energy**

On June 13, Senators Coons and Moran introduced bipartisan legislation (S.1841) – Financing Our Energy Future Act – which expands the MLP structure to renewable and alternative energy sources and infrastructure, including carbon capture and sequestration. Cosponsors include Energy Task Force Co-Lead Senator Stabenow and Energy Task Force Member Senator Carper, fellow Finance Committee Members Senators Crapo and Bennet, Senate Energy Committee Chair Murkowski, and Senators Collins, Ernst, Gardner, and King. Corresponding bipartisan legislation was introduced in the House by Congressmen Thompson and Estes.

For over 30+ years the MLP structure has proven and continues to be a successful means of:

- Raising lower cost capital through the public markets;
- Providing attractive returns to investors; and
- Building and maintaining critical infrastructure necessary to ensuring America's energy security and economic prosperity.

Recognizing this success, we believe that expanding the structure to include renewable and alternative energy sources and related infrastructure would be a long-term effective and efficient market-based solution to the on-again-off-again tax policy currently in use.

### **Conclusion**

As you continue your deliberations over these temporary tax provisions, we urge you to consider expanding the MLP structure to these resources.

Thank you for the opportunity to provide you with our thoughts on tax policy that will continue to enable the cost-effective and efficient buildout of our nation's energy infrastructure for years to come.

We are happy to discuss further any of these important issues with you.

Best regards,



Lori Ziebart  
Executive Director  
Master Limited Partnership Association



## National Wildlife Federation

National Advocacy Center

1200 G Street NW, Suite 900 • Washington, DC 20005 • 202-797-6800

June 26, 2019

The Honorable Charles Grassley  
Chair  
Committee on Finance  
U.S. Senate  
219 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Ron Wyden  
Ranking Member  
Committee on Finance  
U.S. Senate  
219 Dirksen Senate Office Building  
Washington, DC 20510

Dear Chairman Grassley and Ranking Member Wyden:

On behalf of the six million members and supporters and 52 state and territorial affiliates of the National Wildlife Federation, I urge you to extend and modify tax credits that move our economy toward a clean future and help reduce greenhouse gas emissions that fuel climate change. The Federation supports moving quickly towards net-zero emissions by mid-century, as directed by the world's scientists, recognizing that successfully stabilizing our climate can only come from developing and utilizing all feasible low- and zero-carbon technologies and carbon removal strategies, including in the energy and transportation sectors. The tax code is one of the most important tools we have at our disposal to help speed our transition to a zero-emission economy for the benefit of all people and wildlife.

In particular, we urge inclusion of these priorities in any tax extenders legislation:

### **Clean Transportation:**

The transportation sector is now the largest source of carbon emissions and arguably the most difficult sector to decarbonize. A transition to zero emissions vehicles is needed. To continue to grow the number of zero emissions vehicles, Congress needs to lift the manufacturer cap on tax credits for electric vehicles and extend credits for alternative vehicle fueling infrastructure. Rapidly electrifying our transportation systems, while simultaneously improving efficiency in internal combustion vehicles, is a prudent path to meet our climate goals, reduce local air pollution, and ensure American leadership in the growing global market for clean vehicle technologies.

- We urge Congress to extend Sec. 30B for alternative motor vehicles, Sec. 30C for alternative fuel vehicle refueling property, and modify Sec. 30D for qualified plug-in electric motor vehicles to ensure the tax credit remains available to consumers.

### **Sustainable Biodiesel:**

As you consider whether and how to offer tax credit support to various alternative fuel technologies, we urge you to refrain from subsidizing food-based biodiesel. Congress

rightly decided to discontinue the tax subsidy for corn ethanol production in 2011, and it should now follow suit by eliminating Sec. 40A. At a minimum, the scope of the credit should be narrowed to support only truly advanced biodiesels made from ultra-low carbon and waste-based feedstocks, like those that are given preference by the Low Carbon Fuel Standard programs in California and Oregon.

- We urge Congress to eliminate Sec. 40A, or, at minimum, to narrow its scope to support only ultra-low carbon and waste-based feedstocks.

#### **Grid Modernization:**

We ask that energy storage be considered an eligible technology for the Sec. 48 and Sec. 25D 30% investment tax credits (ITC). And as a nascent technology, a stand-alone ITC for energy storage is appropriate. Currently, energy storage technologies are only eligible for the investment tax credit when installed as part of solar energy projects, but this unnecessarily limits wider deployment of this critical emerging technology. Energy storage can be paired with a variety of clean sources of energy and is essential for integrating clean, intermittent resources onto the electricity grid. Storage also helps increase the reliability and resilience of the electricity grid, as well as helps to power rural and remote communities without grid access. Clarifying energy storage's full eligibility for the ITC is essential for a cleaner, more resilient electricity grid; we cannot get to high penetrations of low- and zero-emission energy without wide-scale adoption of energy storage technologies.

- We ask that Congress modify Sec. 48(a)(3) and Sec. 25D to include energy storage equipment that receives, stores, and delivers energy using new and existing technologies, and extend an ITC for energy storage.

#### **Clean Energy:**

We ask Congress to modify Sec. 48 to acknowledge the difference between onshore and offshore wind, which are on vastly different deployment and cost curves. Decoupling offshore and onshore wind will allow the credit for offshore wind to be fully utilized and unlock 4.2 terawatts in potential pollution-cutting, domestic, reliable energy. While onshore wind has enjoyed federal tax support for many years, offshore wind is a nascent technology, still gaining a foothold in U.S. electricity markets, and poised to grow dramatically over the next decade. As such, we also ask Congress to extend a stand-alone ITC for offshore wind.

- We urge Congress to modify Sec. 48 for qualifying advanced energy projects to acknowledge the difference between onshore and offshore wind, and extend an ITC for offshore wind.

#### **Energy Efficiency:**

Efficiency incentives have the potential to not only significantly reduce energy costs for consumers across the country but to significantly drive down carbon emissions and stimulate job creation and economic activity. Congress should extend the expired efficiency tax credits and update them to reflect current market conditions. As written, the expired credits reference older, outdated building codes or efficiency thresholds, and offer dollar amounts that don't reflect the current market prices for building technologies and high-efficiency equipment. We urge Congress to:

- Modify and extend the 25C incentive for homeowner efficiency improvements;

- Modify and extend Sec. 179D for energy efficient commercial and multifamily buildings; and
- Modify and extend Sec. 45L for energy efficient new homes.

Congress should also consider longer term incentives for renewable, low- and zero-carbon energy investment and production in response to the failure of the federal government to implement greenhouse gas emission standards. Clean energy and transportation technologies continue to compete on an unlevel playing field because most states do not price carbon into their markets. The federal PTC for wind and ITC for solar, plus the EV tax credit, serve as powerful equalizers. Given dire warnings from the world's scientists about worsening extreme weather, flooding, megafires, and other climate-fueled disasters, the tax code should be working for the benefit of the climate as opposed to against it.

Federal tax policy has been an important tool in promoting clean energy, fuels, and transportation. These efforts, along with others that ensure strong labor standards and incentives for domestic content, can help ensure American leadership in clean technology innovation and a vibrant American workforce. Again, we ask Congress to prioritize investments in clean transportation, sustainable biodiesel, grid modernization, clean energy, and energy efficiency in any legislation that modifies the tax code, to stabilize our climate for all people and wildlife.

Sincerely,

A handwritten signature in cursive script that reads "Shannon Heyck-Williams".

Shannon Heyck-Williams  
Director, Climate and Energy Policy

Good morning

Please see EDF's recent statement on energy tax extenders. Happy to discuss further and provide additional information.

**Clarence Tong**

Senior Manager, Legislative Affairs

**Environmental Defense Action Fund**

1875 Connecticut Avenue NW, Suite 600

Washington, DC 20009

T 202 572 3292

C 202 210 9196

[ctong@edfaction.org](mailto:ctong@edfaction.org)

<https://www.edf.org/media/tax-extend-bill-provides-opportunity-act-climate-0>

**Tax Extenders Bill Provides Opportunity to Act on Climate**

EDF to Congress: More Action is Needed

June 27, 2019

(WASHINGTON, DC – Jun. 27, 2019)—Following the passage of a tax extenders package in the U.S. House Ways and Means Committee last week, the Environmental Defense Fund is calling on Congressional leadership to take more action.

