

Comments Prepared for: **Senate Committee on Finance, Tax Reform Working Groups**

On behalf of the **National Ground Water Association**

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Re: Energy Efficiency and Economic Development

The National Ground Water Association (NGWA) writes in strong support of tax incentives that promote the use of one of the most energy efficient and renewable technologies—geothermal heat pumps-- to heat and cool residential and commercial buildings.

NGWA commends the Senate Finance Committee in pushing for comprehensive tax reform in 2015. The bipartisan approach of the working groups, combined with an effort to engage the public, will provide a solid foundation from which to base its proposal. NGWA acknowledges that the tax code is overdue for reform, but would like to highlight several provisions whose inclusion in the tax code plays an important role in stimulating economic growth, driving innovation, and supporting well-paying jobs.

NGWA is the world's largest organization of groundwater professionals, whose membership also comprises professionals who install geothermal heat pump systems (GHPs). A GHP system is a highly efficient renewable energy technology that uses the ground or ground water to heat or cool buildingsⁱ. The systems conserve energy by pumping excess warm air from a building during warmer months and discharging it to the Earth, and during cool months the GHPs pump warmer air from the Earth to a building during cooler months. Though energy is required to operate the heat pump, the amount of energy conserved by transferring energy to and from the Earth reduces energy demand for the purchaser of the GHP—Energy Star certified GHPs are over 45 percent more efficient than standard heating and cooling appliances.

The use of GHPs also allows for increased efficiency due to the concept of “waste energy recovery,” where hot or cold air can be circulated to other parts of a structure, rather than wasted, as other more traditional heating and cooling systems do.

GHPs have been widely adopted across the country and across climates, making them an incredibly versatile renewable technology. However, the initial costs can be prohibitive. Therefore, the following provisions in the tax code must be preserved in order to enable greater adoption of this important technology.

Residential Renewable Energy Tax Credit (Sec. 25D) and Investment Tax Credit (Sec. 48a)

Initial costs The Residential Renewable Energy Tax Credit (RRETC) and the Investment Tax Credit (ITC) each represent important portions of the existing tax code that should be preserved and extended. The RRETC represents a 30% tax credit for homeowners who installs GHPs through December 31, 2016 and was extended to GHPs through the Energy Improvement and Extension Act of 2008. The Investment Tax

Credit, which was made applicable to GHPs as a part of the 2008 Emergency Economic Stabilization Act, also expires in 2016.

Each incentive acts as a powerful tool to compel residences and business to adopt energy efficient technologies. The wide-ranging benefits across the economy provide ample reason to continue providing the tax credits as incentives to home and business owners.

Energy Efficient Commercial Buildings Deduction (Sec. 179D)

With the construction industry continuing to face economic hardship, the deduction for construction of energy efficient buildings provides an incentive to architects, contractors and engineers. This deduction helps stimulate an economic rebound in housing and commercial markets, while working to alleviate the unemployment rate that continues to plague the construction sector at levels significantly higher than the rest of the economy.

5-year MACRS Depreciation

The Modified Accelerated Cost Recovery System encourages private sector investment in energy efficient technologies by accelerating the rate of return that businesses will see on their investments. In doing so, adoption of important technologies that have high initial costs, like GHPs, has continued despite the economic downturn.

Though MACRS has been in place for various technologies since 1986, it was only recently added to apply to GHPs in 2008, further justifying the need to continue MACRS for installation of GHP.

Select Benefits of Energy Efficiency Tax Provisions

- *Money Returned to Consumers*--Investing in energy efficiency technologies, like GHPs, have a positive impact on energy prices for consumers by lowering monthly utility bills. Lower monthly utility bills provide consumers with the flexibility to spend or reinvest those savings in other ways, which could generate tax revenues.
- *Job Creation*--The installation of GHPs represents a source of well-paying jobs for an industry that continues to recover from the recession. Many GHP installers are small business owners, whom the economic recession hit particularly hard. And while GHP technology is proven, slowdowns in the economy—and the collapse of the housing market--hindered adoption. The overall economy and housing markets are slowly rebounding, but not as quickly as needed, further justifying the need to extend the tax credit for residential and commercial installation.
 - In a recent project at Ball State University, over 2,300 jobs were created throughout the installation of GHPs across campus.
- *Cost Savings to Businesses*—Businesses drive the U.S. economy, and the ITC helps ensure businesses have capital necessary to not only invest in energy saving technology like GHPs, but to also utilize cost-savings and reinvest them, helping to generate economic growth.
 - A high school in Cedar City, UT installed a GHP system and is able to realize over \$58,000 in savings each year.

- *Environmental Benefits*-- Buildings are the largest single sector of total U.S. energy consumption, accounting for over 40% of energy used. The potential represented by increased use of GHPs is enormous. A 2008 Department of Energy, Oak Ridge National Laboratory report concluded that aggressive deployment of GHP systems in buildings could avoid the need to build up to 48 percent of the net new electric generation capacity additions projected to be needed nationwide by 2030.ⁱⁱ Oak Ridge National Laboratory also projects that substantial greenhouse gas emission reductions can be achieved by retrofitting single family homes with GHP systems.ⁱⁱⁱ
 - At the Fort Polk community in Louisiana, housing units were retrofitted with GHPs, and the amount of energy saved was between 36 and 42 percent each year.
- *Flattened Energy Load for Utilities*--GHP systems flatten the electric utility load patterns. Flattening the load lessens the amount of peak-load generation capacity that must be installed as well as smoothing out electrical generation use, thereby saving the utility and customer money and adding stability to the electric system.

Extension of the renewable energy tax credits for geothermal heat pumps and preservation of the 179D deduction and MACRS depreciation would aid in reinforcing efforts in Congress to promote energy efficiency. These efforts, like the Energy Savings and Industrial Competitiveness Act, continue to garner strong, bipartisan support, demonstrating the value and importance of the promotion of renewable and energy efficient technologies.

The tax code has become complex and antiquated since 1986, but energy efficiency and economic tax incentives enacted over the years have a proven track record for spurring investment while achieving energy policy objectives considered important to Congress. NGWA believes it is critically important for the Committee to remain cognizant of the important economic and social objectives of these incentives while considering comprehensive changes to the tax code.

The aforementioned tax provisions are relatively new and represent an important part of reenergizing America's innovation economy. For these reasons, NGWA believes they warrant preservation in order to allow for GHP technology to mature and become a greater part of America's energy future.

For more information, please contact:

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ⁱ U.S. Department of Energy. Retrieved April 17, 2014 at <http://www1.eere.energy.gov/geothermal/heatpumps.html>

ⁱⁱ Hughes, Patrick J. Geothermal (Ground-Source) Heat Pumps: Market Status, Barriers to Adoption, and Actions to Overcome Barriers. Oak Ridge National Laboratory. December 2008, page 1. Retrieved September 4, 2014 at http://web.ornl.gov/sci/ees/etsd/btrc/pdfs/geothermal_report_12-08.pdf

ⁱⁱⁱ Liu, Xiobing. Assessment of National Benefits from Retrofitting Existing Single-Family Homes with Ground Source Heat Pump Systems. Oak Ridge National Laboratory. August 2010. Page x. Retrieved September 4, 2014 at http://btrc.ornl.gov/pdfs/Liu_GSHP_Report_8-30-2010.pdf