RECYCLING ENERGY TAX REVENUES

HEARINGS

BEFORE THE

SUBCOMMITTEE ON ADMINISTRATION OF THE INTERNAL REVENUE CODE

OF THE

COMMITTEE ON FINANCE
UNITED STATES SENATE

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RECYCLING ENERGY TAX REVENUES

MONDAY, JUNE 6, 1977

U.S. SENATE,
SUBCOMMITTEE ON ADMINISTRATION
OF THE INTERNAL REVENUE CODE
OF THE COMMITTEE ON FINANCE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:30 a.m. in room 2221, Hon. Floyd K. Haskell (chairman of the subcommittee) presiding.

Present: Senators Haskell and Dole.

Senator HASKELL. This morning the Subcommittee on Administration of the Internal Revenue Code begins its hearings on administrative problems involved in recycling energy tax revenues. To fully understand the problems involved and to put such issues in proper prospective, we have asked a group of distinguished economists to present us with their views regarding our energy crisis and the ways in which they suggest we moderate the economic disruption which may occur in connection with implementing short- and long-term solutions to this energy problem. We have been told that our energy problem is a hydra-headed monster. We have been told that we have finite energy reserves. We have been told that to encourage expanded exploration and development of our limited reserves and to promote conservation of existing supplies, higher prices are necessary. We are also told that our dependence on foreign sources of energy places us in an extremely vulnerable position. Finally, we are faced with a variety of environmental concerns associated with the production, processing and use of energy supplies.

It is our concern that higher energy prices to solve these problems may be inevitable. The task of Government will be to moderate the impact of these higher prices on our economy. Of highest priority will be methods to soften the impact of this burden on our individual citizens.

[The committee press release announcing this hearing and an outline of the subject matter follows:]

COMMITTEE ON FINANCE,
U.S. SENATE,
May 26, 1977.

PRESS RELEASE

SUBCOMMITTEE ON ADMINISTRATION OF THE INTERNAL REVENUE CODE ANNOUNCES HEARINGS ON ADMINISTRATIVE PROBLEMS INVOLVED IN RECYCLING ENERGY TAX REVENUES

Subcommittee Chairman Floyd K. Haskell (D.-Colo.), announced today that the Subcommittee on Administration of the Internal Revenue Code will hold hearings on *June 6 and June 27* on the administrative problems involved in col-

lecting and recycling huge energy tax revenues back into the economy. The Colorado Senator stated that he is particularly interested in analyzing who will bear the burden of the energy tax program.

The hearings will begin at 9:30 A.M. in Room 2221, Dirksen Senate Office Bldg.

Senator Haskell said the hearings will attempt to focus on the Administration's energy tax program, even though certain aspects have yet to be developed. Haskell said that on May 15 of this year, the New York Times reported that 50 percent of all respondents to a recent poll indicated that inflation is the most important economic problem facing the country today. Only 34 percent of those respondents viewed unemployment as the most urgent economic issue. Arthur Okun, former Council of Economic Advisers Chairman, has suggested that the Administration's energy program is unnecessarily inflationary. "These hearings will seek to determine what kinds of difficulties may be involved in attempting to neutralize the inflationary aspects of the proposed energy program," said Haskell. "To better assess the merits of this program, designed to promote conservation by increasing the relative cost of energy, we have invited a number of leading economists to provide us with the benefit of their views.

"We hope to develop information concerning the program's impact on GNP, personal income and consumption, jobs, resource allocation, sector-by-sector dislocations precipitated by higher energy costs, inflation, the short- and long-run aggregate effects of higher energy costs and the consequences of failing to take any action."

Some economists have indicated that energy tax revenues should be recycled and reinjected back into the economy in an inflation-neutralizing manner. Haskell said these hearings will attempt to focus on whether the primary consideration of that effort should be:

Equity;

Moderating the impact of the program on particular income classes;

Moderating the inflationary impact disclosed by the Consumer Price Index;

Offsetting the cost of other major programs such as welfare reform, social security or tax reform;

Simply making large infusions of money back into the economy through government spending to offset the sums that will be removed in the form of energy taxes.

The hearing on Monday, June 27, will center on the administrative feasibility of the proposals advanced at the first day of hearings. The June 27 witnesses will also try to determine which mechanisms may be most desirable.

"They will also be asked to discuss the issue of 'leakage,'—how much of the revenues passing through the sticky fingers of Uncle Sam will of necessity, fail to be channeled back into the economy," said Haskell. "An additional facet to be considered will be whether a program of energy taxes introduces further unwarranted complexity into our tax system."

The following witnesses have been scheduled to testify on Monday, June 6:

Dr. John Palmer, The Brookings Institution;

Professor Wallace Oates and William Baumol, Princeton University;

Professor Lawrence R. Klein and Messrs. R. M. Young and George Schink, Wharton Econometric Forecasting Associates;

Professor Robert Hall, Massachusetts Institute of Technology;

Dr. Rudolph Penner, American Enterprise Institute; and

Dr. Alvin A. Cook, Jr. and Miss Virginia Rogers, Data Resources, Inc.

Witnesses for the June 27 hearing will be announced in the next few weeks.

Legislative Reorganization Act.—The Legislative Reorganization Act of 1946, as amended, requires all witnesses appearing before the Committees of Congress "to file in advance written statements of their proposed testimony, and to limit their oral presentations to brief summaries of their argument."

Witnesses scheduled to testify must comply with the following rules:

(1) A copy of the statement must be filed by the close of business two days before the witness is scheduled to testify.

(2) All witnesses must include with their written statement a summary of the principal points included in their statement.

(3) The written statements must be typed on letter size paper (not legal size) and at least 75 copies must be submitted by the close of business the day before the witness is scheduled to testify.

(4) The witnesses will be allowed 15 minutes for their oral presentation.

Written testimony.—Other persons interested in presenting their views to the Subcommittee are urged to prepare a written statement for submission and inclusion in the printed record of the hearings. These written statements should be submitted to Michael Stern, Staff Director, Committee on Finance, room 2227, Dirksen Senate Office Building on or before July 30, 1977.

ADMINISTRATIVE PROBLEMS INVOLVED IN RECYCLING ENERGY TAX REVENUES

OUTLINE OF SUBJECT FOR HEARINGS BEFORE SUBCOMMITTEE ON ADMINISTRATION OF THE INTERNAL REVENUE CODE, PREPARED BY THE STAFF OF THE SENATE FINANCE COMMITTEE

This outline summarizes the subject of hearings to be held in June before the Subcommittee on Administration of the Internal Revenue Code.

I. Need for national energy program

Economists now generally accept the proposition that there really is a national energy problem which requires some solution if the continued economic success of the United States is to be assured for the future. The fundamental goal of an energy program for the United States would be to curtail dependence on foreign energy sources and to simultaneously minimize domestic economic and social disruptions.

II. Energy conservation

For the short term it is generally agreed that energy conservation is the most promising area for curtailing U.S. dependence on foreign oil. Economists, by and large, seem to believe that the most promising path toward greater conservation is by, in one way or another, allowing the price of energy to rise. In this way demand can be dampened, a true economic incentive for greater efficiency in the use of energy will be put in place, and an economic stimulus for the production of additional supplies will similarly be permitted to come into being. This is a brief summary of the traditional economic view.

III. The role of Government in adjusting the impact of higher energy prices

To the extent the full impact of higher energy costs is not politically acceptable in terms of higher living costs for individuals and increased revenues for energy suppliers, it is incumbent on government to take a role in adjusting such phenomena. The administration has proposed a series of excise taxes to redirect the bulk of higher energy costs to government coffers so that these revenues may be redistributed by the government back into the economy for the purpose of offsetting what the Administration has determined to be unduly burdensome price increases on individuals and businesses throughout the economy.

IV. Issues which must be addressed by the Congress in evaluating the merits of the administration's energy program

1. Is the administration's program too complex?

(a) For example, does the establishment of six separately-priced classes of oil create a situation which is excessively difficult to monitor and excessively difficult to comply with?

(b) Does a system of individual tax cuts and tax credits provide a simple and efficient mechanism for the redistribution of energy tax revenues?

2. Will the proposed energy program actually result in a shift away from the use of petroleum and natural gas and an increase in the use of coal, geothermal, solar, hydroelectric, and nuclear energy sources?

3. Can these desired shifts be attained on the supply side with coal production reaching needed levels and sufficient nuclear plants being completed within reasonable time frames?

4. Can regulatory procedures be sufficiently improved to make the attainment of these goals possible?

5. Is a gas guzzlers tax on large automobiles necessary? Will such a tax reduce the relative cost of smaller cars and stimulate increased automobile sales?

6. What will the impact of these mandated energy price changes be on the construction industry? How will such changes affect interest rates which have such a significant impact on the construction industry?

7. Are there any major reasons which make a gasoline tax more attractive than merely allowing the price of that commodity to move toward its true economic cost?

8. What would be the consequences to our economy if our government fails to take any action on the energy question?

9. Assuming that government action should be prompt and should provide both consumers and producers with a clear signal of the direction in which this nation ought to be moving, can this be done in a manner that is not excessively disruptive to our economy? Can this be done in a simple fashion with a single across-the-board BTU-type tax and a simple refundable tax credit to be distributed to all individuals?

Senator HASKELL. To fully understand the problems involved and put the issues in perspective, we have a group of distinguished economists to present us with their views regarding the energy crisis and the ways in which they suggest that we moderate the inevitable economic disruption which may occur with the short-term and long-term solutions, both as proposed by the President and otherwise, to solve the problem.

I think that it is terribly important that we examine this issue of taking money into the Federal Treasury and then disgorging it, both looking at the economic impacts that might result and what might be the increase in administrative costs.

Senator Dole, do you have a statement?

Senator DOLE. Thank you, Mr. Chairman.

As I understand it, the goal of the Carter administration's energy proposals is to cope with the very serious energy shortage which the Nation faces today. This is a commendable goal. I concur with it and I applaud it.

But as I examine the program, I see virtually no correlation between the goal and the means proposed to achieve it.

One of the overriding concerns of the administration appears to be that the producers of oil and gas will realize a financial return on their investment. Preventing that from happening seems to me to be the central purpose of the tax scheme which we will consider today.

The tax scheme attempts to inflict the discipline of the free market system on U.S. energy consumption, while denying the benefits of the free market system to the U.S. consumer. These benefits would be denied by depriving oil and gas producers of any economic incentive to find and develop new supplies, thus reducing the shortage, increasing the supply, and eventually reducing or at least stabilizing prices.

On that question, I want to raise just two points. First, the administration's position is based on the a priori assumption that there is no need for any incentive to find and develop new sources of oil and gas, because there are no significant amounts of oil and gas left to be found. That is not a view uniquely held by the Carter administration. One of the cliches of the energy situation is the phrase: "We are running out of gas and oil." That is a relative truth. Oil and gas are not self-renewing, and since we are using those resources it is possible to say we are running out of them. The real question is not whether, but when.

It is far more accurate to say that we are running out of proven deposits of oil and gas. We are not moving aggressively to find new deposits. And the reason is not simply because there is no financial incentive for producers to go after more oil and gas but, more directly, because there is no financial justification to put money into the effort. Assembling capital for exploration is becoming increasingly difficult because investors can find safer places for their money than an industry whose prices are regulated at the same time its costs are soaring.

It does seem to me that question of whether America still has significant untapped sources of oil and gas is at the very heart of the question of the validity of controlled oil prices, regulated gas prices, the equalization tax, and the consumption tax.

The oil and gas industry—whose business it is to know—tell us there are very substantial amounts of petroleum left to be found, and the President's energy proposals are predicated on his apparent belief that there are not. I don't know how we find out who is right, but I do know the proposals before us today constitute a self-fulfilling prophecy. This program is designed—unintentionally, but no less effectively—to insure that we will exhaust our proven sources of oil and gas, and by failing to explore for more we will, in effect, run out.

The second point I want to raise goes to this issue of economic incentive—the profit motive.

One very popular view today is that the energy companies refuse to look for oil and gas because price controls prevent them from making a big fat profit.

The fact is that, as I mentioned above, oil and gas producers cannot afford to look for more deposits because they cannot afford to make the big fat investments that exploration and development require. Profit isn't just what goes into a shareholder's pocket. Part of it is reinvested. Profits are also an index by which capital markets assess the value of investment. So we aren't talking—as some believe—about an industry that doesn't make enough money to satisfy its alleged greed. We're talking about an industry which is prohibited from making enough money to continue doing business.

This is a fundamental issue in the hearings we begin today.

Senator HASKELL. Prof. Robert Hall, of the Massachusetts Institute of Technology.

STATEMENT OF ROBERT E. HALL, PROFESSOR OF ECONOMICS, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Mr. HALL. Thank you, Mr. Chairman. I will summarize the statement that I prepared and distributed.

My statement concerns the proposed wellhead tax on crude oil which I feel is by far the most important and best conceived part of the administration's energy program.

Even if every other part of the program succumbs to criticism from economists or to adverse political pressure, the Nation will have made a large step toward the solution of the energy problem if the crude oil tax is enacted and the existing system of price controls, allocation, and entitlements is scrapped.

I emphasize the second part of that, as much as the first. The major step forward here is to get rid of a very unfortunate set of programs that were enacted in haste in 1974. It is an opportunity to get rid of some very unfortunate provisions.

Let me summarize the numerical estimates, first of all. I find the proposed tax of crude oil would raise nearly $20 billion in revenue in 1980. That number is subject to great uncertainty. My figure exceeds what I believe the administration's estimate of it is. I am unable to track that down in full.

Senator HASKELL. What is that?

Mr. HALL. The exact number is $19.6 billion in revenue in 1980. Let me go over it when we get to the details of the calculation.

The effect of the tax would be to raise the price of crude oil to refiners to the world level. In 1980, I compute it would be $2.80 above what it would be if we continued with the system we have today.

The resulting increase in the price of oil products will be about 4 cents per gallon. Overall, the Nation's energy bill will rise by about $16 billion in 1980 as a result of the tax. Further, there will be small increases of 0.2 to 0.3 percentage points in the rate of inflation in 1978, 1979, and 1980. Finally, the preferred method for returning the revenue to the economy is in the form of a flat energy credit of about $120 per person against personal income taxes.

I think everyone here probably understands the way that this tax will be administered, so I will skip over the details on page 2 of my statement.

The proposed system recognizes that neither the world oil price nor the overall price level can be predicted accurately, so it links the tax rates to these crucial variables. In other words, from the point of view of the analyst, one has to guess what this program really is because it does not put in numbers in the legislation. It merely refers to numbers that will become known some time in the future.

My analysis of the program rests on a prediction that the general rate of inflation in the United States between 1977 and 1980 will be 6 percent per year and the rate of increase of the world oil price will be 8 percent per year. Opinions differ on that subject. I think those are representative, expert estimates.

There is a table on page 3 that shows how I see the system operating in 1980, after all aspects of the wellhead tax have been phased in.

The purpose of the tax is to keep the tier 1 price very low. That is the windfall tax part of this proposal. The tax brings the price to refiners of oil up from $6.60, where it seems to be headed under this legislation before 1980. The tax is $11.40, which I see the world price of oil in 1980, at $18 a barrel.

In the other tiers, the taxes are lower to provide production incentive.

There is some question about tier 3. The legislation as I see it, does not really specify exactly how price controls are to be imposed on the new oil in tier 3. It does not seem to say that $1 a barrel tax is going to be imposed, but the price is to be held to 6 percent per year increase. There will be a $1 gap, so I put in a $1 tax. That is one of the reasons that my revenue estimate is higher than other people's.

In order to get the revenue, one must guess what production will be in the three tiers in billions of barrels per year and then multiply by the price to get revenue.

Let me mention that the split between tier 1 and tier 2 depends sensitively on how the program is administered. A lot of exceptions were granted in the past. For example, a definition of stripper oil makes a big difference in tier 1 versus tier 2, so we are very uncertain about that. It makes a big difference on the revenue side.

If I am wrong, if more of this is going to be in tier 2 than tier 1, the revenue would be less, and, of course, the revenue figures are

extremely sensitive, proportionate to the price of oil, more than proportional, because it depends upon the gap between the control price and the world oil price.

If I am wrong, if the world price of oil is $17 a barrel in 1980, revenue would be about $3 billion less, $16.3 billion.

Now, let me discuss the impact of this as seen by the consumer. The most important thing to say is that one cannot simply divide some measure of the crude oil price by 42 gallons per barrel to get the impact on petroleum price. There is a controversy going on today among economists about exactly how large that figure is.