“The House Ways & Means Committee has the chance to advance incentives that will reduce climate pollution and help unlock solutions to a clean economy.

“We need legislative action now that will catalyze private sector investments to put more electric vehicles on our roads, increase electricity storage capacity, and boost offshore wind energy production.

“We call on the House to demonstrate leadership and seize this opportunity to advance these crucial climate incentives.”

- Elizabeth Gore, Sr. Vice President, Political Affairs, Environmental Defense Fund

# # #

*Environmental Defense Fund (edf.org), a leading international nonprofit organization, creates transformational solutions to the most serious environmental problems. EDF links science, economics, law and innovative private-sector partnerships. Connect with us on [EDF](#) [Voices](#), [Twitter](#) and [Facebook](#).*



June 28, 2019

Senator John Thune  
Co-Lead  
Senate Committee on Finance  
Energy Task Force

Senator Debbie Stabenow  
Co-Lead  
Senate Committee on Finance  
Energy Task Force

Via email: [Energy\\_Taskforce@finance.senate.gov](mailto:Energy_Taskforce@finance.senate.gov)

Dear Senators Thune and Stabenow:

Thank you for the opportunity to comment on tax policy and the clean energy sector. In lieu of bipartisan Congressional legislation that addresses climate emissions and promotes clean energy, CRES believes the federal tax code is a critical tool for supporting the development and adoption of clean energy technologies and lowering emissions.

Citizens for Responsible Energy Solutions (CRES) is a 501(c)(4) non-profit organization founded in 2013 to engage Republican policymakers and the public about responsible, conservative solutions to address our nation's energy, economic, and environmental security while increasing America's competitive edge.

The clean energy industry, including energy efficiency, energy storage, natural gas electric generation, solar, wind, hydro, nuclear, electric vehicles, waste-to-energy, carbon capture technologies, biofuels and smart grid, is now a \$200 billion industry in the U.S., supporting more than 3 million workers. CRES Forum supports a tax framework to maintain America's competitive advantage in clean energy and ensure our leadership position in the growing global market.

CRES supports the temporary renewal of the expiring energy tax provisions, especially those that are focused on critical needs. Specifically:

- Section 25C which allows for credits on energy-efficient improvements of principal residences;
- Section 40(b)(6), the second-generation biofuel credit which promotes the use of cleaner fuels in vehicles;
- Sections 40A, 6426 (c ) and 6427(e), incentives for biodiesel and renewable diesel;



- Sections 45 and 48(a)(5) which extends the production tax credit for energy produced by renewable resources;
- Section 45L for the construction of certified energy efficient new homes; and
- Section 451(k) which will supports retail energy choice.

In addition, CRES Forum supports the inclusion of energy storage and commercial geothermal technologies in Section 48. Energy storage and commercial geothermal offer great promise for advancements in clean energy.

Finally, CRES urges Congress to pass legislation that provides a permanent technology neutral approach to tax credits that would supersede and replace these tax credits as they expire. The tax code could be simplified with a single credit that includes zero-emission energy sources, including renewable energy and nuclear energy, and carbon capture storage and utilization use, and other technologies resulting in net-zero emissions from energy produced from fossil fuels.

Thank you again for this opportunity to comment on federal energy tax provisions. Please do not hesitate to contact me with any questions.

Sincerely,



Brandon Audap  
Vice President, Federal Government Relations  
Citizens for Responsible Energy Solutions



*Sustainability is the bottom line.*

**BICEP Members:**

Adobe  
Annie's Inc  
Aspen Skiing Company  
Autodesk  
Aveda  
Ben & Jerry's  
Burton Snowboards  
Clif Bar & Company  
Dignity Health  
eBay Inc.  
Eileen Fisher  
Etsy  
Fetzer Vineyards  
Gap Inc.  
General Mills, Inc.  
Hackensack Meridian Health  
IKEA  
Impossible Foods  
JLL  
Kaiser Permanente  
KB Home  
The Kellogg Company  
L'Oreal USA  
LBrands  
Levi Strauss & Co.  
LinkedIn  
Lyft  
Mars Incorporated  
Microsoft Inc.  
Nature's Path Foods  
Nestle  
New Belgium Brewing  
Nike, Inc.  
The North Face  
Outdoor Industry Association  
Owens Corning  
Patagonia, Inc.  
Portland Trail Blazers  
Salesforce  
Schneider Electric  
Seventh Generation  
SFO  
Sierra Nevada Brewing  
Squaw Valley  
Starbucks  
Stonyfield Farm  
Symantec Corporation  
Timberland  
Unilever  
Vail Resorts  
VF Corporation  
Vulcan, Inc.  
Worthen Industries

June 28, 2019

Senate Finance Committee Energy Taskforce  
219 Dirksen Senate Office Building  
Washington, DC 20510

Dear Chairman Grassley, Ranking Member Wyden, Senator Thune, Senator Stabenow, Senator Roberts, Senator Carper, Senator Cornyn, Senator Whitehouse, Senator Cassidy, and Senator Hassan,

**Re: Senate Finance Committee Energy Taskforce**

Business for Innovative Climate and Energy Policy (BICEP), a network of 53 leading U.S. businesses and business groups, appreciates the opportunity to offer comments to the Senate Finance Committee Energy Taskforce in support of tax provisions that will help accelerate America's transition to a robust low carbon economy. As businesses with global footprints and operations in all fifty states, we recognize that climate change is an urgent threat to the American economy and that Congress must pursue a range of policies to rapidly accelerate decarbonization of all sectors of the economy.

The U.S. National Climate Assessment from 2018 made clear that climate change is already having economic and health impacts across the nation, and that time is running out to prevent or minimize even the worst impacts. The Assessment reflected the urgency of the 2018 Intergovernmental Panel on Climate Change Report, which found that the risks associated with a warming world are substantially lower at 1.5 degrees than at 2 degrees. However, the world is not currently on track to limit temperature rise to 2 degrees, let alone 1.5 degrees.

In recent years, businesses in the U.S. have begun aggressively setting targets to reduce greenhouse gas emissions within their operations and supply chains. But they can't tackle the problem without strong leadership from Congress. The sum total of corporate commitments to reduce emissions are insufficient to meet our long term climate goals—as evidenced by [2018 Energy Information Administration data](#) showing an economy wide increase in greenhouse gas emissions. Congress needs to create a stable, predictable policy environment that sends transparent price signals to businesses, who in turn will be able to respond with new investments in clean technologies.

We see substantial opportunities to reduce emissions, drive new markets and innovation, and boost manufacturing and infrastructure through effective and well-designed tax incentives. Among other areas, BICEP supports incentives for the deployment of renewable electricity, electric vehicles and associated charging infrastructure, energy storage, and energy efficiency.

While the targeted tax incentives referenced above are critical to deploying new zero carbon and efficiency technologies, BICEP recognizes that they are insufficient to reduce greenhouse gas emissions at the pace and scale to meet the economic and health challenges posed by a warming world. What is ultimately needed (among other critical policies) is a meaningful price on carbon - which is the most efficient and effective way to rapidly reduce our emissions and help decarbonize our economy.

**Below are several legislative proposals from the 116th Congress that BICEP supports and recommends that the Finance Committee take up for consideration:**

#### **Driving America Forward Act (S. 1094)**

Senators Stabeow, Alexander, Peters, and Collins introduced the bipartisan Driving America Forward Act, a bill to modify the electric vehicle tax credit by raising the volumetric cap from 200,000 to 600,000 vehicles eligible for a \$7000 consumer credit for each manufacturer. This modification to the EV tax credit is critical to continue the growth of a promising new manufacturing sector. As battery costs continue to decline, electric vehicles are projected to be cost competitive on an upfront cash basis with internal combustion engine vehicles by the mid 2020's. In the meantime, it is critical to ensure that this burgeoning industry remains strong.

#### **Financing Our Energy Future Act**

Master limited partnerships (MLPs) are a business structure that is taxed as a partnership at the shareholder level as opposed to the shareholder and corporate level. MLPs are appealing to investors and attract new capital. Currently, the tax code only makes MLPs available to energy projects that rely on fossil fuels. The bipartisan Financing Our Energy Future Act, introduced by Senators Coons and Moran, would level the playing field and make MLPs available to all sources of domestic energy, including renewable energy sources such as wind, solar, and hydropower as well as energy technologies such as energy storage, carbon capture, and energy efficient buildings. This change to the tax code would spur new private capital investments in clean energy by giving clean energy businesses the same advantages already given to fossil fuel businesses.

#### **Energy Storage Tax Incentive and Deployment Act of 2019 (S.1142)**

Energy storage can improve electric grid flexibility, reliability, and resilience and allow for the shift of electricity supply during periods of peak-demand. It also reduces risk by increasing resource options and helping the grid to react to unexpected changes in the system. In addition, energy storage enables greater renewable energy integration by increasing full-time availability of intermittent resources, providing emergency backup power, and aiding in stability during times of high energy use.

Currently, energy storage can only qualify for the federal investment tax credit (ITC) when coupled with a solar power project. This restriction makes it difficult for businesses and investors to take advantage of the range of energy storage applications across different energy-producing technologies, and ultimately it limits energy storage deployment. Making energy storage independently eligible for a 30% ITC (as proposed in this bipartisan legislation) would have a transformative impact; resolving the uncertainty facing businesses and energy storage providers, spurring private sector investment, creating jobs, and accelerating the transition to renewable energy.

#### **Energy Efficiency Incentives**

Energy efficiency improvements reduce emissions, save businesses and residential customers money, and create jobs. In fact, in the U.S. low carbon economy, energy efficiency has created more jobs than any other sector. BICEP supports the extension of tax incentives for energy efficiency investments in commercial and residential properties such as those under Section 179D (commercial buildings), Section 25C (residential), and Section 45L (New Energy Efficient Homes).

### **Offshore Wind Energy Investment Tax Credit (ITC)**

As the tax credits for wind and solar phase down (and in some cases out), certain renewable electricity technologies and applications still need targeted federal assistance. The primary example is the offshore wind industry. The task force should consider extending the ITC for offshore wind which would help provide policy certainty at this critical time in offshore wind development and spur capital investment to harness the abundant energy available offshore. The ITC will enable the offshore wind energy to create tens of thousands of clean energy jobs and produce renewable domestic energy. At least two bills have been introduced in the Senate to provide tax incentives for offshore wind - which remains more expensive than onshore wind, but has significant benefits, including higher capacity factors and proximity to load centers (especially along the East Coast).

### **Incentives for Electrification of the Transportation Sector**

The transportation sector is one of the largest contributors of U.S. carbon emissions. In the transition to a low carbon economy, there is a need to electrify transportation beyond passenger vehicles. Incentives and funding for research and development are critical for decarbonizing heavy duty vehicles, shipping, and airplanes. The task force should consider exploring incentives to promote electrification across the transportation sector.

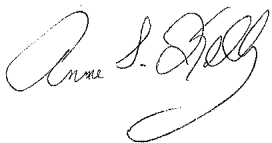
### **Carbon Pricing**

Ultimately, in order to decarbonize our economy, Congress must put forward a policy response equal to the severity of the challenge—and that should include a price on carbon. Carbon pricing is the most efficient and effective mechanism to reduce carbon emissions. A national price on carbon would address the externalities of carbon pollution and correct a market failure. Economists agree that putting a price on carbon is the most direct and cost-effective way to reduce carbon pollution on a scale that is relevant to global climate goals.

However, a price on carbon is not a silver bullet. A carbon price can be a powerful tool to drive down emissions, but other policy mechanisms, such as the incentives listed above, R&D, and targeted regulations, are needed in order to reduce emissions at the pace and scale required to tackle climate change.

Thank you for your consideration of these recommendations. Please do not hesitate to reach out with any questions.

Sincerely,



Anne Kelly  
Vice President, Government Relations  
BICEP (Business for Innovative Climate and Energy Policy)  
Ceres

*The Ceres BICEP Network comprises influential companies advocating for stronger climate and clean energy policies at the state and federal level in the U.S. As powerful champions of the accelerated transition to a low-carbon economy, Ceres BICEP Network members have weighed in when it has mattered most. For more information on the Ceres BICEP Network, visit [www.ceres.org/BICEP](http://www.ceres.org/BICEP).*



## ADVANCING MOBILITY WITH ELECTRIC INNOVATION

The Electric Drive Transportation Association (EDTA), headquartered in Washington, DC, and established in 1989, is the cross-industry trade association promoting the advancement of electric drive technology and electrified transportation.

### EDTA MEMBERS

<b>ABB</b>	<b>Electrify America LLC</b>	<b>Orlando Utilities Commission</b>
<b>Albemarle Corporation</b>	<b>eMotorWerks</b>	<b>Pacific Gas &amp; Electric Co.</b>
<b>Alva Charge</b>	<b>EVgo</b>	<b>Pepco Holdings</b>
<b>American Honda Motor Company</b>	<b>FCA US</b>	<b>Phoenix Motorcars LLC</b>
<b>American Public Power Association</b>	<b>Florida Power &amp; Light Company</b>	<b>PlugShare</b>
<b>Audi</b>	<b>Ford Motor Company</b>	<b>Poona Shims Private Limited</b>
<b>Biogas Researchers</b>	<b>Forth</b>	<b>Proterra</b>
<b>BMW of North America</b>	<b>General Motors Corporation</b>	<b>Sacramento Municipal Utility District</b>
<b>BTCPower</b>	<b>Greenlots</b>	<b>Salt River Project</b>
<b>CenterPoint Energy</b>	<b>JEA</b>	<b>Southern California Edison, an Edison International Company</b>
<b>ChargePoint</b>	<b>Johnson Matthey</b>	<b>Southern Company</b>
<b>City of New York</b>	<b>KCP&amp;L</b>	<b>Subaru of America</b>
<b>Clariant</b>	<b>Lightning Systems</b>	<b>Tampa Electric Company</b>
<b>ClipperCreek</b>	<b>LORD Corporation</b>	<b>Tesla</b>
<b>CSA Standards</b>	<b>Lyft</b>	<b>The AES Corporation</b>
<b>Duke Energy</b>	<b>Mitsubishi Motors North America</b>	<b>Toyota Motor Company</b>
<b>Eaton Corporation</b>	<b>Motiv Power Systems</b>	<b>Volkswagen Group of America</b>
<b>Edison Electric Institute</b>	<b>Nissan North America</b>	<b>Workhorse Group</b>
<b>Electric Power Research Institute</b>		

### CORPORATE AFFILIATES

**Navigant Research**

*Updated June 2019*

1250 EYE STREET, NW | SUITE 902 | WASHINGTON, DC 20005 | 202-408-0774

[WWW.ELECTRICDRIVE.ORG](http://WWW.ELECTRICDRIVE.ORG)

June 28, 2019

The Honorable John Thune  
Co-Lead, Energy Taskforce  
Senate Finance Committee  
511 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow  
Co-Lead, Energy Taskforce  
Senate Finance Committee  
511 Hart Senate Office Building  
Washington, DC 20510

Dear Senators Thune and Stabenow:

As the Senate Finance Committee evaluates recently expired tax provisions, the Electric Drive Transportation Association (EDTA) strongly urges Congress to increase the phase-out threshold of the credit for plug-in electric vehicles and provide a seamless, multi-year extension of the incentives for fuel cell electric vehicles (FCEVs) and alternative fuel infrastructure. In that vein, EDTA appreciates Chairman Grassley and Ranking Member Wyden's introduction of legislation to extend these and other provisions through the end of 2019.

EDTA is the cross-industry trade association promoting the advancement of electric drive technology and electrified transportation. Our members represent the entire value chain of electric drive, including vehicle manufacturers, battery and component manufacturers, electric utilities, smart grid and charging infrastructure developers and providers. Collectively, we are committed to realizing the economic, national security and environmental benefits of displacing oil with electricity across transportation modes. A list of EDTA members accompanies this letter.