One respected body of opinion says removing the controls on the price of crude oil would have no effect at all on the price of products. In other words, there simply is no distributional issue at all. I do not subscribe fully to that view, but I do subscribe to the view that one must write down——

Senator HASKELL. Could you go over that again? Some people say that increasing the price of oil by taxation would have no effect whatsoever on the product?

Mr. HALL. That is exactly right.

Senator HASKELL. Including utility rates or the price of producing various commodities?

Mr. HALL. I am speaking of various petroleum products such as gasoline or heating oil. I am not sure of the effect on the residual oil that utilities buy.

I do want to call the subcommittee's attention to this very important point, and that is, you cannot divide the crude oil price, whatever it is, my figure is $2.80, by 42 gallons a barrel to get the price effect. There is a market for products. You have to analyze the market.

The people who have analyzed it reached the conclusion that not all of the cost increases will be passed on. Another way to put it, the entitlement system today is generating extra profits in the refining sector in the economy.

One of the interesting and favorable effects of the proposed wellhead tax is that, to a certain extent it is not a tax on refined products. It operates that way, not so much directly, but by putting in the wellhead tax that would eliminate the entitlement system.

The entitlement system severely distorts the petroleum sector of the economy in the way that it generates profits. We do not know how large the figure is. One estimate is $8 billion, a very substantial fraction of the total amount of money we are discussing here.

I think that is an extreme. I think it would probably be lower.

In my analysis, $2.80 is the 1980 effect on the world price of crude oil. If you divided that by 42 gallons a barrel you get 6.7 cents effect on the price of gasoline. I think the effect would be 4 cents. Part of that will be absorbed in the form of decreased profits among refiners.

Another way to put it, we would open up the U.S. economy to competition from foreign refined products by getting rid of the entitlement system. The entitlement system effectively puts a pretty heavy tax on the importation of refined petroleum products. If we can get rid of the entitlement system, which I think is something that should be done immediately, and which I support in this legislation, largely because it would phase the system out in 1980, then we would get rid of that severe distortion.

Because of that, I do not see a large impact of the prices of refined petroleum products attributable to this legislation.

Now, let me refer you to page 5 where there are two forecasts of the retail price of gasoline, with and without this proposed wellhead tax. Let me start out by saying there is a typographical error. In the top of the page, in line 1978, the retail price of gasoline in 1978 is 68 cents. Those numbers should be 63, 68, 73, 80.

The effect of the program, depends on what you think would happen if the program were not enacted. What I think would happen is that we would continue the current unfortunate entitlement system. I have projected the retail price of gasoline in 1980 on the basis of that. That appears on the bottom of the page. I compare the proposed program to eliminate entitlements, replacing them with the wellhead tax, and you see the effect of a penny a gallon in 1978, 2 cents a gallon in 1979, 4 cents a gallon in 1980 and beyond.

I did not attempt to analyze beyond 1980. It is about 4 cents a gallon. There is a good deal of uncertainty about that.

As I say, there is an influential, respected body of opinion that says that number should be zero. The price of gasoline in 1980 would be left literally unaffected by this legislation. I do not believe that. I certainly also do not believe that that would be the full 6.7 cents. I do want to direct the subcommittee's attention to this issue, which I think has not been aired publicly at all.

It means that there is even less to fear by way of inflationary impact of this program than you get if you just assume that the price of products was determined entirely by the price of crude oil.

Now, page 6 addresses another question, a difficult question to answer: If we raise the price of petroleum products, what does it do to other energy prices?

Energy prices move in tandem. We know that. The international price of oil went up in 1973 and 1974. The coal price went up along with it. That will happen again.

To the basic $12 billion that you get by taking petroleum at 4 cents a gallon, I add $4 billion for this indirect effect for the price of other energy for the total impact on the economy of $126 billion. I would point out that $16 billion is less than $19 billion.

The effect of this on the Nation's energy bill could easily be less than the proceeds of the tax. That is because we have such a perverse system today where we are generating all sorts of extra profit, apparently, in the domestic refining industry by essentially prohibiting imports. There is a dramatic difference, for example, in operating rates between U.S. refiners who are refining flat out at high costs and refining in the Caribbean and elsewhere.

What we ought to do is reduce operating rates domestically and increase them in the Caribbean. That, incidentally, has a big advantage in decreasing pollution. It is hard to overstate the perversity of the current system.

If you take that $16 billion figure, that includes a little bit of the effect of coal and natural gas too, and plug it in to pretty well-established formulas for the effect of one price on the overall price level, you get pretty small effects.

The overall effect on the price level in 1980 is about .6 of a percentage point. When that is phased in, it is .2 and .3 of a percentage point.

Now, let me turn to the central issue, how to get this revenue back into the economy.

There are many ways of doing that. We have seen a large number—I have made a list here—of proposals for doing that. I am in favor, very strongly, of the simplest, direct approach to this problem, incidentally, the one proposed by the President, namely, an equal per capita energy credit against Federal income taxes.

I calculate if the basis of that credit is every American 16 or over, an arbitrary age choice, that is $120 per person. That would simply appear as a reduction to the very end of the income tax form where the current income credit appears today.

Of course, there is a problem which this subcommittee will struggle with in trying to evaluate the President's proposal—what do you do about people who do not file personal income tax and cannot be included in somebody else's income tax?

The administration has proposed a rather complicated system, I am not sure I understand why it is so complicated, in which there would be several layers, and States would be responsible for tracking down the individuals who somehow escaped personal income tax, or redistributional programs, like AFDC. This is administratively complicated because people move from one State to another. What do you do about somebody who, in the middle of the year, moves from one State to another?

It makes sense, if you are going to have a national policy, to administer it at the national level, to get around problems like that. I am not at all an expert in administering income tax. I see no reason why we cannot go ahead and let everybody file.

That, of course, would generate several million additional tax returns, but we could take advantage of the administrative machinery we have today. It is a problem handled already in the Internal Revenue Code, making sure that everybody files exactly once.

It seems that we have the administrative machinery to do that, and if we do that, it would be very simple. Just pay this out as a credit against income tax, just as we do with the earned income credit today, we would give money to people who did not have to pay income tax, to make it a genuine credit.

From the distributional point of view, one of the questions that everybody worries about in these programs for decreasing prices, what does it do to the poor? That is a very difficult question to answer.

My rough approximation is that the poorest 20 percent of the population buys 7 percent of energy, therefore, it would be paying about 7 percent of this increase; 7 percent of the $16 billion increased energy bill is $1.1 billion.

The poor would pay for only 7 percent of the energy but receive 20 percent of the credits. 20 percent of the total revenue would be $3.9 billion, more than three times higher.

Senator HASKELL. Would you mind going over that arithmetic?

Mr. HALL. Let me start with a number which is unfortunately not very well pinned down. Roughly 7 percent of total energy is consumed by the lowest 20 percent of families in the Nation. Now, 27 percent of the $16 billion increase in the energy bill would be $1.1 billion. That is the cost to the poor of the proposed wellhead tax.

Senator HASKELL. They consume 7 percent.

Mr. HALL. Now we the poor receive 20 percent of the total credit. The revenue in my projection is $19.6 billion; 20 percent of that is $3.9 billion. One concludes that the poor come out ahead. I think this conclusion just could not be overturned by any of the estimates that I have used, even though some of those estimates are a little uncertain. It is such a large margin.

Senator HASKELL. As an observation, one of your colleagues, Lester Thurow, he was testifying before the Joint Economic Committee. His estimate was that the program would cut the standard of living of the poorest 10 percent by 8.1 percent, the richest only by 0.8 percent. I realize I may be talking about apples and oranges.

Compared to the way you approached it, when you put it in your perspective, the poor come out ahead. When Mr. Thurow puts it in his perspective, they come out way behind.

I call that to your attention.

Mr. HALL. Yes. I prepared a critique, if you will, of Professor Thurow's work.

Senator HASKELL. Everybody at MIT does not always agree.

Mr. HALL. That is one thing about a university. Universities do not have positions. I would be happy to go over that now. Is this a good time?

Senator HASKELL. Maybe you want to finish, and perhaps Senator Dole has some questions.

Mr. HALL. I definitely want to come back to that. I think this disagreement can be resolved.

Finally, in conclusion, I think that the proposed tax on crude oil is an economically sound program. I feel particularly strongly that it is an opportunity to get rid of a very bad entitlement system.

Whatever becomes of the gasoline tax, the gas guzzler tax, the tax on industrial uses of energy, mandatory conversion of coal, or the other dubious parts of the administration's energy program, the tax on crude oil should be adopted to replace the existing control and entitlement system. The revenue generated by the tax is moderate and the problem of returning it to the economy is easily manageable. The Nation's poor will benefit, not suffer, from the tax and credit. The tax will raise energy prices, but only by about 4 cents per gallon of oil products. The impact on the overall rate of inflation will be negligible.

Senator HASKELL. Senator Dole, do you have some questions?

Senator DOLE. I have no questions. I think it would be helpful if you would explain the question you raised, the difference in reference to the impact on the poor.

Senator HASKELL. I really think that would be quite important. As you know, Mr. Thurow set up several suggestions on the alleviation of the problem. I think your explanation is there is no problem. Let us hear that first.

Mr. HALL. I have studied Professor Thurow's remarks. Unfortunately, I have not had a chance to discuss it with him, so my discussion is, perhaps, a little tentative.

Professor Thurow finds, first of all, that the real income of the bottom 10 percent of the distribution would decline 18 percent. The real income of the top 10 would decline 3 percent. Both those, even the 3 percent figure at the top is well above mine.

Let us understand, he was addressing the whole administration proposal. He used Data Resources assumptions that did not involve the complete adoption of all of the gasoline provisions, but did include all the industrial user taxes and attempted to say something about increases in the price of natural gas as well as the wellhead tax.

The first thing to understand is that the wellhead tax is less than half of the complete program proposed by the President.

The second thing to understand about Professor Thurow's remarks is that he was discussing, not the effect on the price of energy costs, of the program, but the increase in the dollar price of energy from all sources, whether general inflation, increase in the price of oil, or the President's program.

It turns out that his numbers are dominated by just plain ordinary inflation. It is a fact of life that prices are going to rise at 6 percent a year through 1980, very unlikely that we will be able to do very much about that, so a very important fraction of what he is discussing is ordinary inflation.

One important thing about ordinary inflation, is that the poor get increases in income just as large in percentage terms as anybody else. There is no tendency for inflation to make the distribution of income in this country worse. In fact, one could make the case today that inflation probably leaves the poor slightly better off because many redistributional programs are indexed to the price level. We need not fear the general process of inflation with respect to the poor.

So Professor Thurow's analysis is based on the assumption that the incomes of the poor will not catch up with the regular inflationary process over this 3-year period, in spite of the fact that the poor have held up just as well as anybody else in the general process of inflation, which has been very severe over the past few years.

The major thing is that the question answered by his analysis is a very strange one: dividing current income by an increase by prices that will take place over a period while incomes will increase, no credit whatsoever to an increase in that income.

There is a serious overstatement to his work in the distributional effects.

Senator HASKELL. What do you base your assumption on, that income increases?

Mr. HALL. In the most adverse circumstances, over the past few years from inflation, the poor have not suffered distributionally or suffered from similar forms of inflation. After the world oil price increase, everybody has come out proportionately. It has not seriously affected the distribution of income.

Because of the attempt here to say something about the distribution of income, I rely on the fact that the distribution of income in this country has been extremely stable with respect to many kinds of changes, particularly with respect to the plain, ordinary inflation, and I am confident—I know, for example, that since we have linked food stamps and social security—the poor come out slightly ahead with inflation today.

Senator HASKELL. How about the person with the income of $8,000 4 years ago. Is that person going to come out roughly the same as the person with $100,000?

Mr. HALL. Yes; in percentage terms.

Let me point out. The recipient of social security comes out slightly ahead as a result of the inflationary process.

It is important to keep in mind the realities of the ways peoples' incomes are determined, which today help a large fraction of the population, especially the low end of the distribution, where we have been extremely successful in helping people out with Federal programs.

Those Federal programs are indexed.

We have linked benefits to the rate of inflation.

Getting back to where this came up, we need not fear the general process of inflation over the next 3 years because we have been so successful in designing programs that are robust with respect to inflation to make sure that the poor are helped to preserve the real incomes in the face of inflation.

As I say, the realities of the economy and our success in dealing with the problem of poverty, which I think has been very substantial, needs to be kept in mind in evaluating the effect of the general process of inflation.

Nonetheless, of course, there is something left over. The price of energy is going to rise more than the overall rate of inflation. There is something left over.

I have not attempted to break this all down, but my impression is that we can get a very small figure, just for the wellhead tax, if you accepted Professor Thurow's data on the distribution of income and simply, instead of putting in the data resources forecast for the overall change in the price of energy, replace that by my kind of estimate of just the effect of the program, then it turns out that the distributional effect, in that sense, would turn out to be very small.

Now, let me mention another problem. Suppose you did a comparable analysis of other forms of consumption. He has a figure which says that the poor spend about 30 percent of their income on energy. You can make that number larger by adding some indirect effect of energy.

Suppose you did a similar analysis. Suppose we are talking about a program that you raise the price of food. You would find the poor spend 40 to 45 percent of their income on food. Suppose we did it on housing, 50 to 60 percent on housing. Add those numbers together. The poor spend about twice their income on everything.

What is going on in the economy if the poor can spend double their income?

This is a question that has been analyzed by economists for a long time. It turns out if you classify families in the way that Professor Thurow does, you have a very persistent bias that makes it look as though the distribution of income is less equitable than it really is.

The difficulty is, if you look at the detailed data on those families that have extremely low income, many of those people in peculiar circumstances, many businessmen, for tax reasons or other reasons has a lower income in a particular year.

For example, if the businessman, for tax reasons, takes a large loss, he would have a negative income, but not be poor. They are just there for a couple of years.

It is the well-known property of the data of the distribution of income that the data of the kind Professor Thurow uses makes you think

that a larger fraction of the people in the economy are poor than really are. A lot of those people are at a level of consumption double their income, because they are not going to be poor next year or the year after, only poor that particular year.

Another way of looking at it is that I believe the bottom decile income cut-off is something like $2,000. That is far, far less than any family in this economy is entitled to under AFDC or general relief; $2,000 is far below the floor of income that we have established with programs. How can a large number of people have incomes below $2,000?

It is very simple. A lot of those people are not eligible for redistributional programs because they are not actually poor.

Senator HASKELL. I think it is quite clear that your views and Professor Thurow's views are quite opposite, and I think probably we should have Professor Thurow here. I respect your views very much indeed, but I have a different question.

I would really like to understand this. In your view, the $16 billion taken up in the form of excise taxes on the wellhead price, and your view is basically that this, as I understand it, will not be $16 billion more to the ultimate purchaser of the product because of the entitlement program.

Can you explain that to me?

Mr. HALL. Let me begin by the numbers. My estimate of the revenue from the program was $19.6 billion. My estimate of the impact on the energy bill on final consumers of energy was $16 billion.

It seems quite surprising that the tax can generate more revenue than it costs the American people.

Let me say, first of all, the difference between them has to do with profits in the oil industry. To the extent that we take account of those profits, we have to add them in. I do not include it with $16 billion, the reduced profits in the oil industry, which, of course, would make up the difference.

The point about entitlements is that entitlements are available only for imported crude oil with few exceptions having to do with a residual oil. People who import heating oil, for example we, in New England, are particularly sensitive to this. We have to pay more for heating oil because heating oil comes in as a refined product but receives no entitlements. The result is that that is essentially like a tariff on refined products.

Also, there is a discriminatory tariff with respect to refined products.

Under the present system, it is profitable for importers to import oil in the form of crude oil and for as much as possible of the U.S. demand of products to be satisfied with domestic refining. You can see this very strongly in the operating rates of domestic as opposed to foreign refiners.

The result is that there are bargains available in refined products elsewhere in the world, especially in the Caribbean, that are shut off to the American economy, shut off because we have financial discrimination.

Senator HASKELL. How much, in dollar amounts?

Mr. HALL. The estimates of that vary. I think the easiest way to summarize it is what would happen today if we simply eliminated the entitlement and control systems.

The estimates vary. It takes one forty-second of a barrel of crude oil to make a gallon of gasoline, and decontrol today would raise the U.S. price of crude oil by $2.50. Divide that by 42 and you get 6 cents.