Electric drive vehicles (EVs) provide consumers and businesses with options that meet their mobility needs and save money at the pump while contributing to the nation's energy and public health goals. Expanding electric drive infrastructure increases these benefits and will ensure our transportation sector continues to meet essential mobility and commerce needs.

These incentives also contribute to U.S. leadership in EV technology, which is critical to our global competitiveness, and create domestic jobs. China and other nations see the future of transportation and are pursuing dominance in electrification. Promoting investment in electric drive helps ensure that the U.S. does not lose its competitiveness in a market that we built.

That market includes the more than one million plug-in vehicles that have been sold since entering the market in 2010, as well as an increasingly robust supply chain of manufacturers, suppliers and infrastructure providers. According to the Department of Energy, electric drive vehicle and component



manufacturing currently represents over 207,000 jobs and that number is growing.

Today, consumers have more choices than ever to drive electric, with more than 40 models of plug-in and fuel cell cars available. Options from almost every major automaker are slated to expand exponentially, with cars and trucks offered across price points and capacities. The industry is still emerging, however, and the incentives are helping new technologies achieve scale and become cost competitive.

Businesses large and small have made investments based on these policies, as have their competitors around the world. Allowing them to achieve their intended goals is vital to maintaining U.S. leadership in the transportation sector and securing the attendant job creation.

EDTA advocates extending the critical incentives that provide more American drivers with the opportunity to benefit from vital tax credits for light-duty electric vehicles – both battery and fuel cell driven – and encourages additional charging and fueling infrastructure to effectively support an electrified fleet. These policies are working and we urge Congress to continue them.

The incentives for electric vehicles and refueling infrastructure remain vital to the growth of this market even with a reformed tax code. Tax reform was designed, among other things, to lower rates on business income and reduce cost recovery periods, making capital investment more attractive. The goal of these incentives, however, is to help reinforce consumer demand for electric vehicles and infrastructure by reducing post-incentive prices until sufficient scale exists that the incentives are no longer necessary. While tax reform improves the after-tax rate of return on business investment, it does not address the current cost structure of producing electric vehicles. These incentives, which were always meant to be temporary measures to allow the electric drive market to achieve economies of scale, remain necessary post-tax reform.

#### Increase in Phase-out Threshold of the Plug-In Electric Drive Motor Vehicle Credit

The section 30D Plug-In Electric Drive Motor Vehicle Credit is a performance-based incentive of up to \$7,500 designed to help defray the additional cost to consumers of still-expensive advanced technology and to help manufacturers achieve commercial scale production. While the section 30D credit does not expire under current law, it phases out on a per-manufacturer basis over the calendar year following the calendar quarter in which a manufacturer sells its 200,000<sup>th</sup> qualifying vehicle.

This construction was intended to promote multiple manufacturers' investment and to allow the plug-in electric drive vehicle manufacturers to achieve commercial scale production and the attendant reductions in per-unit costs. However, the market has developed differently than anticipated when section 30D was enacted and several manufacturers have hit or are anticipating hitting the 200,000 vehicle phase-out threshold without having achieved annual production levels that are necessary to achieve the intended

economies of scale.

EDTA strongly supports S. 1094, the Driving America Forward Act, which was introduced by Senators Stabenow, Alexander, Peters and Collins. S. 1094 would update the tax credits for plug-in and fuel cell electric vehicles and is supported by more than the 60 organizations in the automaker, utility, electric drive and environmental communities. The legislation would allow an additional 400,000 vehicles under the plug-in electric drive vehicle credit (at a reduced value, maximum \$7,000) and extend the fuel cell electric vehicle credit for 10 years. These changes will support manufacturer investment, support U.S. job growth and ensure consumer choice in clean, advanced transportation.

#### **Extension of the Fuel Cell Electric Vehicle Credit**

The section 30B Fuel Cell Electric Vehicle Credit is a performance-based incentive of up to \$8,000 for an advanced technology that is necessary to meet our goals for reducing petroleum dependence and fostering zero-emission transportation.

Many of the world's leading automotive companies have begun commercial production and sale of FCEVs including Honda and Toyota. As is often the case with breakthrough technologies, FCEVs have an initial cost hurdle. Mitigating this through a purchase incentive helps consumers acquire more efficient, cleaner-running cars and encourages industry to invest in the supply chain. The section 30B credit, however, expired at the end of 2016 and was retroactively extended through 2017. Today, as the FCEV market is just being established and as multiple companies are executing market entry plans, the credit stands expired.

As noted above, EDTA supports the 10 year extension of the Section 30B credit for fuel cell vehicles in order to provide greater market certainty.

#### **Extension of Refueling Property Credit**

To promote growth in the electric vehicle market, electric vehicle infrastructure must expand as well. The section 30C Alternative Fuel Vehicle Refueling Property Credit is a technology-neutral policy that helps individuals and businesses invest in the refueling/recharging infrastructure that supports electric, fuel cell and other alternative fuel vehicle needs with a 30 percent tax credit, up to \$1,000 for residential property and \$30,000 for commercial property.

The federal infrastructure credit is an effective, low-cost incentive that supports investment in electric drive and other alternative fuel vehicles. In the same time period, charging stations open to the public have grown to more than 20,000 charging stations, with more than 82,000 charging outlets in the United States. Hydrogen fueling infrastructure is also poised to expand in initial fuel cell vehicle markets.



Unfortunately, this vital incentive for the deployment of electric vehicle recharging property expired at the end of 2016 and was retroactively extended through 2017. EDTA urges Congress to provide a seamless extension of section 30C Alternative Fuel Vehicle Refueling Property Credit for 10 years, parallel to the duration of the electric drive vehicle credits.

In addition, the effectiveness of this provision could be improved by making two modifications.

Under current law, there is some confusion as to whether the dollar limitation on the credit applies to a single recharging device or to all of the devices installed at a single “location.” If the latter interpretation is taken, this construction could limit the ability of commercial refueling stations, public parking garages and other facilities to claim the credit on multiple recharging points at a single location. EDTA recommends clarifying that the limitation applies on a per-device basis, regardless of how many facilities are involved.

In addition, the current law limitation on the business credit provided by section 30C corresponds to a maximum allowable cost for refueling property of \$100,000. However, state-of-the-art fast and high power charging and hydrogen fueling units cost significantly more than this. EDTA recommends increasing the per-device limitation on the business credit provided by section 30C to more effectively promote investment in alternative fuel infrastructure.

Thank you for your consideration. We look forward to working with the Energy Taskforce and the Finance Committee on these critical issues.

Sincerely,

Genevieve Cullen  
President



College of Earth, Ocean, & Environment  
SCHOOL OF MARINE SCIENCE & POLICY

Willett Kempton, Professor  
Associate Director, Center for Research on Wind  
University of Delaware  
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28 June 2019

The Honorable John Thune  
511 Dirksen Senate Office Building  
Washington, DC 20510-4105

The Honorable Debbie Stabenow  
731 Hart Senate Office Building  
Washington, DC 20510-2204

Dear Senators Thune and Stabenow,

I write to comment on the Senate Bill "To amend the Internal Revenue Code of 1986 to extend the energy credit for offshore wind facilities." Based on my analysis of this bill and knowledge of cost, uptake, and current status of the Offshore Wind Industry, I feel this bill will provide substantial economic benefits to the United States, including development of industrial infrastructure, future-oriented jobs, lower electricity bills, and abundant clean energy for the United States.

My qualifications are that I am a recognized offshore wind expert, with many scientific publications and lectures on this topic, I am a Professor of Electrical Engineering and of Marine Policy at the University of Delaware, and have researched (for both US Dept of Energy and for the Commonwealth of Massachusetts) the development of this industry and in particular the cost of electricity from offshore wind and the ways that costs can be reduced over the next decade.

To understand the effect of this bill, I have analyzed it using the NREL CREST model. The proposed 30% ITC will lower the cost of electricity from today's prices of offshore wind power by approximately 1.5¢/kWh. In the case of many projects, during this time period, this reduction by 1.5¢/kWh will make the difference between cost-effective and non-cost-effective electricity supply. The bill's time frame, from 2019 through 2026 is justified because this technology is now approaching cost-competitiveness, but is not

quite there, inhibiting the transition to industrial scale and full market competitiveness. The effect of the bill is that, if deployment speeds up by a measure such as the ITC, offshore wind energy is likely to be market competitive by the end date of the bill (January 1, 2027). In other words, with the ramp up in industry volume that will be generated by the ITC, the industry should reach at or below cost of competing power, and thus will be able to compete on open power markets without the ITC. Thus the bill correctly provides the ITC only through December 2026; the credit is not needed after that because of two factors: the bill itself, by ramping up and industrializing the industry, and because of ongoing technology improvements.

An additional effect of this bill will be development and customization of many offshore oil and gas supply chain firms to be able to also work on offshore wind.

I would be pleased to answer any additional questions upon request.

Sincerely,

A handwritten signature in black ink, reading "Willett Kempton". The signature is fluid and cursive, with a long horizontal line extending from the end of the name.

Willett Kempton  
Professor, University of Delaware  
Professor, Department of Electrical and Computer Engineering  
PI, Industrializing Offshore Wind Power Generation

# United States Senate

WASHINGTON, DC 20510

June 28, 2019

The Honorable John Thune  
Co-Lead  
Tax Extenders Task Force on Energy  
Senate Finance Committee  
Washington, DC 20510

The Honorable Debbie Stabenow  
Co-Lead  
Tax Extenders Task Force on Energy  
Senate Finance Committee  
Washington, DC 20510

Dear Senator Thune and Senator Stabenow:

We are submitting comments today to express our concern with the inclusion of retroactive changes to the Alternative Fuel Mixture Credit in S. 617, the Tax Extender and Disaster Relief Act of 2019.

The Alternative Fuel Credit of section 6426(d) provided a \$.50-per-gallon excise tax credit for producing alternative fuels used in a motor vehicle, boat, or plane. The Alternative Fuel Mixture Credit of section 6426(e) provided a \$.50-per-gallon excise tax credit for various alternative fuels used to produce a mixture containing taxable fuels such as gasoline, diesel, or kerosene.

While S. 617 extends the section 6426(d) credit as-is, it makes significant modifications to the mixture credit of section 6426(e). The bill modifies the definition of alternative fuels, for purposes of section 6426(e) by disallowing liquified petroleum gas, compressed or liquified natural gas, and compressed or liquefied gas derived from biomass from qualifying for the credit for fuels produced after December 31, 2017. Importantly, the bill also makes a retroactive change for the same fuels, by disallowing credits previously claimed by taxpayers, but not yet allowed by the Internal Revenue Service (IRS), with respect to fuels produced before January 1, 2018.

We are concerned with the retroactive nature of the change to section 6426(e) because it undermines confidence in our tax system. Retroactive changes to tax policy affecting activity that has already occurred and tax returns that have already been filed set a precedent that will lead to taxpayer mistrust in the certainty of the law. In addition, we believe this retroactive change might violate a taxpayer's due process rights, especially given the extended period of retroactivity and the limited notice provided to taxpayers.

We urge the taskforce to ensure this retroactive tax provision is not part of any tax extenders or legislation brought to the Senate floor. While the IRS has denied some taxpayers

related claims under the mixture credit, those denials are being challenged in court, and ultimately we believe that the federal court system is the appropriate arbiter for this matter. Congress should not pre-judge this matter before the legal process has concluded.

Thank you for your consideration of our concerns. We look forward to working with you to ensure our tax system provides taxpayers with as much certainty as possible.

Sincerely,



James M. Inhofe  
United States Senator



Shelley Moore Capito  
United States Senator



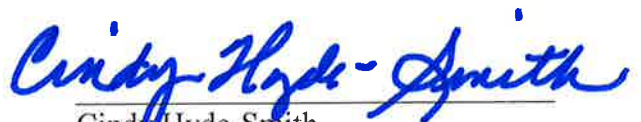
Kevin Cramer  
United States Senator



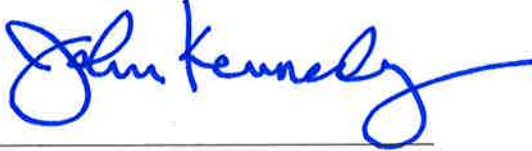
Ted Cruz  
United States Senator



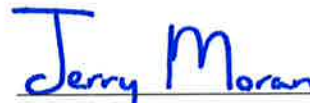
John Hoeven  
United States Senator



Cindy Hyde-Smith  
United States Senator



John Kennedy  
United States Senator



Jerry Moran  
United States Senator



Rand Paul M.D.  
United States Senator



Dan Sullivan  
United States Senator

June 28, 2019

The Honorable John Thune  
Co-Lead, Senate Finance Energy Taskforce  
511 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow  
Co-Lead, Senate Finance Energy Taskforce  
731 Hart Senate Office Building  
Washington, DC 20510

Dear Senators Thune and Stabenow:

— Please accept this letter of support for an offshore wind Investment Tax Credit (ITC) on behalf of Siemens Gamesa Renewable Energy (SGRE), the world's leading manufacturer of offshore wind turbines. SGRE has the longest track record of all wind turbine suppliers in the offshore industry, with a total installed capacity of over 12 gigawatts offshore. Our recent \$35 million capital expenditure at our US manufacturing facilities and a newly-opened Boston office to serve the offshore industry are just a few examples of our longstanding commitment to continuous investment in the US. The United States represents an important market to our future business operations and the offshore wind ITC is an important tool in helping to bring the offshore wind energy industry to American shores.

The US offshore wind industry is in its infancy, with only 30 megawatts currently installed but a market outlook for roughly 20,000 megawatts to be installed by 2030, thanks to state-led procurement policies. An extension of the offshore wind ITC will help to reduce costs and stimulate investment in a local supply chain and manufacturing capacity to serve this promising new source of domestic clean energy generation. A recent study published by the Special Initiative for Offshore Wind has identified a \$68 billion opportunity for CAPEX investment by 2030 in support of the US offshore wind industry.

It is very important for market stability that any proposed extension to the ITC, which has already begun to phase down, would apply any change in ITC value retroactively throughout the phase-down years, so that anyone who may have already invested under the existing framework would not be at a disadvantage. This would help to avoid state procurement auction delays and maintain a steady demand in the market.

A boom in global offshore wind development in the mid-2020s will tax existing capacity for manufacturing, vessels, and other elements of the supply chain. The US has an opportunity to capitalize on the need for new capacity, repurpose existing assets from our strong offshore oil and gas industry, and localize elements of the supply chain that will help drive down costs. Policy consistency and a longer period of applicability for the offshore wind ITC would help make the US significantly more competitive in the global marketplace.

Respectfully submitted,

Steve Dayney  
Head of Offshore Wind  
Siemens Gamesa Renewable Energy North America

As you know, every few years Congress engages in a ritual extension of expiring tax provisions. The bills extend targeted temporary tax provisions for a variety of business operations, individual expenses, and industries. There is [broad bipartisan support](#) for letting all the tax extenders expire.

Almost every extender currently being considered grants an economic privilege tailored to some particular group or business interest. By picking winners and losers, these corrupt policies distort efficient market outcomes. They thereby hamper economic growth and reduce opportunity for individuals and businesses whom Congress did not shower with special favors.

Specifically, in the category of the energy taskforce on temporary tax policy, I believe all off the expiring tax credits should be allowed to expire.

Handouts to the energy industry carry a significant hidden cost to American taxpayers beyond lost revenue, they manipulate private-sector investment based on political agendas rather than market realities.

Private capital is limited. Technologies that do not receive subsidies appear to be more expensive, risky, or unpromising. By shifting the financial risk of energy projects indirectly to the taxpayer through the tax code, the government discourages private investments in projects that lack the government's blessing but may be more commercially promising. A dollar invested in a company benefiting from a tax credit cannot be invested simultaneously in another company, creating opportunity costs where potentially promising but unsubsidized technologies may not receive investment.