One estimate of the effect of decontrol today would be that gas would cost 6 cents more. But that overlooks the fact that there is gasoline available in the world today that nobody is importing. The United States as a first approximation does not import gasoline.

Senator HASKELL. How much could we save if we could import that gasoline?

Mr. HALL. Estimates vary. Some would say 6 cents, I would say 2 cents.

Senator HASKELL. If you multiply that by the number of units, what would that come out to? I am trying to offset that against the $16 billion.

Mr. HALL. Let me see. It must be about $6 billion.

Senator HASKELL. Thank you.

Senator Dole, do you have any questions?

Senator DOLE. No.

Senator HASKELL. I gather, then, Professor Hall, that you probably would not agree with Arthur Okun, who testified on the inflationary impact. His proposal was to have the Federal Government transfer funds to State and local governments if they, in turn, would reduce sales taxes. I gather that you do not consider that necessary since you do not believe that this program would be inflationary. Would that be correct?

Mr. HALL. I do not want to say it is not inflationary at all. One-sixth of 1 percentage point is not zero.

Senator HASKELL. Let me ask you the question in another way. Would you agree with his suggestion to have the Federal Government transfer funds to State and local governments if they, in turn, would lower sales taxes to offset the inflationary impact? Do you think that is a good idea or a bad one?

Mr. HALL. I prepared a list of five alternatives. Would you be interested in my discussing them?

Senator HASKELL. You have five alternatives to Mr. Oaken's suggestion?

Mr. HALL. As I see it, the five major alternatives are: the flat credit proposed by the administration; the vanishing credit proposed by Professor Thurow; the extension of food stamps and the life line system; finally, Arthur Okun's proposal to reduce the State sales taxes.

Senator HASKELL. Would you endorse any of those?

Mr. HALL. I would endorse any of them as an alternative to doing nothing. I would not be in a position of saying that we should not worry at all of returning funds to the economy. If we have $20 billion in taxes, then we have a $20 billion program for reducing other taxes. I certainly agree with the prevailing view. We do not want to put $20 billion in the Federal budget. If we have it, we want to have some other tax reductions.

Senator HASKELL. All right, sir.

Senator Dole?

Senator DOLE. You addressed how to redistribute the income. You have not addressed how we should solve the energy problem. For some of us, we should not use the energy program to revise the welfare system.

Mr. HALL. I certainly agree with that. We want the simplest, most direct, equitable way to return the money to the economy, giving everybody—every adult in the United States—$120 a year is the most equitable way. That happens to be what the administration has proposed.

Senator HASKELL. Thank you, sir, very much indeed. I appreciate your appearance.

[The prepared statement of Mr. Hall follows:]

STATEMENT OF ROBERT E. HALL, PROFESSOR OF ECONOMICS, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Of the many components of the Administration's proposed energy program, the tax on crude oil is by far the most important and best conceived. Even if every other part of the program succumbs to criticism from economists or to adverse political pressure, the nation will have made a large step toward the solution of the energy problem if the crude oil tax is enacted and the existing system of price controls, allocation, and entitlements is scrapped. In this statement, I will present an economic analysis of the effects of the proposed tax, including an estimate of the revenue it will generate and its effect on the price of petroleum products and on the general price level. I will also discuss methods for returning the revenue to the people of the United States in an equitable and efficient way. Briefly, I find that the proposed tax on crude oil will raise nearly $20 billion in revenue in 1980. It will lift the price of crude oil to refiners to the world level, about $2.80 above where it would be if the current system were continued. The resulting increase in the price of oil products will be about 4 cents per gallon. Overall, the nation's energy bill will rise by about $16 billion in 1980 as a result of the tax. Further, there will be small increases of 0.2 to 0.3 percentage points in the rate of inflation in 1978, 1979, and 1980. Finally, the preferred method for returning the revenue to the economy is in the form of a flat energy credit of about $120 per person against personal income taxes.

THE PROPOSED TAX ON CRUDE OIL

When it goes into full effect in 1980, the proposed tax will bring the cost of crude oil to refiners in the United States up to the world level. This is an essential step in providing energy users with the appropriate economic incentive to limit energy consumption. It will be achieved by dividing U.S. crude oil production into three categories or tiers: tier 1 will consist of "old" oil produced at pre-1975 levels, tier 2 of "new" oil produced from existing fields beyond the tier 1 level, and tier 3 of "new new" oil that is discovered in 1977 or later. Tier 1 will be taxed heavily to limit windfall profits, while tier 3 will face little or no tax in order to provide a strong incentive for new discoveries. Tier 2 will be taxed moderately to provide a reasonable incentive for increased output in existing fields.

The proposed system recognizes that neither the world oil price nor the overall price level can be predicted accurately, so it links the tax rates to these crucial variables. The prices received by U.S. crude oil producers are to grow at the general rate of inflation while the price of crude to U.S. refiners is to equal the world oil price, and the tax rates are to make up the difference. My analysis of the program rests on a prediction that the general rate of inflation in the United States between 1977 and 1980 will be 6 percent per year and the rate of increase of the world oil price will be 8 percent per year. Then in 1980 the following conditions will prevail:

[Cost per barrel]

	Price received by crude producers	Tax	Price paid by U.S. refiners
Tier 1	$6.60	$11.40	$18
Tier 2	13.90	4.10	18
Tier 3	17.00	1.00	18
Imports	18.00	0	18

The revenue generated by these taxes depends on the levels of production in the three tiers and is especially sensitive to tier 1 where the tax is high. A reasonable forecast is that total US crude production in 1980 will be slightly above current levels and will be distributed as follows among the tiers:

	Billion barrels per year
Tier 1	1.1
Tier 2	1.5
Tier 3	0.7

Then the revenue of the tax system will be $19.6 billion in 1980. This estimate is sensitive to the world price of oil—each dollar per barrel change in the world price changes the revenue by $3.3 billion. At a world oil price of $17 per barrel, revenue would be only $16.3 billion.

EFFECTS ON THE PRICES OF PETROLEUM PRODUCTS

The existing controls and entitlement system for equalizing the cost of refiners of crude oil from all sources has the effect of making crude oil cheaper in the US than in world markets. The proposed tax will raise the US price of crude to world levels; if this occurred today, the price of crude to refiners would rise by about $2.50 per barrel. The prices charged by US refiners for products will rise on account of this cost increase. However, that rise would be limited by another, little-noticed feature of the Administration's proposal: Under the current system, entitlements are received only for imported crude oil, and not generally for imported products. The result has been to insulate US markets from the competitive pressure of low prices currently prevailing in world markets for refined products. To put it another way, immediate decontrol of the US crude price would cause it to rise by $2.50 per barrel, but the prices of products would rise by less per barrel. To some extent, the US would switch from importing crude oil to importing refined products and thereby take advantage of the slack conditions in world product markets. The profits of U.S. refiners would fall, of course.

The proposed system does not go into full effect until 1980, so the benefits of the elimination of the distortion caused by entitlements will not be achieved fully until that year. The likely evolution of the cost of crude oil to refiners and the US price of the major petroleum product, gasoline, is:

	Crude cost (per barrel)	Retail price of gasoline (per gallon)
1977	$11.70	$0.63
1978	13.50	.68
1979	15.00	.73
1980	18.00	.80

An important part of the 17-cent-per-gallon projected increase in the price of gasoline is due to the general process of inflation and not to the proposed tax program. In order to separate the effect of the tax, it is necessary to guess what will happen if the Administration's tax proposal is rejected. The most likely alternative is the continuation of controls and entitlements indefinitely. It is also likely that the definitions of the tiers and the selling prices of crude oil would be the same as those proposed by the Administration. Then the alternative projections are:

	Crude cost (per barrel)	Retail price of gasoline (per gallon)
1977	$11.70	$0.63
1978	12.70	.67
1979	13.70	.71
1980	15.20	.76

The effect of the program, in the sense of the increase in the retail price of gasoline relative to the continuation of entitlements, is 1 cent per gallon

in 1978, 2 cents in 1979, and 4 cents in 1980. The effects on other refined products would be similar. The proposed tax on crude oil will not have a large impact on retail product prices. Even if the price of gasoline rose by the full amount of the increase in the cost of crude oil brought about by the tax, $2.80 per barrel in 1980, the increase in the gasoline price would be less than 7 cents per gallon. Most of the large projected increase in the price of gasoline will occur no matter what policy is adopted.

IMPLICATIONS FOR TOTAL ENERGY EXPENDITURES AND FOR THE GENERAL PRICE LEVEL

Were it not for regulation, the prices of other forms of energy would respond quite strongly to changes in the prices of oil products. The projected increase of 4 cents per gallon is about 30 cents per million Btus, and should have a comparable effect on the price of Btus obtained from other sources. But regulation of the price and availability of natural gas and on the right to burn coal weakens this linkage. The direct effect of the increase of 4 cents per gallon on total U.S. expenditure for petroleum products will be about $12 billion in 1980 and the induced effect on expenditures for other sources of energy will be around $4 billion. The total is $16 billion, which is less than the likely proceeds of the tax.

The projected effect on the overall price level from the increased price of energy is quite small:

	Effect on the price level (percent)	Effect on the rate of inflation (percentage points)
1978	0.19	0.19
1979	.35	.16
1980	.63	.28

Though inflation is sure to be a major concern throughout this period, the Administration's proposed tax on crude oil will not be an important factor in that inflation.

RETURNING THE REVENUE TO THE ECONOMY

The expected revenue from the tax on crude oil—just under $20 billion—is a small fraction of total anticipated federal revenue of about $550 billion in 1980. Though it is tempting to suggest a set of national problems that could be solved with this extra revenue in the guise of proposing a method for "recycling" the revenue, I think that would be a mistake. The revenue ought to be returned to the economy in a simple, equitable way that involves no new programs and makes no claims to solve unrelated problems in the economy. By far the simplest mechanism is the one proposed by the Administration: an equal per capita energy credit against federal income taxes. If the 1980 revenue were divided among all Americans aged 16 and over, it would come to about $120 per person. The great majority of Americans would receive the credit as a reduction in income taxes or as an increase in the earned income credit. The only problem is in paying the credit to individuals who have no earned income but are not claimed as dependents by other taxpayers. The Administration has proposed a rather complicated system in which the states would have ultimate responsibility for making the payments. A much simpler alternative is to permit those individuals to file for a refund of the energy credit, just as those with low earned incomes are permitted already to receive a refund of the earned income credit.

Poor families would come out far ahead under this system. The poorest 20 percent of the nation would pay about 7 percent of the increase in energy prices, or $1.1 billion per year. Their credits would be about $3.9 billion, over three times higher. The combined effect of the increase in energy prices and the energy credit is highly favorable for equalizing incomes.

CONCLUSIONS

The proposed tax on crude oil is an economically sound program. Whatever becomes of the gasoline tax, the "gas guzzler" tax, the tax on industrial use of energy, mandatory conversion to coal, and the other dubious or unpopular parts of the Administration's energy program, the tax on crude oil should be adopted to replace the existing control and entitlement system. The revenue generated

by the tax is moderate and the problem of returning it to the economy is easily manageable. The nation's poor will benefit, not suffer, from the tax and credit. The tax will raise energy prices, but only by about 4 cents per gallon of oil products. The impact on the overall rate of inflation will be negligible.

Senator HASKELL. Next, we have Profs. Wallace Oates and William Baumol of Princeton University.

STATEMENT OF WALLACE OATES, PRINCETON UNIVERSITY

Mr. OATES. Mr. Baumol is not here, but I am submitting his statement and I am speaking for the two of us. Like Professor Hall, I will summarize the written document which I can make available.

What I would like to do is to summarize the four points that we feel most strongly about; unlike Professor Hall, I am not going to point to specific magnitudes. Our considerations revolve more around the general strategy involved in a program of energy conservation.

The four points are essentially these, that first, we think it is essential that the system of price incentives be mobilized on behalf of energy conservation; whether this involves taxes or not is a separate issue, but over the longer run, we really see no viable alternative, no alternative mechanism really that would prove to be an effective and efficient means to restrain energy consumption.

Point No. 2, we were asked to address the issue of whether or not an energy conservation program is likely to damage the economy in some sense. The answer to that has to be yes.

Any program which is going to reduce the supply of energy available to the economy is bound, to some extent, to be a drag on the process of economic growth. However, we feel very strongly that, through the use of some kind of price and tax incentives that the adverse effect on the economy can be minimized. This is the essential point.

Given a program of energy conservation, what general strategy promises to minimize the adverse effect on the economy?

Point No. 3, and this is an issue on which there will be some diversions of opinion among economists, given an acceptance of a pricing incentive strategy, does one not want to go the route of simply allowing the free market price to rise until it clears the market, or alternatively, does one want to go the tax route as is being proposed by the administration?

In general, I think economists would be inclined towards the free price solution. I think in this case, however, there are some very strong, mitigating circumstances simply coming from the fact that we are dealing with an exhaustible resource. There may be something to be said for using taxes in order to conserve our own energy resources for a time in the future, or they may even be in more scarce supply than they are at present.

Finally, point No. 4, having to do with the recycling of our revenues, I would like to strongly endorse the position taken by Professor Hall. It seems to me that the overriding concern here has to be one of equity, one of in some sense, returning these revenues in a way that it does not place undue burden on lower income groups, and it seems to me at least quite clear that Professor Hall is quite right on this, that the administration's proposal for a simple per capita rebate has the virtue not only of simplicity but is for the poor.

Senator DOLE. Is it not inequity to return more than we pay?

Mr. OATES. The equity issue, as I view it in this context, is in terms of vertical distribution of income; what we want the program to do is essentially provide an incentive to conserve on energy. That is going to generate tax revenues under the administration's proposal. It is really a separate issue as to how these revenues are then funneled back into the economy.

My contention, like that of Professor Hall, is essentially that the issue is one of equity and one should not try to sidetrack this program by trying to accomplish other objectives with the rebate.

Senator DOLE. How do you have an incentive to conserve if there is all this talk about sacrifices and suddenly, they become subsidies: you are not going to be hurt, you are going to gain in the energy program. Where are the sacrifices? Where is the conservation if you do not have to pay anything? You do not have to own a car to collect a rebate. Everybody just lines up for the rebate.

Where is the savings?

Mr. OATES. I think this is an extremely important point and comes really to the heart of the matter, and the issue is that the tax resulting in the increased price of energy provides a direct incentive to cut back on energy consumption so that part of it is the incentive, a person does not get a nickel more back—in other words, a person always gets more back by cutting back on the energy consumption because the rebate will be a per capita rebate. This is the important thing.

The rebate will have no bearing, as far as the individual was concerned, on his energy consumption. As Professor Hall's estimate suggests, each individual in the United States would receive back $120. He gets that $120 regardless of how much energy he consumes and by reducing his energy consumption he gets even more back.

The point is, on the one hand, the incentive to reduce energy consumption is built in in terms of the tax. The rebate is completely neutral. So in some sense, it does not offset the incentive that is inherent in the tax itself.

I think it is crucial that that point be understood.

Those are really essentially the four points. Let me elaborate briefly on them.

Our statement is not a long, detailed one, but I think going back to point one, this emphasis on price incentives, it is important to ask ourselves what alternatives we have available to us for a program of energy conservation. As we see it, there are really essentially only two. One is to go the route of some sort of explicit rationing program as we have done in wartime conditions, in which perhaps coupons would be allotted to individuals and businesses.

On the surface, this has a certain appeal and an appearance of fairness, but it does generate serious problems.

While it may work for a short period of time, particularly when one has the patriotic fervor associated with war to back it up, it may be reasonably satisfactory, but we are talking about a longer period of time, moreover, a period of peacetime and the rationing system, I think, is likely to be highly unsatisfactory over such a period. Black markets are inevitable. Substantial damage to the economy, I think, is a consequence.

It is very difficult, over a time, to match allotments of coupons to the needs of a dynamic, changing economy. Such allotments are practically guaranteed to get badly out of balance over a longer period of time.

Increases of prices and taxes are, in many ways, an unsavory and admittedly unpopular avenue of approach, but I think they are clearly preferable to rationing and really the only viable alternative as I see it that we have.

Senator DOLE. Neither witness has talked about new sources of energy. That seems to be the other half of the equation, rather than all the emphasis on how we redistribute the $20 billion or $50 billion—or whatever the amount is—I have four figures in four statements.

Do you address that at all?