Business models built around taxpayer-funded subsidies also distort the incentive that drives innovation. Preferential tax treatment reduces the necessity for an industry to make its technology cost-competitive, because the tax credit shields a company from recognizing the actual price at which its technology is economically viable. Moreover, targeted tax credits give one technology a government-created price advantage over an unsubsidized competing technology. Companies that do not receive any preferential treatment consequently will lobby for it, demanding a level playing field. The result is a hodgepodge of tax credits that benefit select technologies but harms the country as a whole.

The only way to achieve a truly level playing field is by eliminating all sources of subsidies for all forms of energy. Allowing the temporary energy tax credits to expire would be a good first step.

The Heritage Foundation details 13 specific credits to repeal or allow to expire in our [2020 Blueprint for Balance](#) and two of [my colleagues wrote about](#) many of the provisions you are considering, last year.

I would be happy to discuss with you in greater detail the topics included here or any other tax extender. Please feel free to contact me if I can be of assistance in any way.

Sincerely,  
Adam N. Michel

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**Adam Michel**  
*Senior Policy Analyst, Fiscal Policy*

*Institute for Economic Freedom*  
The Heritage Foundation  
214 Massachusetts Avenue, NE  
Washington, DC 20002  
202-608- 6142  
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June 21, 2019

The Honorable John Thune, Co-Lead  
Senate Energy Tax Task Force  
511 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow, Co-Lead  
Senate Energy Tax Task Force  
731 Hart Senate Office Building  
Washington, DC 20510

[Energy\\_Taskforce@finance.senate.gov](mailto:Energy_Taskforce@finance.senate.gov)

**Dear Senators Thune and Stabenow:**

Enel Green Power North America, Inc. hereby submit written comments to the Senate Finance Committee's Energy Temporary Tax Policy Task Force.

Enel Green Power North America, Inc. is a leading owner and operator of renewable energy plants in North America with projects operating and under development in 24 U.S. states and two Canadian provinces. In North America, Enel Green Power operates more than 100 power plants with a total operating capacity of over 5,000 megawatts (MW) powered by renewable hydropower, wind, geothermal and solar energy.

As Congress looks for opportunities to refine energy tax policy, we ask that you consider additional measures that will create parity and benefit our nation's energy infrastructure, while also continuing U.S. leadership in the development of advanced energy technologies.

1. **Enact [S. 1142/H.R. 2096](#), the "Energy Storage Tax Incentive and Deployment Act"**, to clarify that the entire portfolio of energy storage (i.e., grid batteries, pumped hydro, compressed air/liquids, thermal storage) qualifies for a \$48 tax credit as a stand-alone, eligible advanced energy technology.
  - ✓ Energy storage eligibility for \$48 tax credits should not be contingent on its pairing with solar energy projects and a Private Letter Ruling from the IRS. Clarifying eligibility of the \$48 tax credit for energy storage will create a level playing field across electric grid technologies, improve business certainty, and allow energy storage to pair with any type of generation asset.
2. **Extend the §45(d) and §48 tax credits for the baseload renewable energy technologies. [S. 617](#)**, the "Tax Extender and Disaster Relief Act" (§107) and **H.R. 3301**, the "Taxpayer Certainty and Disaster Relief Act" (§127) would retroactively extend these credits, which expired at the end of 2017. The bills' "Credit for electricity produced from certain renewable resources", extends the tax credits for geothermal energy; qualified hydropower; and marine and hydrokinetic.
  - ✓ Temporary tax policy creates an uneven competitive environment. The §45(d) and §48 tax credits for baseload renewable energy technologies have lapsed, while the credits for other renewable resources, such as wind and solar, received long-term tax credit extensions. In a highly competitive energy market, this glaring disparity in tax policy has adversely impacted project deployment for baseload renewable energy technologies.
3. **Extend the §30C alternative fuel refueling property tax credit (including electric vehicle chargers). [S. 617](#)**, the "Tax Extender and Disaster Relief Act" (§103) and **H.R. 3301**, the "Taxpayer Certainty and Disaster Relief Act" (§125) would retroactively extend the credit, which expired at the end of 2017.

- ✓ Enel owns California-based eMotorWerks, which operates a network of electric vehicle charging ports and supplies charging stations known as the JuiceBox. Through the JuiceNet platform, the charging facilities can be remotely controlled and aggregated for providing services back to the electricity grid (i.e., vehicle-to-grid). An extension of the §30C tax credit is critical to encouraging consumers to become early adopters of electric vehicle technology.
- 4. **Enact [S.1094/H.R. 2256](#), the “Driving America Forward Act”**, which would expand the §30D electric-vehicle tax credit. The new bill maintains the \$7,500 tax credit for the first 200,000 units that an automaker sells. But it also creates a new credit of \$7,000 for the next 400,000 vehicles sold by the same car company. Once an automaker hits a new cap of 600,000 electric vehicles, the credit starts to decline and is phased out completely after six months.
- ✓ An extension of the §30D tax credit is critical to encouraging consumers to become early adopters of electric vehicle technology.

### **The U.S. Electricity Sector is in the Midst of a Rapid and Structural Transformation**

Statistics from the 2019 Sustainable Energy in America Factbook,<sup>1</sup> recently released by the Business Council for Sustainable Energy and Bloomberg New Energy Finance provides up to date, annual national information on key trends in the U.S. energy sector and serves as a reference guide of leading energy statistics for use by policymakers and other stakeholders. The Factbook documents several noteworthy overarching electricity sector trends and demonstrates the impact policy has had in contributing to these changes. Renewable energy is a growth area of the U.S. electricity sector, delivering affordable, safe and reliable power to homes and businesses. Further, investment in renewable energy – combined with the deployment of other new technologies such as stationary energy storage, along with demand response, automation and digital applications – is decarbonizing the power sector, while keeping electricity costs low and creating new jobs.

Enel looks forward to working with members of the Senate Finance Committee as it considers additional tax measures that will create parity and benefit our nation's energy infrastructure, while also continuing U.S. leadership in the development of advanced energy technologies. Absent a price on carbon, Enel is interested in discussing the merits of a widely applicable, transferable technology-neutral tax credit based on carbon emissions.

For questions or further information, please contact Kyle Davis at [kyle.davis@enel.com](mailto:kyle.davis@enel.com).

cc:

Senator Pat Roberts (R-KS)  
Senator John Cornyn (R-TX)  
Senator Bill Cassidy (R-LA)

Senator Thomas Carper (D-DE)  
Senator Sheldon Whitehouse (D-RI)  
Senator Maggie Hassan (D-NH)

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<sup>1</sup> Business Council for Sustainable Energy, 2019 Sustainable Energy in America Factbook, available at: <http://www.bcse.org/factbook/>.



# Enel Green Power North America

A leading owner and operator of wind, geothermal, hydropower and solar power plants in the United States and Canada.

Enel Green Power North America, Inc. (EGP) operates more than 100 renewable energy power plants for a total managed capacity of approximately 5 Gigawatts (GW) across four different renewable energy technologies. EGP is committed to continued investment and growth in North America, as evidenced by a more than four-fold increase in managed capacity over the past five years.

Innovation is a key component of the company's pursuit of sustainable growth and EGP has adopted an open innovation approach that seeks to bring together partners to build a better world by working together. This collaborative philosophy also drives EGP local engagement, bringing value to every community in which it operates.