Mr. OATES. We address that in one brief paragraph. Of course, it is absolutely critical—indeed, over the longer run the solution to the energy problem must be in terms of new sources of energy. This means an integral part of an energy program must place a very heavy emphasis on research and development of new sources of energy. That is clearly true.

In my statement here, what we are really addressing is a middle run period over the next few decades. I think it is difficult to envision breakthroughs that will become operational to an extent sufficient to alleviate our energy shortage problems. But you are certainly right; that has to be the longer run solution. This implies a very heavy commitment to energy research.

Senator DOLE. It seems to me, if we are going to pass anything in the Congress there has to be a balance, otherwise, it is going to fall. If you are going to attract votes in producing areas there has to be some incentive for new sources, new production alternative sources. Otherwise, it is not going to get through the Congress.

We have to have a balanced program. That is one of the hangups that we have.

Mr. OATES. I absolutely agree. A longrun program of energy research must be an integral part of any program. In addressing the administration's program here, I am really addressing it in terms of an intermediate run.

Senator DOLE. The hearing is geared to how we recycle the revenue, but I just suggest—I know you have it in mind and so does Dr. Hall, but it seems to me there are at least two prongs to the problem.

Mr. OATES. That deserves a very strong emphasis.

I think in some ways, as I say, relying on some kind of price or tax program does strike us as really the only viable approach over this interim period. It is likely to be a long interim period and I think in some ways what bothers us the most about this is that there is a kind of third alternative, which is to do nothing, and we have seen that this is really a very irresponsible course. We saw it earlier in this decade when the oil embargo hit.

What is most worrisome, I think that the administration would lean toward being too timid and hoping that the problem would go away. It obviously will not. It is one we have to face. The alternative does require some hard choices and damage to the economy. We simply have to face up to that.

Let me comment briefly now on this issue of prices versus taxes, which is a difficult issue. A number of economists will object to the administration's proposal in that it relies on taxes instead of simply

letting the free market price drift up to a level at which it clears the market.

The case, of course, against that, the increasing prices will represent increasing profits, windfall gains in certain instances for producers where, on the other hand, if one goes the tax route, these increased revenues go into the public treasury rather than to the profits of oil producers.

So one can make a case on a fairness or equity criterion for the administration's approach for the reliance on taxes rather than a market clearing approach.

There is another side to the story, and that is, it is the higher prices and higher profits that provide an additional incentive for exploration and domestic production of oil. If the price to producers does not go up, we will unavoidably get less domestic oil production.

In general, this can be a very persuasive argument. I think to some extent, as I indicated earlier, the force of this argument is blunted by the fact that we are dealing with an exhaustible resource and one can make something of a case that increased domestic production comes at the expense of future consumption.

One may make, I think, something of a case for not encouraging domestic production at this point in the light of energy resources could even be more scarce at a later date.

Failure to stimulate domestic production now may not be a bad thing.

Finally, on the issue of the recycling of tax receipts, I think I have been through this. I simply want to support Professor Hall's position.

It seems to me that we should be careful not to pervert the proposal by trying to do too many things with the tax rebate revenues. One should not try to use this as a mechanism to fight inflation, but would unavoidably lead to pressures to raise this tax when price levels are increasing rapidly and lower it when unemployment goes down.

Programs, in my experience, that try to accomplish too many things end up typically not accomplishing very many of them very well.

I think, on this issue, that the case for a simple per capita rebate proposed by the administration is a very compelling one, largely for the reasons that Professor Hall has suggested. As he indicated, the poor consume a smaller fraction of the energy consumed by the economy than higher income groups do, since they will be getting a rebate equal to the average, they should, on net, be gainers from this.

Senator HASKELL. Thank you very much, Professor Oates. That is a very interesting presentation.

Senator Dole?

Senator DOLE. I have no questions. Thank you very much.

Senator HASKELL. Thank you very much indeed.

[The prepared statement of Messrs. Baumol and Oates follows:]

STATEMENT OF WILLIAM J. BAUMOL AND WALLACE E. OATES

1. SUMMARY OF CONCLUSIONS

The primary purpose of this testimony is to endorse the general approach proposed by the Administration for the conservation of energy resources with its basic reliance on the price mechanism for the reduction of energy consumption. We will make four basic points. First, the use of prices or taxes to discourage

consumption of energy is the only approach that promises to be effective for more than a very brief period of time. Second, all other things being equal, the program will indeed tend to inhibit the growth of the economy, but that is only because such a slowdown is the inevitable concomitant of any reduction in the supply of energy. A program based on the price mechanism can be expected to restrain growth less than any other measure that yielded a comparable decrease in energy consumption. Third, we will argue that the legitimate purpose of the recycling of energy tax revenues (tax rebates) is to prevent inequities and undue burdens upon lower-income groups, not to stimulate the economy. Finally, we will maintain that the failure of the program to offer strong incentives for the expansion of petroleum production from domestic sources may, in fact, constitute a strength rather than a weakness of the proposal, since it will preserve the nation's oil reserves for the future when we are likely to need them even more critically than we do today.

2. THE PRICE SYSTEM AS THE ONLY EFFECTIVE MECHANISM FOR REDUCING ENERGY CONSUMPTION OVER LONG PERIODS OF TIME

In the very long run, the solution to our nation's energy problem is, of course, to be found in the development of new energy sources or, rather, new techniques for the extraction of energy from sources that are now virtually unused. If in the next quarter century we fail to perfect the techniques of nuclear fission, utilization of solar energy, or of some substitute for them, this will constitute a major tragedy for the United States and for the rest of the world. Investment in research on these matters must, therefore, be a crucial component of any effective energy program.

But it will almost certainly be several decades defore any of these sources can fill a significant portion of our energy requirements. In the meantime, we have have little choice: we must not only eliminate wasteful uses of energy, but we will have to go beyond that and cut back even its useful employments. We will have to cut back until it hurts. This means that we must reduce the demand for energy, and that in turn implies that we must employ one of two instruments for the purpose: we will either have to ration the use of energy, or we will have to let prices or taxes serve as financial disincentives for its utilization. There is no third choice other than chaos, for no one has as yet invented any other effective means for the containment of demand.

One approach is to restrict demand by means that have been known to work in wartime, the establishment of allocation boards with the issue of ration coupons based on some criteria judged to be equitable and economically feasible. The alternative is to make energy waste and energy use sufficiently more expensive in comparison with other goods and services that both individual and industrial consumers will find it desirable to restrict their use of energy to whatever extent is considered appropriate by public policy makers.

Now there is a great deal to be said for the rationing approach. It is likely to be the less unpopular measure among many sectors of the electorate because, on the surface, it seems to have attributes of fairness. Above all, it avoids the irritation which is an inevitable consequence of a rise in some price or tax rate. But experience confirms that rationing inevitably brings with it extremely serious problems. Black markets siphon off increasing portions of the available supplies of the rationed commodities. Allocations unavoidably match relative needs of the different sectors of the economy only imperfectly, and these allocations inevitably lag behind the changing patterns of needs which characterize any dynamic economy. Even during wartime when patriotic fervor supports a rationing program, we know that it runs into problems. These problems will necessarily be multiplied when there is no visible enemy, and when the rationing program will have to remain in effect for a matter of decades. It is no exaggeration to say that, for so long a period and under such circumstances, the rationing approach must be rejected as unworkable, indeed, as unthinkable.

This leave us with the only other available option: the pricing approach. Taxes or prices will have to be raised to discourage consumption, no matter how distasteful this prospect may be. Failure to follow this avenue must be considered the ultimate in irresponsibility, for it will mean tacit acceptance of continued growth in energy use, an unabated rise in dependence on foreign sources of supply, and an increased magnitude of the impending crises which such improvidence must ultimately engender.

3. INHIBITION OF GROWTH BY AN ENERGY PROGRAM

None of our analysis is meant to imply that the task will be easy or pleasant. We must not succumb to the illusion that there is so much waste in current energy usage as to make possible a painless conservation program. Reduction in waste is essential, but by itself it will almost certainly be insufficient to meet reasonable goals for energy consumption.

That being so, it means that some of the reduction in energy consumption must be obtained from uses which cannot be considered purely wasteful. Both consumers and industry will have to be induced to give up, or at least to decrease, uses which we have grown to consider part of our normal way of life. Once we face up to this reality, it follows as a corollary that any such energy program will tend to inhibit economic growth. If we feed less energy into our economic mechanism, some loss in output must necessarily result.

The pertinent question is not whether a successful energy program will impede growth to some degree; rather, the relevant issue is which approach to energy conservation can be expected to minimize any such adverse effect upon the economy. Here again the tax-price mechanism is clearly superior to the available alternatives.

To substantiate this conclusion, we need only review those alternatives briefly. We have already discussed one possibility: a program of rationing. But we must recognize that there is a second choice which, unfortunately, is all too real a possibility. This second choice is the failure to adopt any program for the allocation of our increasingly scarce energy resources. This will occur if the adjustment of prices by the forces of supply and demand is prevented, if no taxes are used to fill in the gap, or no other allocation measures are undertaken.

The oil embargo of 1974 showed the consequences of such a policy. In a word, it can lead only to chaos. Queues at gas stations, production stoppages, favoritism, and influence peddling in supply allocation are the normal accompaniments of such a regime; its devastating effects upon the process of production and consumption are all too clear. It would seem pointless to offer so obvious an observation if it were not a very real possibility. Controls that prevent supply and demand from determining prices are popular politically, while new taxes or new programs of rationing are surely not. In these circumstances, an easy course for a timid and irresponsible government is to avoid these difficult choices and to let matters take their course in the hope that the spectre that remains to haunt the future will go away of its own accord. The fact is that there is no perfect program for restriction of demand and certainly none that can avoid unpopular sacrifices. But none of the available approaches will ultimately subject the economy to a blow as severe as that which will follow from inability to agree upon an effective program.

As an alternative, a program of rationing need not be nearly so devastating in its effects upon the economy. But it too will constitute an unnecessary handicap to growth. No central planner can know at all times what sector of the economy is most in need of energy today, and what sector will have the most pressing fuel requirements tomorrow as a result of the economy's growth patterns. As we have already noted, experience indicates that the longer the duration of a rationing program, the more imperfect is likely to be the correspondence between its allocations and the pattern of needs of the economy's industries.

Only when allocation is carried out by the price mechanism, through a rise in energy prices or taxes, can one be sure that supplies will flow to that sector of industry where they are needed most. The firm or industry which can make the most effective economic use of fuel will be in a position to bid for it accordingly. This is one of the bases of the noteworthy efficiency of the free-enterprise system, of its ability to outproduce any other form of economy known in human history. When resources are scarce, the price mechanism sends them where they are the most productive. No other allocation mechanism has been able to replicate this feat.

In sum, even with the best of programs, restrictions on the use of energy must, indeed, inhibit the growth of the economy. But only the tax-price approach can minimize the effect upon the prosperity of the nation. Any other measure, and certainly the failure to adopt any effective measure, must cause more serious damage to the economy.

4. ON THE DESIRABILITY OF INCENTIVES FOR DOMESTIC EXPLORATION AND EXTRACTION

In discussing the use of the price mechanism to encourage conservation, we have so far failed to distinguish clearly between two very different programs that employ this avenue. The one program frees prices to seek their own level, a level which can be expected to be rather high when the resource in question is scarce. The second of the price-mechanism approaches uses taxes rather than free-market prices to make fuels more expensive in order to discourage their use. The basic difference between the two approaches is that under the former much of the gains accrue to the fuel supplier, while under the latter, the financial gains go to the government treasury, at least in the first instance.

There are two rather natural views about this choice, which take diametrically opposite positions. The one view rejects the freeing of prices because the financial gains to suppliers under unrestricted pricing are viewed as an unjustifiable windfall to the large firms that supply fuels. On the other hand, the opposing group argues that such an increase in the profits of suppliers is an incentive necessary to induce them to increase their outputs. This view, indeed, has widely been offered as a criticism of the Administration's energy program. It is argued that, because the program does little to increase the prices received by producers, it offers little incentive for exploration for new sources of oil and natural gas.

There is surely some substance to such a position. Certainly it is desirable to offer incentives to industry to seek alternative sources of energy, and to invest in the research necessary to make them viable economically. If industry is not permitted to retain any profits which such innovations would otherwise offer, the nation will surely be the loser.

But it is not equally clear that increased exploration and, particularly, extraction of domestic supplies of conventional mineral sources of fuel is in the national interest. It would, of course, be desirable to obtain more domestic oil today as well as more domestic oil tomorrow. But if an increased supply of domestic petroleum products now must come at the expense of the supplies available in the future (as it almost surely must), then the balance is no longer so clear. We are now highly dependent on fuel from the Middle East. All the available evidence indicates that our dependence upon that source will be even greater a decade hence. Is there not much to be said for a program which does not stimulate an immediate increase in the use of our domestic reserves, but instead conserves more for the future?

There have even been proposals for the United States to increase its imports of petroleum from abroad and to build up a stockpile for the future. We are in no position to evaluate the desirability of such a course of action. But if it makes any sense, it is surely more sensible and more economical to preserve those inventories which we already have by letting them remain in the most convenient of storage places—their natural repositories. In sum, to whatever extent the Administration's energy program fails to offer incentives for petroleum exploration and extraction within the United States, one might consider this feature to be a virtue rather than a shortcoming of the program. This is one case in which unwillingness to provide a windfall to industry may also be consistent with the provision of the right financial incentives from the viewpoint of the nation's long-run interests.

5. RETURN OF THE TAX RECEIPTS THROUGH A SYSTEM OF REBATES

The one criticism of the price-tax approach to energy conservation that is probably felt most deeply is the view that it is likely to be inequitable, that its burden is likely to fall most heavily upon the poor. The factual evidence on this matter is far from clear, but it does provide some reason to believe that such fears are not groundless. Certainly, in its direct effects upon middle and upper-income groups, a tax upon gasoline is likely to be regressive, since the very rich spend a smaller proportion of their incomes directly on gasoline than do members of the middle-income groups. One must sympathize with the reservations of those people who recognize the urgency of energy conservation, but who do not want it to be at the expense of those who can least afford it.

To overcome this problem a two-pronged program has been proposed. The first part provides the incentives necessary for the conservation of energy by taxes on energy use. Under its provisions, the more energy that is used by an individual or a firm, the more taxes it will have to pay. Only by reducing consumption

can this tax be avoided. The second prong of the program is intended to assure equity, not to offer conservation incentives. Under this part of the program, Americans will receive an annual rebate of some or all of the taxes that had been collected under the first part of the program. The rebate received by any one individual will, under this arrangement, be totally unaffected by the amount of energy he happens to have used. In other words, the rebate is intended to be neutral in terms of its direct influence on energy consumption. It offers neither an incentive for conservation nor an incentive for waste. The rebate will not (and must not) in any way offset the conservation incentives provided by the tax program. The basic incentive must remain that a reduction in fuel usage by any one individual will cut his tax payments without affecting the amount of his rebate check.

There is every reason to feel that such a combination of taxes and rebates can be an effective inducement for conservation and, at the same time, not place a disproportionate burden upon the poor. Indeed, there is good reason to believe that the very poor will come out somewhat ahead financially, since their average consumption of energy, direct and indirect, is almost certainly well below the national average. Since they will therefore pay less than an average tax bill, but they will receive the average rebate payment, one would expect them to be net gainers.

It is important to emphasize that the primary purpose of such a rebate program is distributive equity, not the stimulation of the economy. It is true that a set of taxes upon energy use, taken by themselves, are likely to reduce the government's deficit and, thereby, to act as a force for economic contraction and deflation, while the rebate can be expected to offset this effect. But we believe it would be a mistake to transform the energy tax and rebate into instruments for the control of inflation. Such a decision can easily pervert the energy-conservation program by subjecting it to the fortuitous fiscal requirements of economic stability. In a period when inflation threatened, the result would be pressures to raise energy taxes to levels that were inappropriately high, and to hold back on rebates, no matter what the resulting inequities. The reverse would be likely in a period of growing unemployment. But the government has other instruments more appropriate for problems of unemployment or inflation. There is no good reason to risk emasculation of an energy-conservation program or to subject it to the risk of unjustifiable inequities by using the program's taxes and rebates as an (inappropriate) instrument of stabilization policy. Experience suggests that a single program which attempts to achieve many objectives is likely to attain none of them.

5. FINAL COMMENT

It has been said aptly that the search for the ideal solution can be the main impediment to the adoption of a good one. No one has yet proposed an energy program which can claim perfection. No doubt each of us, if assigned the task of designing an energy program, would have produced a proposal somewhat different from that of anyone else. It is essential to recognize that *any* such proposal is likely to fall short of an (unattainable) ideal. The real danger to the welfare of the United States is that a misguided search for perfection will lead everyone to battle for some special provisions, and that the net result will be the worst and most irresponsible of all possibilities, the failure to put any adequate measure into effect.

Policy makers in our country now have before them a proposal which cannot claim to be ideal. But it does employ as its basic instrument a set of taxes which we have shown to be the only means that can be expected to work over extended periods, which will cause minimal damage to economic growth, and which provide the means to counter any significant threat of inequity. It seems to us, in these circumstances, that the public interest requires us to unite and offer our support of the program that is now before us.

Senator HASKELL. Next, from the Wharton Econometric Forecasting Associates, Professor Klein and Messrs. Young and Schink.

I see that they are not here.

Then we will go to Dr. Rudolph Penner of the American Enterprise Institute.

STATEMENT OF DR. RUDOLPH PENNER, AMERICAN ENTERPRISE INSTITUTE FOR PUBLIC POLICY RESEARCH

Mr. PENNER. Thank you very much. I, too, will read only parts of my testimony and, with your permission, submit the rest of the record.

The administration's program is very difficult to analyze. It is horribly complex. It is horribly complex because they have not tried to have a comprehensive energy program in the sense that they were willing to let all prices of energy rise equally. Instead, they have devised a program that raises the price of energy in some uses but not in others, and also they proposed a program which, as the previous two witnesses said, contains a rather considerable distribution of income toward the poor.

I do not think there is any doubt about this. I must confess I have not seen Professor Thurow's testimony. I really do not understand how he could reach any other conclusion.

As Professor Hall says, certainly the very best part of the program is the effort to raise the price of crude oil up to the world scarcity price. That may be painful but is something that we have to do. The program does this by imposing wellhead taxes on top of the currently controlled crude oil prices.

Having enunciated a perfectly good principle, the program quickly backs away from it. Natural gas prices are still to be controlled at a price below the scarcity value and one thing that worries me in the program, which has not gotten much notice so far, is statements that perhaps eventually the price of domestic oil will not be allowed to go to the world price but rather its increase might be restrained to the domestic rate of inflation. That is a major uncertainty in the program, and in addition, you have all sorts of other important exceptions.

For example, heating oil, gets a rebate of the wellhead tax. Unfortunately, as a result of various exceptions, you have very different prices faced by the consumer for energy used in different ways, and I think that this can cause many inefficiencies.

Now let me talk about the domestic oil that has its price raised close to the world price by the wellhead tax. Were it not for a system of price controls, this price increase would have occurred long ago. The oil companies would have enjoyed a major profit gain and consumers would have paid higher prices.

The situation would have been analogous to, but much more extreme than the situation that faced us a year or two ago when world food prices went up. In that case, ordinary farmers and agricultural corporations enjoyed a fairly large windfall gain and the consumer faced higher food prices.

Our ordinary tax system tries to dampen the transfers of income that occur in such cases. The corporate tax, progressive income taxes on dividends, and ordinary income and capital gains taxes, all drain off some of the gain. In other words, even if we applied the free market solution to the oil-gas situation, the ordinary tax system would absorb some of the gain.

Therefore, tax revenues would go up, and then we would have some extra receipts that should be rebated

As Professor Hall pointed out, there is a line of argument that prices would not go up at all, and therefore, tax receipts would not go

up at all, but like him, I reject this argument. I think it is only realistic to think that prices would go up. There would be major increases in profits in the oil industry, and therefore the ordinary tax system would drain some of that off. But our society does not think that that would be an equitable solution and indeed, even in the food situation we did not like the free market solution very much. There, we intervened and restricted exports.

So there seems to be a general agreement about the fact that we do need some sort of complicated apparatus to prevent this free market gain to the oil companies and somehow return the windfall to the consumer.

I think, before looking at the administration's complicated apparatus that reduces windfalls, it is important to make two points. First, while we might think it inequitable to allow oil companies to get these windfall gains, there is clearly no system known to man that can neutralize all of the income transfers that can result whenever some particular price goes up in the economy.

There are as many different situations regarding energy use as there are families.

Therefore, any system that prevents this one perceived inequity of the oil company's gain is sure to generate other perceived, perhaps much smaller inequities, as it transfers income around the economy, simply because there are so many different families in very different circumstances in terms of their energy bill.

The second thing that I think is very important for everybody to understand in trying to prevent this inequity, we are imposing major costs on the society. It is the effort to prevent this inequity that requires the Administration's plan to have the wellhead tax to constantly differentiate these various kinds of oil, old oil, new oil, et cetera. And that system will cost hundreds of millions of dollars to administer directly.

I am thinking now of the FEA cost, IRS cost. Most important and something we should never forget is the compliance cost in the private sector. Those will just be enormous and I think more than these direct costs, we have to realize that there is a lot of waste in the use of resources that the system generates.

We may think casually that holding the price of old oil down does not do any harm. It does, because if the owner of old reserves thought he had some chance of a price increase he might conserve that oil if he thought the price was going to go up, then the rate of inflation plus the real interest rate. But if he has no hope of such a price increase, he is going to get the oil out of the ground as fast as possible and that may conflict with our conservation goals.

But really more important than that, you must have an enormous distortion of production from all of these more or less arbitrary rules that differentiate the different kinds of oil; for example, the new oil has to be from a well 2½ miles from old oil, or from a well 1,000 feet deeper than an old well, and so on.

All of these regulations must result in distortions and I do not think that we have a very good idea of how important those distortions are. Clearly all of this is caused solely by a desire to prevent windfall gains to oil companies. Although our society may be willing to pay these

costs temporarily, the thing that disturbs me most about the administration's program is that there is no end in sight to the massive regulatory apparatus that prevents this windfall.

You could reduce the windfall gains to oil companies, simply by delaying them. I wish the administration had built in a sort of a self-destruct mechanism for all of these controls, or at least phased them out over some definite time period.

Senator DOLE. What do you mean by delaying them?

Mr. PENNER. All I am saying is that, instead of letting the corporations' profits go up all at once, we could phase out controls over time and allow a gradual increase in profits.

I did not mean holding profits back and then giving them to oil companies at some later date. Rather, I just meant a gradual rise to what might be called a free market profit level.

Let me talk about the administration's proposed rebate in particular. Now, the numbers I am going to give you are quite different from Professor Hall's for a number of reasons. First of all, they refer to a different year. He was talking about 1980; I am talking about 1985.

In 1985, according to Secretary Blumenthal, the wellhead tax will raise $12 billion. This is lower than Professor Hall's $19 billion for 1980, partly because as time goes on, the revenues decline because the highly taxed old, old oil declines in relative importance.

In addition, the receipts do depend considerably on what you assume about the average rise in price level. As Professor Hall says, the estimates vary greatly on that, everywhere from zero to considerable amounts. The $12 billion estimate may be on the low side.

In any case, Secretary Blumenthal estimated $12 billion in crude oil tax receipts by 1985. Of this amount, users of home heating oil will receive about $800 million in rebates, refiners will pay $2 billion less in income taxes because they pay higher crude oil prices. That is what all the argument is about—how much higher will prices be? Blumenthal's estimate leaves about $9.4 billion for rebates, roughly $40 per person. That number is lower than Professor Hall's, not only because my receipts figure is lower, but because he is giving his rebate to people only above 16. I am giving it to everybody.

In addition, of course, neither of us talk about the gasoline tax, which is a very uncertain business. Theoretically, if it applies in 1985, it could more than triple this rebate.

The poor gain relatively from the tax plus rebate, because they get the same per capita rebate even though they typically consume less energy than the middle class or rich. For example, the little table on the top of page 7 gives you the general pattern of direct energy consumption. Of course, ideally, we should also consider indirect energy consumption through the purchase of goods and services which require energy in their production.

The only thing that I want to illustrate with the table is that energy expenditures as a proportion of income is fairly high at lower incomes. The absolute direct and indirect energy expenditure at the lower income level is, however, less than at the higher income levels.

As Professor Hall said, a lot of people at the bottom are down there temporarily and those numbers can be misleading, but the general pattern, I think, is a correct one.

So, what I am saying is, if you give everybody an equal per capita rebate, if you take families of equal size and let us say, hypothetically, that the $14,000 family gets direct and indirect payment of the crude oil tax exactly rebated, then the bottom family is sure to gain.

The program even goes further than that in redistributing income to the lower income groups. This is why I certainly cannot understand Professor Thoreau. As Professor Hall indicated, many of the people down there, who are not down there temporarily, are on some sort of indexed social program—social security, supplemental security, income food stamps, AFDC which is indexed in an indirect, implicit manner, so that the very poor, who are in these programs will get compensated twice.

The general price level goes up because energy prices go up. Their social security and so on will go up by about an equal amount. On top of that, they get the per capita rebate which, as has been noted, overcompensates them by itself for that increase in energy costs. So I see a rather significant redistribution to the poor in the President's program and, in fact, here is where I disagree with Professors Hall and Oates. I think that the redistribution is so large that I do not like the per capita rebate. I do not think it is wise to engage in what is a major income redistribution toward the poor in the guise of an energy program.

I think it is much better to debate questions of overall income distribution in the context of overall welfare and tax reform. I therefore believe that any system of rebates should make a more careful attempt to compensate various income groups for the average burden that the energy program imposes.

This implies a system of tax reductions and payments that is progressive in the sense that it gives a higher proportional tax cut at the low income levels, but gives higher absolute tax cuts as you go up the income scale, because as you go up, the higher income people do spend higher absolute amounts on energy.

How should this goal be accomplished? I have already made the point that there is no absolutely fair method of rebating these revenues. You just cannot absolutely hold harmless every family for their energy expenditures. So anyone advocating a specific kind of rebate does have to build in their own value judgments their own notions of what would be an equitable tax reform.

My own design would have the following features. I would assume that the indexed benefits of social security, et cetera, would take care of those people on those programs. I would not pay them twice, as President Carter does.

I would make explicit provision for per capita rebates in the AFDC program, which is not explicitly indexed, to reflect some estimate of the energy component of the typical welfare budget.

I would also make the earned income credit more generous for the working poor.

When we get to the positive tax system, which is what affects most of the people, I would like to use the energy program as an opportunity to make up for the fact that we have not indexed the positive system very well for inflation in the past. We have kept the tax burden relatively constant but we have given much higher cuts in the recent

past to the low income groups than we have to the middle class and above.

What I would like to see is some sort of proportional increase in all elements of the tax structure—basic exemptions, the per exemption credits, the standard deduction—and I would like to use this opportunity to widen the individual tax bracket.

Here I am making a value judgment, but I think it is important to realize that we have not changed the width of the tax bracket or the marginal rate structure for married couples since 1965. So you have a situation in which each of the bottom brackets is still $1,000, when the real value of $1,000 is about half of what it was when we last changed that structure.

So I would like to use this opportunity to widen those brackets a bit. Unfortunately, I did not have the research resources to make estimates of revenue losses or the exact widening you would need to compensate for energy cost increases for different income groups.

Senator HASKELL. Out of curiosity, how much widening would you have to do to make up for inflation since 1965?

Mr. PENNER. I have to be a bit careful in answering that, because we have since 1965 increased the basic exemptions, we have invented a new per exemption credit, and we have increased standard deductions much faster than the rate of inflation.

But if we abstract from all of that, the size of the tax bracket would have to be about doubled, because the price level has about doubled.

Senator HASKELL. Thank you.

Mr. PENNER. You may not want to widen brackets at the very top because you may feel that the very rich would be overcompensated for their increase in the energy bill, but again let me emphasize I really do not think that you should use this program to put another burden on the middle class and to provide another transfer to the poor without having looked at income distribution very carefully in the whole context of welfare reform.

The last part of my testimony deals with the industrial gas and oil user tax. I think that that is a horribly designed tax, the very worst tax in the President's proposal. In particular, the way it is rebated for investors in coal using equipment, it can amount to a subsidy of 70 to 75 percent of the cost of capital.

I would urge the subcommittee to look very carefully at that particular proposal.

Senator HASKELL. What is that?

Mr. PENNER. The part of the President's program that really disturbs me most is the proposed progressive tax on industrial users of natural gas and oil. I just think that it is very poorly designed.

Senator HASKELL. Let me ask you about that, because there is a bill in the Subcommittee on Energy that I am Chair. It occurs to me that the bill I had hearings on merely gave authority to direct a company to convert—or a better term is replace. The administration would, in effect, leverage replacement by taxation. We have a national policy that says get off oil nad gas and get on oil, and it would tax you because you happen to have a gas furnace facility but not tax me because I am lucky enough to have a coal-burning facility. It means that a national policy is going to be implemented at the expense of people

who are unfortunate enough to have certain types of facilities or live in certain types of places with gas burning utility.

My thought was, if we are going to make people do an early replacement in order to implement a national policy, we should design some kind of Federal aid system that would compensate them for the cost of early replacement. I do not mean the full capital cost, but perhaps the discounted value of the investment or something along those lines. Does this make any sense to you?

Mr. PENNER. I think that it makes a lot more sense than the rather extreme measures that the administration has taken.

I think, in particular, as you say, different people are in different positions——

Senator HASKELL. By happenstance.

Mr. PENNER. That is right.

To tell you the truth, I would be quite satisfied if we just let the price of oil and natural gas go up to its scarcity level. If we are not satisfied with that and we think the kind of conservation and production incentives that would occur at that level are not enough for national security reasons, that is to say, still leave us too vulnerable to international oil supply disruptions, I think that economists would be more likely to say, let us put a tariff on oil imports and impose a matching domestic excise tax; that is, raise the oil price still further, giving people the positive incentive to convert to other sources of energy.

I know that would not be very popular because it would be very painful. It would be more inflationary than other kinds of approaches. But when you let the price of oil go up to the world price and you say that is not enough, let us have some other subsidy to coal conversion, you are saying the world price is not provoking enough conservation. Let us subsidize conversion to go a little further in saving oil.

The main thing I dislike about the President's program—it sounds like I would prefer yours without knowing all of the details—is the sheer amount of the subsidy. There is an enormous conversion subsidy in the President's program, once you propose to rebate the use tax on oil and gas to those who invest in coal burning equipment. Moreover, the tax is progressive, so the guy with five identical plants pays more than the guy with four. That makes no sense to me whatsoever.

Senator HASKELL. Thank you very much, Dr. Penner. I think that I have asked all of the questions that I have.

I appreciate your testimony. It is interesting that you and Professors Hall and Oates are not too far apart.

Thank you very much.

[The prepared statement of Mr. Penner follows:]

STATEMENT OF RUDOLPH G. PENNER

First, I would like to thank the subcommittee for inviting me to testify. I plan to concentrate my testimony on the problem of rebating the taxes collected by any future energy program, but one cannot discuss any one aspect of an energy program without an overall analytic framework. I have to admit that I failed in my search for a logical analytic framework that could easily result in the administration's energy proposals. I began with the proposition that while the energy problem may be painful to solve, it is conceptuallly easy to understand. A large number of forecasts tell us that oil and natural gas is going to become scarcer in the future, and without some major technological change this implies that the relative cost of all energy will rise. Instead of letting domestic

energy costs rise to world prices in the recent past, we have used domestic price controls to keep them artificially low, and this implies that the future adjustment to higher energy costs will be larger and more painful than it would be otherwise. One must ask why this simple fact of life requires the Administration's extraordinarily complicated response. I think that the answer is that the Administration chose not to present us with a comprehensive energy program. A comprehensive program would let the cost of energy rise regardless of how it is used and then, attempt to mitigate the harmful impacts of this change in prices. Instead, the administration chose to raise some sorts of energy costs, but not others, or in other words, chose to conserve energy in some forms but to continue to waste it in others. The program gains still more complexity from the fact that it is not only redistribution of income by significantly increasing the purchasing power of the poor. In summary, it is the moral equivalent of a very limited war which primarily recruits the middle class and the rich to do the fighting.

I shall try to illustrate these points by focusing the analysis on only one component of the program—the wellhead crude oil tax and its various rebates—and I shall more briefly note the relationship between this and other components of the program.