We are present across **24 U.S. states and 2 Canadian provinces**



We are **first in the world innovators**, having pioneered the Stillwater hybrid plant to combine two solar technologies with an existing geothermal plant



Since 2016, we have created approximately **3,500 construction jobs** at peak of construction across our construction sites



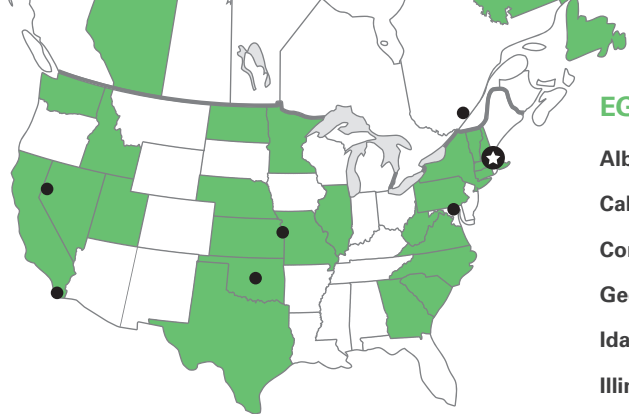
We employ over **650 full-time personnel** across North America



We produce enough energy to power nearly **1.3 million U.S. households** every year



We help avoid the emission of more than **11 million tons** of CO2 annually



## North America Headquarters

Andover, MA

## Regional Offices

Lenexa, KS  
Montreal, Canada  
Oklahoma City, OK  
Reno, NV  
San Diego, CA  
Washington, D.C.

 Capacity Under Construction

## EGP Renewable Energy Power Plants in North America

**Alberta, Canada:** 76 MW 


**California:** 13 MW 

**Connecticut:** 4 MW 

**Georgia:** 1 MW 

**Idaho:** 35 MW 

**Illinois:** 185 MW 

**Kansas:** 1.4 GW 

**Massachusetts:** 35 MW 

**Minnesota:** 230 MW  150 MW 

**Missouri:** 300 MW 

**Nebraska:** 320 MW 

**Nevada:** 47 MW  27 MW 

**Newfoundland, Canada:** 27 MW 

**New Hampshire:** 1 MW 

**New York:** 55 MW  37 MW 

**North Carolina:** 2 MW 

**North Dakota:** 150 MW 

**Oklahoma:** 1.72 GW 

**Pennsylvania:** 1 MW 

**South Carolina:** 16 MW 

**Texas:** 63 MW  450 MW  497 MW 

**Utah:** 25 MW 

**Vermont:** 27 MW  2 MW 

**Virginia:** 5 MW 

**Washington:** 24 MW 

**West Virginia:** 80 MW 



## A Leader in Wind Energy

Managed Capacity: 4,516 MW  
Capacity Under Construction: 450 MW

With 24 operating wind farms across 10 U.S. states and 2 Canadian provinces representing more than 4.5 GW of capacity, EGP has one of the largest wind portfolios

in North America. The U.S. is home to operational excellence, recently adding Diamond Vista, HillTopper, Lindahl, Rattlesnake Creek, Red Dirt, and Thunder Ranch wind farms to EGP's wind portfolio. Since the beginning of 2017, EGP has added more than 1.6 GW of new operating wind capacity, has the largest wind portfolio of any company in Kansas, and is the second-largest wind operator in Oklahoma.



## A Leader in Solar Technology

Managed Capacity: 206 MW  
Capacity Under Construction: 497 MW

EGP is a sustainable leader in solar innovation. As the owner and operator of the 150 MW Aurora solar project, one of the largest solar projects in Minnesota, EGP

has integrated a robust vegetation plan at the site to support the development of pollinator habitats. In addition to Aurora, the company operates the 2 MW Sheldon Springs solar project adjacent to its hydro project in Vermont and was the first company in the world to combine the continuous generating capacity of binary cycle, medium-enthalpy geothermal power with solar photovoltaic and solar thermodynamic at its hybrid power plant in Nevada.



## First in the World Geothermal Technology

Managed Capacity: 72 MW

EGP's geothermal portfolio includes the only geothermal plants in the world that employ large-scale fully submersible pumps for the extraction of geothermal fluid. Thanks to this advanced technology,

there is zero energy loss, consumption of water, and air emissions during their normal operations, making them especially environmentally friendly. At Stillwater, one of its two geothermal sites in Nevada, EGP operates the world's first integration at the same site of a medium enthalpy, binary cycle geothermal power with solar photovoltaic and solar thermal. In 2016, EGP announced its second U.S. hybrid power plant, having successfully added a fully submersible downhole generator at the Cove Fort geothermal plant in Utah, the world's first commercial integration of this kind at a large scale binary geothermal plant.



## A Leader in Hydroelectric Power

Managed Capacity: 299 MW

EGP has one of the largest hydropower portfolios in North America operating nearly 50 facilities ranging in size from 0.60 MW to 80 MW and representing 299 MW of total managed capacity. EGP has developed,

owned and operated small hydro projects since 1985 and its expertise in managing and optimizing hydropower generation is unparalleled. The company continues to grow its hydropower portfolio in North America by introducing innovative technologies that leverage existing assets, while also identifying new opportunities for growth.

## Enel Green Power North America, Inc.

EGP is part of the Renewable Energies division of the Enel Group, a multinational power company and a leading integrated utility player in the world's power and gas markets. Enel has a presence in 34 countries and connects more than 70.3 million customers to more reliable and increasingly sustainable power, drawing from a net installed capacity of more than 85.0 GW, 39.2 GW of which comes from renewable energy sources, including large hydro.

## Stay Connected to Enel Green Power:



[www.enelgreenpower.com](http://www.enelgreenpower.com)

\*All data current as of March 2019





## Energy Storage Tax Incentive and Deployment Act of 2019

### Senators Heinrich and Gardner (S. 1142) / Representatives Doyle, Buchanan, and Blumenauer (H.R. 2096)

#### Summary

- Under current law, energy storage only qualifies for the investment tax credit (ITC) when integrated with ITC-eligible solar resources under a narrow set of conditions and subject to recapture risks, creating tremendous uncertainty for investors.
- S. 1142 / H.R. 2096 modifies the existing ITC for numerous energy technologies to clarify eligibility of energy storage technologies (e.g., grid batteries, pumped hydro, etc.)

#### Background

- Energy storage technologies—grid batteries, pumped hydropower, compressed air, thermal storage, etc.—are uniquely flexible resources that modernize the electric system to be more efficient, resilient, and adaptable to any mix of electric supply resources. Over 70,000 people are employed in the U.S. energy storage industry.
- Numerous energy technologies—fuel cells, solar power, microturbines, combined heat and power, etc.—can access the ITC. Some of these technologies are competitors to energy storage. The narrow application of energy storage allowed by IRS rules prevents non-ITC-eligible resources (such as wind and natural gas) from deriving the same investment benefit as solar power.
- Clarifying eligibility of the ITC for energy storage will create a level playing field across electric grid technologies, improve business certainty, and allow energy storage to pair with any type of generation asset. Doing so will enhance grid efficiency and resilience while creating more jobs and capital formation.

#### Bill Details

##### **Business Energy Investment Credit for Energy Storage (Sec. 48)**

For commercial applications, the bill makes energy storage eligible for the tax incentive in section 48 of the IRS code. All energy storage technologies would qualify, including batteries, flywheels, pumped hydro, thermal storage, compressed air, etc. To qualify for the ITC, the system must have a storage capacity of at least 5 kilowatt-hours. The credit allowed is the same as currently available for fuel cells, solar energy, microturbines, combined heat and power, and geothermal heat pumps, including the phase down as shown in the table below. The IRS currently allows an ITC for energy storage when it is installed in conjunction with a solar energy system under specific conditions, although these conditions restrict storage operations and present recapture risks. The bill would extend the ITC for any energy storage project in all applications, including consumer-owned, grid-connected, or off-grid, as well as paired with any generating resources, such as gas or wind. As shown in the table below, the Section 48 ITC phases down and then remains at a lower level from the beginning of 2022.

##### **Residential Energy Property Tax Credit for Energy Storage (Sec. 25D)**

For residential applications, the bill provides homeowners the same credit as currently available for solar energy in section 25D. Only battery storage is eligible for the residential ITC, and the system must have a storage capacity of at least 3 kilowatt-hours. As shown in the table below, the Section 25D ITC phases out fully at the beginning of 2022.

**ITC Phase Out Schedule**

Application	Tax-Year Ending				
	12/31/19	12/31/20	12/31/21	12/31/22	Subsequent tax years
Business Investment Energy Storage Section 48	30%	26%	22%	10%	10%
Homeowner Residential Battery Storage Section 25D	30%	26%	22%	n/a	n/a

#### **Joint Committee on Taxation Score**

In the 115<sup>th</sup> Congress, JCT estimated that storage eligibility for the ITC would create a tax expenditure of ~\$300MM over 10 years.