The program starts in a promising manner by stating as a principle that the price of oil to the user should reflect its true scarcity value. This might be defined as the world price plus some "national security premium" to reflect the fact the conservation brought about by the world price may still leave us too dependent on foreign sources of energy. The Carter program raises the price of crude oil by imposing wellhead taxes on top of the currently controlled prices of "old-old" oil and what will become "new-old" oil. But having enunciated a perfectly good principle, the program quickly backs away from it. Natural gas prices are to be controlled at a price below their scarcity value for a wide variety of uses. The domestic crude oil price may be stopped short of the world price, if world prices rise faster than the rate of inflation—something that is sure to happen if oil does indeed become relatively scarcer. And in one of the most extreme departures from the principle, oil used for home heating will enjoy rebates of the wellhead tax. On the other side, oil and gas will be subjected to a penalty tax when used by some firms but not by others, and there is a threat of a future gasoline tax.

The implications of all of these different prices and taxes applied to exactly the same commodity in different uses are quite staggering. The artificially low price for home heating oil will encourage a waste of energy in this use. This may be offset to some extent by the tax subsidy to insulation, but that subsidy does little good to those who earlier decided that insulation was a good idea.

On the other hand, oil used to manufacture many industrial products will pay both the wellhead tax and a use tax. Production will only continue if the bulk of these taxes can be passed on to the consumer in the form of higher prices. Thus, consumers end up paying very much more for barrels of oil that are embodied in industrial products than they pay for oil that is used for home heating. This can only occur if the oil embodied in the industrial product provides more consumer satisfaction per barrel than the oil used for heating, or in other words, the program ends up in a situation where consumer satisfaction could be increased significantly by transferring barrels of oil from home heating to industrial production. However, the program prohibits such transfers from occurring and thus diminishes consumer well-being significantly below the level that could be achieved if a given oil supply was used more efficiently than it will be under the Administration's program.

Let us now focus on the domestic oil that has its price raised close to the world price by the wellhead tax. Were it not for our system of price controls, this price increase would have occurred long ago. Oil companies would have enjoyed a major profit gain and consumers would, of course, have paid higher energy prices. The situation would have been analogous to, although more extreme than, that occurring with food several years ago when world scarcity drove up the price substantially; ordinary farmers and agricultural corporations enjoyed windfall gains; and the consumer paid the bill. Our ordinary tax system is designed in part to dampen the transfers of income that occur in such cases. The corporate tax, progressive income taxes on dividends and ordinary income, and capital gains taxes all drain off some of the gain. In other words, even if we applied the free market solution to the oil and gas situation, the ordinary tax system

would absorb some of the gain to oil and gas producers and there would be considerable extra tax revenues that could be rebated.[1] However, it is clear that our society does not regard shareholders in oil corporations as being as meritorious as ordinary farmers or shareholders in agricultural corporations, and therefore, there is a general feeling that the ordinary tax system does not do a sufficiently good job at dampening the implied free market windfall gain in the oil and gas sector. This view may be difficult to accommodate in our mixed free enterprise economy, but it would be foolish to deny that it is held very strongly.[2] Hence, we seem to require a complicated apparatus to ensure that the windfall transfers are lowered far below the level that would result from a free market rise in the price of oil combined with the ordinary operation of our tax system.

Before looking at the Administration's complicated apparatus that reduces windfalls, I do believe it important to make two points. First, while it may be considered inequitable to allow windfall gains to oil companies, there is no system that can neutralize all of the income transfers resulting from a change in relative energy prices. There are as many different situations regarding energy use as there are families. Therefore, any system that prevents the one perceived inequity of transfers to oil companies is sure to generate many other perceived, although perhaps smaller inequities, as it transfers income somewhat arbitrarily among families in different circumstances.

Second, the effort to replace one major perceived inequity with a large number of smaller inequities will impose major costs on society. The Administration's specific plan requires a major control and regulatory apparatus which will directly cost hundreds of millions of dollars to administer as it works to constantly differentiate old-old oil, new-old oil, new-new oil, etc. Moreover, these direct administrative costs may be minor compared to the waste in the use of resources that the system generates. Just citing one example, an owner of old oil reserves might conserve them if he thought prices were going to rise in the future more than the inflation rate plus the real interest rate. If the owner has no hope of such a price rise, the oil will be exhausted as quickly as possible thus leading to a result contrary to the conservation goals of the program. Perhaps more important, you have a major distortion to production incentives resulting from arbitrary definitions of old-old based on arbitrary rules which depend on the depth of a well and its distance from other old wells.

Although society may be willing to pay these costs temporarily in order to avoid windfall gains to oil and gas companies, I am disturbed that there is no end in sight to the huge regulatory costs of the Administration's program. The value of windfall gain to oil companies can be reduced considerably by delaying them. I do not see why the program does not contain a self-destruct mechanism that at least gradually phases out the complex control apparatus over some defined time period.

Turning to the rebate part of the program, the Administration has chosen to make equal per capita rebates both to taxpayers and non-taxpayers. It is this part of the program that results in a windfall gain to the poor and a loss to the middle class and the rich.

In discussing this part of the program, it is necessary to note that the program's overall complexity makes it extraordinarily difficult to estimate its quantitative impact on budget revenues, on particular income groups, and on energy prices. I shall be forced to use uncertain numerical examples in the discussion, and although the examples have some grounding in reality, they should not be regarded as precise forecasts of the program's impact.

By 1985, it is expected that the wellhead tax will raise $12 billion. Users of home heating oil will receive over $800 million in rebates; refiners will pay $2 billion less in income taxes because they face higher crude oil prices; leaving about $9.4 billion for rebates or roughly $40 per person. In addition, the gasoline excise tax will be returned to the consumer and this could more than triple the rebate, but because it is so uncertain, I shall focus only on the rebate of the crude oil tax.

The poor gain relatively from the tax plus rebate because they get the same per capita rebate even though they typically consume much less energy than the middle class or the rich. For example, in the period 1972–1973, direct expenditures on energy broke down as follows:

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[1] There are assumptions that can be made which lead to situations in which rapid price increases on one product are offset by slower price increases on others in which case there may be no extra taxes to rebate, but I do not regard this as a likely outcome.

[2] It should be noted that even in the case of food, the Government was not entirely satisfied with the working of the free market as modified by the tax system. Hence, food exports were restricted.

	Energy expenditure	Energy expenditure as percent of income
Average income:		
$2,500	$380	15.2
$8,000	576	7.2
$14,000	826	5.9
$24,500	1,005	4.1

In addition, consumers use energy indirectly to the extent that it is used to produce the goods and services that consumers buy, but the pattern of indirect energy consumption probably does not differ too radically from that of direct energy consumption.

The table shows that the $14,000 income class directly spent more than twice as much on energy than the $2,500 income class. But if the families are of equal size they get exactly the same rebate. If the $14,000 family happens to be exactly compensated for increased energy costs, the $2,500 family is sure to gain unless it is very unusual. The situation is mitigated if the $2,500 family is smaller, which is likely, but this factor will be far more than offset by another feature of the program. If the low income family is on social security or is in the supplemental security income program, its benefits are indexed to protect against price increases. Benefits will therefore rise automatically when energy prices rise. It will then be compensated twice—once through an increase in benefits and once through the per capita rebate. For this reason, low income groups will, on average, benefit significantly from the whole program.

Even if the middle class gets its indirect payment of the wellhead tax rebated, it will be possible to find some poor families that suffer a significant loss just as it will also rise as a result of the net $40 billion tax increase on industrial users of oil and gas that the Administration plans to collect over the period 1978–1985. There is no plan to rebate this tax to consumers on a per capita basis. It is used to finance the increase in indexed benefits which compensate much of the poor population (and also some rich social security beneficiaries) for the price increases caused by this and other tax increases and to finance the oil storage program, insulation tax credits and other revenue reducing or outlay increasing parts of the overall program.

Despite the strong bias toward the poor in the Administration program, it should again be emphasized that there is enough variation in particular family circumstances that although the poor as a group are far more than compensated, it will be possible to find some poor families that suffer a significant loss just as it is possible to identify some middle class and rich families who will gain.

Nevertheless, I do not think it wise to engage in what is, on average, a major redistribution of income under the guise of an energy program. Questions of overall income distribution should instead be debated in the context of overall welfare and tax reform. I, therefore, believe that any system of rebates should make a more careful attempt to compensate various income groups for the average burden that the energy program imposes. This implies a system of tax reductions and payments that is progressive in the sense that the highest proportional tax cuts should go to low income groups because they end to spend a higher proportion of their income on energy but higher absolute tax cuts should go to the middle class and rich because they spend absolutely more on energy. How should this goal be accomplished?

Because there is no absolutely fair system of rebates, the design of tax cuts must to some degree reflect the designers' notion of an equitable tax reform. My own design would have the following features:

1. Indexed benefits would be assumed to take care of those on indexed programs.
2. In addition, additional AFDC per capita payments would be made to reflect the increased cost of the energy component of the typical welfare budget.
3. The earned income credit would be made more generous for the working poor.
4. The positive tax system would be adjusted roughly to conform with the sort of adjustment that would be made to keep it from being affected by a general rise in prices. That is to say, basic exemptions, per exemption tax credits, standard deductions and the size of individual tax brackets

would all be increased by approximately the same proportion. This would have the effect of giving the highest proportional tax reductions to lower income groups while the absolute cut would rise as you move up the income scale. It would also lower almost everybody's marginal tax rates.[8]

Again, it should be emphasized that this is not a completely equitable plan. There is no such thing. I do, however, think it important not to saddle the middle class with another large tax burden hidden by a complex energy program. Since 1967, the average income and employee payroll tax has raised the average tax rate on a typical median family of four from 12.4 to 16.9 percent while lower income groups have received considerable tax relief.

In this testimony I have ignored many important components of the Administration's energy program. Before concluding, however, I would urge the committee to look critically at the proposed oil and natural gas user tax on industries and on its proposed rebate to investors in coal using equipment. Our system contains many strange tax provisions, but I can think of none this strange that would impose a $40 billion burden over eight years. There would be little need for such user taxes if we were willing to go to the world price equivalents for oil and natural gas. If it is believed that there are national security reasons for provoking more conservation than would be forthcoming at this price, then a sensible policy would impose a tariff on imports plus an additional excise tax on domestic production.

The proposed tax has many dubious features. First of all, it is progressive with respect to the size of the firm. A corporation owning five identical plants would pay a higher average energy use tax rate than one with four identical plants. There is no rationale that I can see for such a tax structure. Egalitarians might like this approach if it could be shown that the larger corporation is always owned by richer shareholders or is producing products that are used more by the rich than the poor, but I know of no data that support this kind of generalization.

But perhaps the worst feature of the proposal is the rebate for coal using equipment. It amounts to a subsidy of 70 to 75 percent of the capital cost of such equipment and will result in tremendous waste of coal. Coal may be plentiful but it certainly is not that cheap. To me, it is totally inconsistent for the program to go to great lengths to avoid providing windfalls to stockholders who happen to own oil companies and then to provide a bonanza to those firms who are in a position to convert to coal burning equipment.

Senator HASKELL. Next, from Data Resources, Inc., Dr. Cook and Miss Rogers.

STATEMENT OF DR. ALVIN A. COOK, JR., AND MISS VIRGINIA ROGERS, DATA RESOURCES, INC.

Mr. COOK. I appreciate this opportunity to comment on President Carter's energy proposals, specifically in the context of the tax provisions and the rebate provisions.

President Carter has prepared a farreaching, complex energy plan aimed at slowing down U.S. consumption of energy, especially petroleum, and reducing U.S. dependence on imported oil.

The principal mechanisms proposed are (1) taxes and tax credits to reduce consumption of petroleum and natural gas and switch the U.S. consumption of energy primarily to coal, and (2) rebates to minimize adverse effects on the economy. In our testimony today, we will present the results of some of our studies at Data Resources that seek to measure the energy and economic impacts of the program, and provide some recommendations.

As an indication of the severity of the worldwide energy situation, the administration has advanced the CIA findings on worldwide oil

[8] With more precise data, the matching of the tax cuts and increased direct and indirect energy costs for different income groups might be done more precisely by widening some brackets more than others or by lowering certain marginal rates.

shortages by the 1980's because of low rates of discovery and the potential switch of the Soviet Union from a net exporter to a net importer of petroleum. A recent widely-reported MIT study projects a worldwide energy shortage by the 1980's.

The results of these studies are disquieting in that they fail to adequately incorporate the effects of higher prices paid to suppliers and the economic viability of alternatives such as shale oil at increasing higher prices for petroleum. Yet there is a problem as energy policy presently exists, and in the absence of action, the United States will import increasingly more oil over the next 15 years.

The chances are that OPEC's ability to raise prices will continue to mount. Moreover, the OPEC supplies can be considered insecure. The industrial world is becoming increasingly dependent on the OPEC countries, and, if the United States does not adopt stronger energy policies, our demand in world oil markets could approach the 16 million barrels per day level that the President's plan indicates.

Under these conditions, the potential damage from a future embargo would become immense, much greater than in 1973–74. We have made major progress in repairing our relations with the oil-producing countries, and we have reason to be hopeful that there will be progress toward peace in the Middle East. But we cannot be certain that such progress will be made, nor can we be sure that the OPEC countries will retain their current high political stability over periods as long as 10 or 20 years.

Once the need for a national energy program is postulated, the nature of the program falls into place rather quickly. There is no way to reduce the volume of U.S. oil imports without confronting households, businesses, and governments with substantially higher oil prices. Thus, in one way or another, the price of oil has to be allowed to increase. Were we to rely entirely on the market alone, the incomes of Thus, in one way or another, the price of oil has to be allowed to increase is politically unacceptable, then the increase in oil prices must be partly achieved through a system of excise taxes, either levied on the producers or the consumers. That is the heart of the President's program.

The negative economic impact grows mainly out of the higher prices, and there cannot be a meaningful energy program which does not impose these costs on the economy. The Congress can improve the proposals, but there is no way to significantly reduce the costs to the economy and still accomplish the energy goals.

I will summarize briefly some of the results that Dr. Eckstein, Virginia Rogers, and I put together immediately after the President proposed his program. At that time, we assumed that the Government would return to the economy the full amount of the purchasing power that the energy taxes would withdraw. Since the President's announcement, further details have become available on the fiscal intentions of the program.

Table 1 shows the revenues to be collected by the program, the tax expenditures paid out in the form of investment credits, and the tax rebates designed to restore purchasing power. That information shows that the fiscal plans are a good deal more complex than the initial announcement indicated. The energy revenues will be used to

finance a wide variety of expenditures that can be considered to be energy-related but many of which would have to be incurred anyway.

The Federal Government is making handsome provision for any energy-induced increases in its own costs, including such obscure effects as the extra escalation costs of social security and food stamp programs, but is showing no comparable concern for State and local governments or the private sector.

Thus, it is no longer possible to assess the full fiscal impact of the energy program; one must examine the general fiscal policy of the Government, a fiscal policy which now pivots on the goal of budget balance by 1981.

Table 1 also shows that the fiscal magnitudes of the program are quite large. Even if the gasoline tax is not triggered, the revenues collected over the 8 years 1978–85 equal $35 billion, or $17 billion per year. Various energy-related budget expenditures equal $50 billion, or an average of $6 billion per year. The miscellaneous tax expenditures, the investment tax credits, are $1.5 billion a year. Tax rebates, which principally would be energy-motivated reductions in personal income taxes, would equal $9 billion a year. If the gasoline tax were to be triggered, the magnitudes would become much larger.

The gasoline tax could actually accumulate to approximately $153 billion a year by 1985. These are the figures that were released by Secretary Blumenthal recently in a press release.

What about the economic impacts? The energy program raises three big questions: First, what would it do to shortrun economic performance? Second, will it seriously change longrun growth aspects? Third, will it achieve the energy goals?

Senator HASKELL. Before you get into that, let me ask you a question. I should have also addressed this to some of the earlier witnesses.

There have been some people who say that you have inflationary impact when you collect these taxes which have the effect of raising prices throughout the economy. Then those people say you have a second inflationary impact when you give all that money back. Therefore, the President's program is extremely inflationary. Would you comment on that? I am not saying necessarily that these are my views. I have heard them.

Mr. COOK. In effect, if you increase energy prices you do, in fact, raise the energy price level. The effect of giving the money back to consumers raises the level of consumer spendable income. This increase in consumer income increases the purchase of goods and services and increases the level of GNP.

In effect, there could be some increase in inflationary pressures due to giving the money back, but when a proper rebate scheme of reducing the physical amount of energy purchased, because of higher per unit costs, and increasing purchases of other nonenergy goods and services is, in the long run, to offset the higher prices with the maintenance of purchasing power and to maintain consumer welfare.

The administration holds that the effect of its energy program on the economy would be essentially neutralized and in fact would be mildly stimulative. We do not think so. We think that the rate of increase in inflation would be greater than the rate of increase to the

purchasing power. Thus, in total, consumers and the economy would be slightly worse off.

Senator HASKELL. Thank you. Go ahead.

Mr. COOK. In terms of the shortrun impacts—and I think here the question you just asked needs to be looked at in terms of the short run and long run—there are many institutional factors in the economy that prevent the complete interaction of the rebates to work their way through the economy so that the effects would be more adverse than in the longer run, after the economy has had a chance to absorb the new relative prices to reestablish consumers' purchasing power.

There are five principal questions about the short-term economic impact.

INFLATION

DRI's analysis shows that the inflation rate 1976–80, would be raised by 0.7 percent a year. Table 2 summarizes the inflation impact, beginning with the gasoline deflator and all-fuel wholesale price index. The administration has gone to great lengths to phase in the program to avoid inflationary shocks.

The Wholesale Price Index for fuels would be approximately 3.9 percent per year. The Wholesale Price Index in total will be up approximately 1.1 percent a year, whereas, the Consumer Price Index would be up only 0.8 percent per year over and above what it would have been without these higher prices.

BUSINESS FIXED INVESTMENT

The energy program will directly boost business spending for energy conservation. It will require industrial plants and utilities to convert from oil and gas to coal both through regulation and the industrial use taxes, and it will add to construction activity through the incentives and requirements for better insulation and energy conservation.

The program will also boost investment by the automobile industry in order to accomplish the dramatic change in its product, although the previously established efficiency requirements already would have accomplished the larger part of this goal. DRI is using an estimate of $3 billion for those effects by 1980.

To be weighed against these extra outlays are the indirect negative effects of the program. In the very near term, investment will inevitably be held back until the Congress has enacted a version of the program; until that moment is reached, energy-related investments cannot be planned with any sense of security. The solution assumes congressional action by summer.

In the longer run, investment will be reduced by higher interest rates. The Federal Reserve is unlikely to accomodate the extra inflation with a higher monetary target, and therefore, interest rates will be up about 40 basic points. Further, the capital outlays for energy conversion will compete with other investment for company financial resources, crowding out some capacity expansion projects.

DRI's preliminary assessment of the net impact on investment is slightly negative. Construction activity is cut, but equipment purchases

are slightly higher. In general, the real GNP will be down approximately 0.2 of a percentage point per year from 1976 through 1980. Real consumption will be down approximately the same.

AUTOMOBILE SALES

The impact of the program on automobile sales is negative. First, higher prices for gasoline raise the operating costs of a car which somewhat reduces the demand for new automobiles. Further, the higher gas prices affect the total mileage driven, reducing the wear and tear on the automobile stock and reducing the replacement demand.

Here, again, there is some dispute among economists on the effect of the President's program on automobile sales, some arguing, in fact, that automobile sales would rise because of the demand for smaller cars outweighing the effect of the higher gas prices.

Finally and most importantly, the efficiency requirement coupled with the gas-guzzler tax will affect automobile demand in several ways. Gradually stiffening efficiency requirements may accelerate automobile demand in the near term if the buying public really has a strong desire for the larger cars. On the other hand, the rational consumer will be aware of the high and rising gasoline costs, and therefore will weigh the benefit of the greater efficiency. The challenge will be for the automobile companies to turn the mandatory product changes into a marketing opportunity, thereby increasing sales by offering a product that is more desirable in dimensions other than size.

Coupling the efficiency standards with the gas-guzzler tax will reduce the price of small cars. This will add to the total volume of unit car sales by making the smallest car even cheaper. Further, the program may strengthen small car sales by domestic manufacturers, slightly increasing their share of this market, if indeed the tax and rebate funds are pooled by manufacturers. Unit sales of large cars, as defined by today's standards, will inevitably decline. Their share of the total automobile market would shrink from this year's 30 percent to 19 percent by 1980.

DRI estimates that the net impact of these considerations is a reduction in sales of about 300,000 units in 1980. This figure is principally based on the effect of the higher gasoline prices on demand, since the efficiency requirement was already an ingredient of the base case solution reflecting inherited policies and the gas-guzzler tax actually may boost unit sales. The dollar volume of the automobile industry will be off by about 5 percent, mainly because of the changed mix of cars.

There are a variety of other effects on final demands, of course. Higher energy prices will affect airlines and hotels. Compared to the embargo of 1974, the magnitudes are much smaller, of course, since energy prices are already quite high and there is no disruption element.

Housing activity will be shifted in composition. The various incentives to encourage home insulation will lead to a larger volume of alteration work. On the other hand, stiffer building codes will raise

construction costs and higher energy prices will raise the cost of household operation. The increase of interest rates created by the extra inflation will also chip away at housing starts, bringing the average reduction to 54,000 units.

The net impact of these estimates is to lower real GNP in 1980 by 0.7 percent, a small figure, and one probably within the margin of error in the analysis. The administration concluded that there was no net impact on total real activity. The difference between DRI and the administration analysis lies principally in our assessment of indirect negative effects on business fixed investment. Since all of these calculations are comparisons with a hypothetical baseline, the sign of the small net effect on real activity will never be empirically observable. All in all, the inflation impact of the President's energy program is two-thirds of a point a year, the impact on real activity is a growth reduction of a fifth of a percentage point a year.

The economic impact on the economy has to be seen in both a long- and short-term perspective where the short-run costs incurred in switching the economy toward a less energy-intensive path are offset by the long-run benefits of less energy consumption and reduced dependence on imported oil.

The President's program is based on the belief that the economy was headed for a severe crisis later on, when desperate shortages or embargoes might seriously disrupt the economy. Various analyses have persuaded the Government that the domestic oil and gas markets were headed for early trouble, and that even the world oil economy would have entered a period of imbalance in the 1980's that would have greatly strengthened the hand of OPEC.

Thus, whatever calculations may be performed about the gas pros and cons of the impact of the program on such traditional macro dimensions as GNP growth, unemployment, inflation, profits, or interest rate, the overriding assumption is that the normal pattern of development would have been lost on some future day of reckoning.

The direct impact of lesser energy consumption on the growth of potential GNP cannot be calculated precisely, but realistic upper limits can be derived. Since the energy change is introduced gradually, disruption effects are small and the economy's technical coefficients must be considered flexible. Capital and labor will be substituted for energy, slightly reducing the productivity trends of these two factors. Since energy represents about 5 percent of all inputs in the productive process, a 1.5 percent curtailment of its use can directly reduce the potential trend by little more than 0.1 percent. Indirect effects, such as the negative impact of inflation on capital formation, can bring the total loss of potential growth to 0.1 to 0.3 percent.

The President's national energy plan will go a long way toward achieving the energy goals. The annual growth of United States energy demand will be reduced from 3.5 to 2.7 percent annually from 1976 through 1985, and will be approximately 2 percent thereafter.

Since the recent pronouncement by the administration, that figure has been revised upward from 2 to 2.3 percent.

According to stimulations of DRI's Energy Policy Model, total consumption will be approximately 93 quads—quadrillion Btu's—in 1985. See table 5. Consumption of petroleum will be approximately 39

quads or 19 million barrels per day. With an expected domestic production of 11 to 12 million barrels, imports of oil will be reduced to 7 to 8 million barrels per day, near the President's goals for imports.

The program achieves a substantial shift in energy demands. Consumption of coal in 1985 is approximately 24 quads or 1.1 billion tons. Coal's share of energy demand increases from 19 percent in 1976 to 26 percent in 1985 while the petroleum and natural gas shares decrease from 48 percent and 28 percent respectively to 42 and 20 percent respectively. Nuclear power provides 8 percent of the total in 1985, a sharp rise from its 3 percent share in 1976.

The principal questions on the attainability of these shifts are on the supply side. Can coal production reach the needed level? Can enough nuclear plans be completed? Can the slide in domestic oil and gas production be halted? Higher prices and improved regulatory procedures are the main policy tools on which hope for better supplies rest.

Additional nonprice conservation programs proposed by the President should achieve approximately 2.5 quads of savings in 1985. Insulating old and new buildings heated with fuel oil reduces heating oil demand by approximately 800 trillion Btu's and insulating natural gas heated homes reduces heating demand by 300 trillion Btu's in 1985. Efficient electric appliances reduce residential electricity demand by 50 trillion Btu's in 1990.

Cogeneration and other conservation measures will save approximately 1 quad of heating and 1.4 quads of process energy by 1980. Solar heating of 5 million homes in 1990 will save approximately 300 trillion Btu's of electricity.

Most of the savings in energy demand are achieved by higher prices. Taxes, OPEC, general inflation, Government price policies and strong demands for the newly favored sources will produce sharply higher prices, as table 6 shows. The policy measures include wellhead taxes on crude oil, a gasoline tax, the decontrol of gasoline, permission to let oil discovered after April 20, 1977, rise to the world price, industrial use taxes on petroleum and natural gas, and an increase in the interstate natural gas price from $1.42 per thousand cubic feet—mcf—to $1.75 per mcf.

The two previous witnesses indicated the problems with the different tiers of oil. Six tiers are now proposed rather than the three existing tiers. It is not clear that the price increase in oil, namely allowing it to reach the 1977 world oil price, actually reaches the world oil price subsequent to 1980 because of the way the particular proposals are written.

Oil prices decelerate after 1980 as the pressure from world markets is eased by lesser U.S. demands and the decontrol process has gone through its major phase.

In conclusion, the general design of the President's program is a near inevitability once a decision is made that U.S. dependence on imports must be limited. Nevertheless, the program can be improved.

We feel that there are ways in which the various taxes can be changed. I support some of Dr. Penner's concerns about the industrial tax and the fact that it could be better designed. In particular, the program is designed on the basis of an unrealistic set of beliefs about the

capability of Government to manipulate the private sector. The program is too complex and seeks to involve Government into the detailed decisions of families and businesses in ways that would be ineffective, undesirable, and expensive.

There are two possible places where the program could be simplified. There are many others, but I would like to focus on two possible places.

One, the tax expenditure subsidies. The program includes different investment tax credits as summarized in the previous table 1. There is no way to administer these tax credits effectively.

As you know, the Internal Revenue Service cannot audit such items as home insulation. On the business side, the tax credits for more exotic purposes such as geothermal and solar energy are stimulations for the taxpayers to throw away their money. The Government cannot make a serious effort to determine that the outlays that business will claim have any merit. The whole history of the highly specialized tax incentives is one that has proved to be wasteful. This is seen clearly in the home purchase tax credit of 1975 that simply proved to be a windfall to the families who happened to be purchasing a home that year.

Senator HASKELL. As an aside on that, after we had passed that tax credit of $2,000, which I, incidentally, opposed, I got home and found my daughter and son-in-law absolutely ecstatic, because they had been planning to buy a house and they bought it at the right time. So I share your views on that.

Mr. COOK. I was a month too early.

Second, reduce the scope and complexity of price controls and regulations. The President's program substantially increases the amount of regulation imposed on the economy. Much of that increase is based on an illusory view of the ability of Government to actually carry out such regulations in meaningful form.

Senator HASKELL. By regulation, are we talking about these taxes and credits?

Mr. COOK. Particularly, I have an example which has to do with the classifications of oil drilling.

Senator HASKELL. The six classifications?

Mr. COOK. Yes. Oil wells drilled two and a half miles away from, as Dr. Penner alluded to, and 1,000 feet deeper than existing wells after April 20, 1977 are classified as new new oil. The monitoring of that becomes a morass of regulations and a virtual nightmare for members of the executive branch.

The proposed energy program establishes six classes of oil, each with its own price control schedule: old old oil, old new oil, stripper well oil, new new oil or oil discovered after April 20, 1977, Alaskan oil, and foreign oil. At the same time the entitlements program is in existence, so instead of a two-tier entitlements program, a six-tier entitlements program, that eventually will be phased out in 1980, is established.

The supposition is that there is a practical means to identify and classify each barrel of oil, to track it through the productive and distributive process.

In practice, only the crudest approximations can be calculated even for the most elaborate and reporting requirements placed on business. Further, any multiple pricing system for commodities produces inefficient resource use.

The necessity for ever more detailed controls to hold the multiple pricing system together and the increase in compliance costs by the private sector to meet the shifting regulations will prove burdensome and inconsistent with the President's desire to reduce regulation.

Therefore, we would urge you to take a thorough study of the multiple pricing system that is being proposed and insist on a simpler scheme.

This concludes my formal remarks. I would be happy to answer any questions.

Senator HASKELL. I share your concerns about the multiple pricing system because of its complexity. Do you have any specific suggestions on how to get the job done simpler?

Mr. COOK. There have been a number of suggestions alluded to.

Senator HASKELL. What do you personally feel?

Mr. COOK. Personally, there are two issues: one, to reduce energy demand and, in reducing energy demand, to use the resources efficiently and at the same time to maintain equity.

One of the potential solutions which was suggested by Dr. Penner and I will modify it slightly is to actually employ a single-tier pricing of oil and raise all oil to the price of world oil. In terms of the pricing of oil, only one price exists, and excise taxes can be applied to the oil produced by individual companies.

The regular tax mechanisms in the economy would collect 50 percent of the oil price increase. Designing a tax scheme to collect those revenues not dedicated to additional exploration and development, subsequently rebating them to consumers, would be a much more efficient mechanism.

Only one tier exists. The administrative costs to FEA; namely, the costs of trying to track all the different prices and the compliance costs that Dr. Penner alluded to are reduced. Dealing with one particular price of oil allows businessmen and consumers to use simpler planning mechanisms to deal with the single price.

Senator HASKELL. Senator Dole?

Senator DOLE. I have no questions. I have two meetings going at once. I am sorry I missed your statement. I have tried to read it. I am certain it is there, but you mentioned the six tiers. What are the six tiers?

Mr. COOK. The six tiers, presently there is a tier just called old oil which sells for approximately $5.20.

Senator DOLE. Old oil; old new oil and new oil.

Mr. COOK. Yes.

There is old, old oil, under the new system, which is the oil which is presently selling for $5.20 per barrel. There is the new oil, present new oil, which would now be classified as old new oil?

Senator DOLE. That would be old oil?

Mr. COOK. We will call it old, new oil. Right now you have a lower tier and an upper tier. You might call those tiers 1 and 2.

Senator DOLE. Then you have a tier 3?

Mr. COOK. Tier 3, which is the tier representing the price of all oil discovered after April 20, 1977, is a new tier for Alaskan oil—which may, in effect, come about anyway because the Alaskan oil price has to be recommended to Congress by the President sometime this year. We would urge that it not be reclassified as a new tier, but there is every indication that the classification would occur anyway under current prices.

Then stripper oil would be a new tier also. Stripper oil would be allowed to rise to the price of foreign oil immediately. However, the price could then only increase at the rate of domestic inflation. Thus stripper oil is in a whole different pricing structure than other oil. In a sense, it is the fifth tier.

Then imported oil constitutes the sixth tier, which increases the rate of world inflation.

Senator DOLE. It all gets complicated very quickly.

Mr. COOK. It gets complicated and gets very hard to try to administer in terms of the information coming back from the field. FEA has to first of all get the information and then ascertain if the information is correct.

Once it is correct, it has to determine, in the context of the entitlements program, what the price should be. Then the money collected from people who possess old oil which is lower in price than the imported oil is distributed on an equitable basis among refiners inversely proportioned to their purchase of imported oil and upper tier oil.

Senator DOLE. On the stripper well, is there a wellhead tax on the stripper well, or are they permitted to make a windfall profit there?

Mr. COOK. Yes, the latter.

Senator DOLE. On the basis that it does not produce a great deal?

Mr. COOK. Stripper wells are wells producing less than 10 barrels per day.

Actually, if you were trying to impose a tax on stripper wells, it would probably triple the administrative headaches just because of the number of wells in existence and the fact that the people who own stripper wells are small from a business point of view and do not have the established bookkeeping procedures that the larger companies have.

Senator DOLE. Some firms own hundreds of stripper wells and the total output is substantial. We have a lot of stripper production in Kansas and some in Colorado. We are talking about equity and inequity and sacrifice. I have not been able to determine where one starts and the other ends, particularly if we want to do equity and the so-called poor get back double, I do not quite see the equity.