Item	Not a factor in current bill		Fiscal Years [Millions of Dollars]				
	2018	2019	2020	2021	2022	2018-22	2018-27
Section 48.....	-12	-30	-40	-43	-35	-160	-259
Section 25D.....	-1	-5	-10	-13	-13	-42	-51



April 15, 2019

The Honorable Mitch McConnell  
Majority Leader  
U.S. Senate

The Honorable Chuck Schumer  
Minority Leader  
U.S. Senate

The Honorable Chuck Grassley  
Chairman, Committee on Finance  
U.S. Senate

The Honorable Ron Wyden  
Ranking Member, Committee on Finance  
U.S. Senate

Dear Leader McConnell, Leader Schumer, Chair Grassley, and Ranking Member Wyden,

As you and your colleagues consider energy tax extenders legislation, we urge you to include the bipartisan *Energy Storage Tax Incentive and Deployment Act* (S. 1142), which would ensure a level playing field for energy storage as a standalone asset to compete with all other energy resources made eligible for Section 48 & 25D investment tax credits ("ITC").

S. 1142 would resolve the uncertainty facing companies who seek to utilize the ITC for energy storage, spurring greater investment and creating jobs while extending the benefits of energy storage deployment among a wider diversity of technologies and industries. Those deployments in turn will accelerate the transition to clean energy and position the U.S. as a global leader in energy storage technology.

We encourage you to support U.S. companies' investment and jobs in making America's power system more resilient, efficient, sustainable and affordable with energy storage. As you and your colleagues consider energy tax extenders legislation, inclusion of ITC eligibility for energy storage is among the nearest-term opportunities to advance clean energy in this Congress.

Sincerely,

Advanced Energy Economy (AEE)  
American Council on Renewable Energy (ACORE)  
American Wind Energy Association (AWEA)  
ClearPath Action  
Citizens for Responsible Energy Solutions (CRES)  
Energy Storage Association (ESA)  
National Electrical Manufacturers Association (NEMA)  
National Hydropower Association (NHA)  
Solar Energy Industries Association (SEIA)  
Sheet Metal and AC Contractors National Association (SMACNA)  
California Energy Storage Alliance (CESA)  
New York Battery and Energy Storage Technology Consortium (NY-BEST)



June 12, 2019

The Honorable Chuck Grassley  
135 Hart Senate Office Building  
Washington, DC 20510

The Honorable Richard Neal  
2309 Rayburn House Office Building  
Washington, DC 20515

The Honorable Ron Wyden  
221 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Kevin Brady  
1011 Longworth House Office Building  
Washington, DC 20515

Dear Chairmen Grassley and Neal and Ranking Members Wyden and Brady,

The Geothermal Resources Council (GRC) kindly urges Congress to immediately pass legislation to extend the expired federal tax credits benefiting geothermal energy.

The tax credits have remained lapsed since the end of 2017, creating confusion for the numerous industry sectors that utilize these incentives to support deployment of clean energy solutions. The continued uncertainty also undermines the effectiveness of these incentives and stands as a needless barrier to additional job creation and economic growth.

As the professional association for the geothermal industry and community, the GRC can attest to the vital importance of the tax credits to the success of geothermal energy business. Our industry needs an extension of the expired tax credit — two years retroactive (2018-19) and ideally at least two years forward (2020-21). The tax credits provide a predictable market signal for project development, which in turn leverages private investment and promotes job creation and local economic benefits across the country.

We strongly support the Tax Extender and Disaster Relief Act of 2019 introduced on February 28 by Senate Finance Committee Chairman Chuck Grassley and Ranking Member Ron Wyden. We applaud them for including an extension within “Section 107. Credit For Electricity Produced From Certain Renewable Resources”, specifically Section 107(a)(3), which benefits geothermal energy. We urge the Senate to take up this bill as soon as possible and for the House to follow suit expeditiously. Quick action on

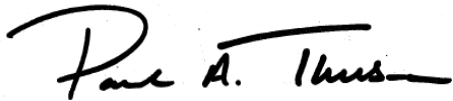
this issue is critical. Once the extenders package is passed, we look forward to a discussion on the long-term future of geothermal energy incentives.

Geothermal power is a critical source of renewable electricity for U.S. households and businesses as we transition to a clean energy future. It is affordable, reliable and plays a critical role in maintaining a functioning electric grid – due to its position as flexible, renewable, baseload resource that can complement other intermittent renewable resources. Extension of the expired tax credits will play an important role in continuing the development and support of our industry.

The GRC is a non-profit professional association for the geothermal industry and community in the USA and abroad. We were founded in 1972 and are headquartered in Davis, California. We have over 1,300 members from around the world and are working to advance our industry by supporting the development of geothermal energy resources through communication of robust research, knowledge and guidance.

We thank you for your consideration. We are available to answer questions and discuss further at your convenience.

Respectfully,



Paul Thomsen  
GRC Policy Committee Chair  
pthomsen@ormat.com



Will Pettitt, PhD  
GRC Executive Director  
wpettitt@mygeoenergy.org





June 20, 2019

The Honorable John Thune  
Co-Lead, Senate Finance Committee Energy Extenders Working Group  
511 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Debbie Stabenow  
Co-Lead, Senate Finance Committee Energy Extenders Working Group  
731 Hart Senate Office Building  
Washington, DC 20510

Dear Senator Thune, Senator Stabenow and All Members of the Senate Finance Committee Energy Extenders Task Force:

The Baseload Renewables Coalition, comprised of the National Hydropower Association ("NHA"), the American Biogas Council ("ABC"), the Biomass Power Association ("BPA"), and the Energy Recovery Council ("ERC"), appreciate the opportunity to inform your work as the Working Group, and Committee as a whole, consider the future of energy tax extenders and long-term renewable energy tax policy.

Our industries provide baseload, renewable power to communities across the United States, employing tens of thousands of Americans in good-paying jobs, many of whom live in rural areas. Despite the many benefits we collectively provide, the tax credits for biomass, biogas, hydropower, marine energy, and waste-to-energy have been expired since December 31, 2017, while other renewable energy industries have enjoyed long-term extensions.

This disparity in treatment has placed hydropower, biomass, waste-to-energy and biogas technologies at a significant competitive economic disadvantage in the market for new renewable electricity generation, particularly in the eyes of investors who are seeking certainty with respect to tax incentives. Renewable baseload technologies play an indispensable role in maintaining a reliable and functioning electric grid system, while also supporting the integration of additional wind and solar generation into the grid.

Consistent, stable tax policy support for our technologies will reinvigorate project development, leverage significant private investment and promote job creation and local economic benefits across the nation.

Without it, there will continue to be less deployment of reliable, renewable, baseload power, which we believe is not the intent or desire of Congress and not in line with a national energy strategy that seeks to reduce carbon emissions while maintaining grid reliability and resilience.

Passage of a tax extenders package that includes an extension of the Section 45 PTC, with the election to take the ITC, remains one of the highest priorities for all of our industries. As such, we have supported S. 617, the Tax Extender and Disaster Relief Act of 2019 with the extensions through 2019. We also support H.R. 3301, the Taxpayer Certainty and Disaster Tax Relief Act of 2019, which provides an extra year of certainty with an extension through 2020.

Additionally, we believe continued long-term incentives for our industries (providing the same market signal that other technologies have received in the past with their multi-year extensions) are needed and warranted.

Finally, our associations are also supportive of the tax credit for energy storage, such as that contained in S. 1142, the Energy Storage Tax Incentive and Deployment Act of 2019.

Thank you for the opportunity to provide this written input to the working group. Our associations, either as a coalition or individually, would also appreciate meeting with you and your staff as you continue to consider energy tax extenders and future long-term energy tax policy.

Sincerely,



Linda Church Ciocci, President and CEO  
National Hydropower Association



Patrick Serfass, Executive Director  
American Biogas Council



Robert E. Cleaves, IV, President and CEO  
Biomass Power Association



Ted Michaels, President  
Energy Recovery Council