I think Professor Hall's testimony where what would be returned to the poor would be twice of what they may pay—in some cases they do not pay anything—I do not understand the equity, unless we are talking about welfare reform. If we are talking about an energy program, I do not understand the goal of the administration.

Mr. COOK. I support Dr. Penner's views in this case. If we are talking about welfare reform, we should talk about welfare reform. If we are talking about energy policy, we should tend to neutralize the effects of energy policy on the consumer by giving back to the consumer an amount that would keep his income constant.

If the administration and Congress wishes to subsidize the poor then we can initiate legislation to do that. By trying to link up welfare reform with energy policy, I think that it tends to muddy the water and make it much more complex.

Energy policy in addressing the energy problem is complex in itself. Trying to superimpose on energy policy some form of welfare reform makes it even more complex.

Senator DOLE. Thank you.

Senator HASKELL. Pursuing Senator Dole's comment, Which side of this argument of MIT do you come down on? Professor Thurow whom I quoted, he says, he really says that the poor will not benefit. Professor Hall points out what was said by Senator Dole.

Do you have an opinion on this problem? Who bears the burden of this part of the proposal?

Mr. COOK. I do not think that there is a specific agreement among economists on this, but if I can reconstruct what Professor Thurow was addressing, perhaps a satisfactory answer can be reached. He was talking about the effect of energy taxes on the consumer in relation to the rebate, I presume. In that case, if one looks at the fixed expenditures of lower income groups versus the fixed expenditures of higher income groups, published studies show, in general, that the percentage of the fixed expenditures spent on energy by the lower income groups is higher than that spent by the upper income groups.

If that is true, the impact of any price change, or the impact of any increased price on those fixed items that the consumer purchases, would fall proportionately more heavily on the lower income groups than it would on the higher income groups, which would tend to support Professor Thurow's view.

Senator HASKELL. Let us take the next step.

Professor Hall said—and he can correct me—that the administration's proposal of giving a rebate back would more than compensate the poor. Am I correct?

Mr. COOK. For the wellhead tax.

Senator HASKELL. If I am roughly correct, do you agree with Professor Hall?

Mr. COOK. If, in fact, you rebated a fixed number of dollars per person to the poor and to everybody, then because the poor spend considerably less in absolute dollars on energy than the rich, they are compensated proportionately more than the rich. But if you consider just the incidence of the tax, from the point of view of the higher prices, the impact of the tax falls proportionately greater on the poor than on the rich in that it affects the poor's budget by a greater percentage.

If, on the other hand, a fixed amount is given back to the poor, the poor are compensated more because their total budget is less.

Senator HASKELL. All right. I see.

If I understand you correctly, after you have gone around the complete circle, you basically would agree with Professor Hall?

Mr. COOK. I basically think that Professor Hall and Professor Thurow do not differ.

Senator HASKELL. That is a new point of view.

Mr. COOK. I think Professor Thurow has just focused on the incidence of the tax on a percentage basis where Professor Hall has looked at the net effect in absolute welfare terms.

Senator HASKELL. Thank you very much. I appreciate your appearance very much.

[The prepared statement of Miss Rogers and Mr. Cook follows:]

STATEMENT OF ALVIN COOK AND VIRGINIA ROGERS, DATA RESOURCES, INC.

President Carter has prepared a far-reaching, complex energy plan aimed at slowing down United States consumption of energy, especially petroleum, and reducing U.S. dependence on imported oil. The principal mechanisms proposed are taxes and tax credits to reduce consumption of petroleum and natural gas and switch the U.S. consumption of energy primarily to coal, and rebates to minimize adverse effects on the economy. In our testimony today, we will present the results of some of our studies at Data Resources that seek to measure the energy and economic impacts of the program, and provide some recommendations.

THE ENERGY PROBLEM

As an indication of the severity of the worldwide energy situation, the Administration has advanced the CIA findings of worldwide oil shortages by the 1980s because of low rates of discovery and the potential switch of the Soviet Union from a net exporter to a net importer of petroleum. A recent, widely-reported MIT study [1] projects a worldwide energy shortage by the 1980's.

The results of these studies are disquieting in that they fail to adequately incorporate the effects of higher prices paid to suppliers and the economic viability of alternatives such as shale oil at increasing higher prices for petroleum. Yet there is a problem as energy policy presently exists, and in the absence of action, the United States will import increasingly more oil over the next 15 years.

The chances are that OPEC's ability to raise prices will continue to mount. Moreover, the OPEC supplies can be considered insecure. The industrial world is becoming increasingly dependent on the OPEC countries, and if the United States does not adopt stronger energy policies, our demand in world oil markets will approach the 16 million barrels-per-day level that the President's plan indicates. Under these conditions, the potential damage from a future embargo would become immense, much greater than in 1973-74. We have made major progress in repairing our relations with the oil-producing countries, and we have reason to be hopeful that there will be progress toward peace in the Middle East. But we cannot be certain that such progress will be made, nor can we be sure that the OPEC countries will retain their current high political stability over periods as long as 10 or 20 years.

Once the need for a national energy program is postulated, the nature of the program falls into place rather quickly. There is no way to reduce the volume of U.S. oil imports without confronting households, businesses and governments with substantially higher oil prices. Thus, in one way or another, the price of oil has to be allowed to increase. Were we to rely entirely on the market alone, the incomes of the oil producers would rise very sharply. If such an earnings increase is politically unacceptable, then the increase in oil prices must be partly achieved through a system of excise taxes, either levied on the producers or the consumers. That is the heart of the President's program.

The negative economic impact grows mainly out of the higher prices, and there cannot be a meaningful energy program which does not impose these costs on the economy. The Congress can improve the proposals, but there is no way to significantly reduce the costs to the economy and still accomplish the energy goals.

IMPACTS OF THE PRESIDENT'S ENERGY PROGRAM

The following analyses were prepared by Dr. Otto Eckstein, president of Data Resources, Inc., and us, using various econometric models. These analyses were prepared shortly after the President's program was announced. At that time, we assumed that the Government would return to the economy the full amount

[1] Workshop on Alternative Energy Strategies, *Energy: Global Prospects, 1985-2000.*

of the purchasing power that the energy taxes would withdraw. Since the President's announcement, further details have become available on the fiscal intentions of the program. Table 1 shows the revenues to be collected by the program, the direct expenditures of the program, the tax expenditures paid out in the form of investment credits, and the tax rebates designed to restore purchasing power. That information shows that the fiscal plans are a good deal more complex than the initial announcement indicated. The energy revenues will be used to finance a wide variety of expenditures that can be considered to be energy-related but many of which would have to be incurred anyway. The Federal Government is making handsome provision for any energy-induced increases in its own costs, including such obscure effects as the extra escalation costs of social security and food stamp programs, but is showing no comparable tenderness of concern for State and local governments or the private sector. Thus, it is no longer possible to assess the full fiscal impact of the energy program; one must examine the general fiscal policy of the Government, a fiscal policy which now pivots on the goal of budget balance by 1981.

Table 1 also shows that the fiscal magnitudes of the program are quite large. Even if the gasoline tax is not triggered, the revenues collected over the 8 years, 1978–85, equal $135 billion, or $17 billion per year. Various energy-related budget expenditures equal $50 billion, or an average of $6 billion a year. The miscellaneous tax expenditures, the investment tax credits, are $1½ billion a year. Tax rebates, which principally would be energy-motivated reductions in personal income taxes, would equal $9 billion a year. If the gasoline tax were to be triggered, the magnitudes would become much larger,

TABLE 1.—FISCAL IMPACT OF ENERGY PLAN, 1975–85

		Amount
Revenues	Gas guzzler tax	$7.7
	Wellhead tax	86.6
	Gasoline tax up to	152.8
	Industrial and utility use taxes	40.7
Subtotal		287.8
Expenditures	Old buildings	2.2
	Crude oil direct payments	13.4
	Small car bonuses	7.7
	Federal buildings	2.8
	Oil and gas price controls	.4
	Federal fuel bills	2.9
	Petroleum reserve	11.0
	Assistance to poor	.4
	Federal benefit program escalation	11.2
	Other	.4
	Less research	−2.0
Subtotal		50.4
Tax expenditures	Old buildings	3.9
	Home insulation	2.9
	Commercial industry efficiency	2.2
	Solar	.6
	Geothermal	.2
	Cogeneration	.7
Subtotal		10.5
Tax rebates	Crude oil tax	73.2
	Gasoline tax up to	152.8
Total		226.0
Net effect on budget		+.9

Economic impacts

The energy program raises three big questions:

(1) What would it do to short-run economic performance?
(2) Will it seriously change long-run growth prospects?
(3) Will it achieve the energy goals?

Short-run impact

There are 5 principal questions about the short-run economic impact.

Inflation: DRI's analysis shows that the inflation rate, 1976–80, would be raised by 0.7 percent a year. Table 2 summarizes the inflation impact, beginning

with the gasoline deflator and all-fuel wholesale price index. The Administration has gone to great lengths to phase in the program to avoid inflationary shocks.

TABLE 2.—IMPACT ON PRICES AND WAGES WITH (ENERGY0426) AND WITHOUT (NOENERGY0426) THE CARTER PROGRAM (4-YR AVERAGE RATE, 1976–80)

	Without Carter program	With Carter program	Difference
Wholesale price index, fuels	9.7	13.6	3.9
Gasoline deflator	7.0	12.0	5.0
Wholesale price index	6.0	7.1	1.1
GNP deflator	5.3	6.0	.7
Consumer price index	5.2	6.0	.8
Average hourly earnings	6.6	7.1	.5

Business fixed investment: The energy program will directly boost business spending for energy conservation. It will require industrial plants and utilities to convert from oil and gas to coal both through regulation and the industrial use taxes, and it will add to construction activity through the incentives and requirements for better insulation and energy conservation. The program will also boost investment by the automobile industry in order to accomplish the dramatic change in its product, although the previously established efficiency requirements already would have accomplished the larger part of this goal. DRI is using an estimate of $3 billion for these effects by 1980.

To be weighed against these extra outlays are the indirect negative effects of the program. In the very near-term, investment will inevitably be held back until the Congress has enacted a version of the program; until that moment is reached, energy-related investments cannot be planned with any sense of security. The solution assumes Congressional action by summer.

In the longer run, investment will be reduced by higher interest rates. The Federal Reserve is unlikely to accommodate the extra inflation with a higher monetary target, and therefore interest rates will be up about 40 basis points. Further, the capital outlays for energy conversion will compete with other investment for company financial resources, crowding out some capacity expansion projects.

DRI's preliminary assessment of the net impact on investment is slightly negative. Construction activity is cut, but equipment purchases are slightly higher.

TABLE 3.—IMPACT OF THE CARTER ENERGY PROPOSALS, ECONOMY UNDER CARTER PROPOSALS (ENERGY0426) CHANGE FROM BASE CASE (NOENERGY0426)

	1978	1979	1980	Average
Percent difference in level:				
Real GNP	−0.1	−0.4	−0.7	−0.2
Real consumption	−0.2	−0.4	−0.7	−0.2
Real business fixed investment	−0.1	−0.7	−0.8	−0.3
Difference in level:				
Automobile sales (thousands)	−100	−200	−300	−200
Housing starts (thousands)	−14	−58	−90	−54
Difference in rates:				
Unemployment rate	0.0	0.1	0.2	+0.1
Federal funds rate	0.13	0.36	0.40	0.30

Automobile sales: The impact of the program on automobile sales is negative. First, higher prices for gasoline raise the operating costs of a car which somewhat reduces the demand for new automobiles. Further, the higher gas prices affect the total mileage driven, reducing the wear and tear on the automobile stock and reducing the replacement demand.

Finally, and most importantly, the efficiency requirement, coupled with the gas-guzzler tax, will affect automobile demand in several ways. Gradually stiffening efficiency requirements may accelerate automobile demand in the near-term if the buying public really has a strong desire for the larger cars. On the other hand, the rational consumer will be aware of the high and rising gasoline costs,

and therefore will weigh the benefit of the greater efficiency. The challenge will be for the automobile companies to turn the mandatory product changes into a marketing opportunity, thereby increasing sales by offering a product that is more desirable in dimensions other than size.

Coupling the efficiency standards with the gas-guzzler tax will reduce the price of small cars. This will add to the total volume of unit car sales by making the smallest car even cheaper. Further, the program may strengthen small car sales by domestic manufacturers, slightly increasing their share of this market, if indeed the tax and rebate funds are pooled by manufacturers. Unit sales of large cars, as defined by today's standards, will inevitably decline. Their share of the total automobile market would shrink from this year's 30 percent to 19 percent by 1980.

DRI estimates that the net impact of these considerations is a reduction in sales of about 300,000 units in 1980. This figure is principally based on the effect of the higher gasoline prices on demand, since the efficiency requirement was already an ingredient of the base case solution reflecting inherited policies, and the gas guzzler tax actually may boost unit sales. The dollar volume of the automobile industry will be off by about 5 percent, mainly because of the changed mix of cars.

Other demands: There are a variety of other effects on final demands, of course. Higher energy prices will affect airlines and hotels. Compared to the embargo of 1974, the magnitudes are much smaller, of course, since energy prices are already quite high and there is no disruption element.

Housing activity will be shifted in composition. The various incentives to encourage home insulation will lead to a large volume of alteration work. On the other hand, stiffer building codes will raise construction costs and higher energy prices will raise the cost of household operation. The increase of interest rates created by the extra inflation will also chip away at housing starts, bringing the average reduction to 54,000 units.

Total short-run effects

The net impact of these estimates is to lower real GNP in 1980 by 0.7 percent, a small figure, and one probably within the margin of error in the analysis. The Administration concluded that there was no net impact on total real activity. The difference between DRI and the Administration analysis lies principally in our assessment of the indirect negative effects on business fixed investment. Since all of these calculations are comparisons with a hypothetical baseline, the sign of the small net effect on real activity will never be empirically observable. All in all, the inflation impact of the President's energy program is two-thirds of a point a year, the impact on real activity is a growth reduction of a fifth of a percentage point a year.

Long-run implications for economic growth

The economic impact on the economy has to be seen both in a long- and short-run perspective where the short-run costs incurred in switching the economy toward a less energy-intensive path are offset by the long-run benefits of less energy consumption and reduced dependence on imported oil.

The President's program is based on the belief that the economy was headed for a severe crisis later on, when desperate energy shortages or embargoes might seriously disrupt the economy. Various analyses have persuaded the government that the domestic oil and gas markets were headed for early trouble, and that even the world oil economy would have entered a period of imbalance in the 1980's that would have greatly strengthened the hand of OPEC. Thus, whatever calculations may be performed about the pros and cons of the impact of the program on such traditional macro dimensions as GNP growth, unemployment, inflation, profits or interest rates, the overriding assumption is that the normal pattern of development would have been lost on some future day of reckoning.

The direct impact of lesser energy consumption on the growth of potential GNP cannot be calculated precisely, but realistic upper limits can be derived. Since the energy change is introduced gradually, disruption effects are small and the economy's technical coefficients must be considered flexible. Capital and labor will be substituted for energy, slighly reducing the productivity trends of these two factors. Since energy represents about 5 percent of all inputs in the productive process, a 1.5 percent curtailment of its use can directly reduce the potential trend by little more than 0.1 percent. Indirect effects, such as the negative impact of inflation on capital formation, can bring the total loss of potential growth to 0.1 to 0.3 percent.

Energy effects of the Carter program

The President's national energy plan will go a long way toward achieving the energy goals. The annual growth of United States energy demand will be reduced from 3.5 to 2.7 percent annually from 1976 through 1985, and will be approximately 2 percent thereafter.

TABLE 4.—PERCENT CHANGES IN DEMAND, CARTER PROGRAM

	1976-80	1980-85	1985-90
Coal	9.0	4.6	3.8
Natural gas	−3.9	1.7	−.6
Petroleum	3.3	−.8	.2
Nuclear	13.6	17.0	12.4
Hydroelectric	5.2	1.8	1.0
Total	3.6	2.1	2.2
Electricity	6.2	5.5	4.9

According to simulations of DRI's Energy Policy Model, total consumption will be approximately 93 quads (quadrillion BTU's) in 1985 (see table 5). Consumption of petroleum will be approximately 39 quads or 19 million barrels per day. With an expected domestic production of 11 to 12 million barrels, imports of oil will be reduced to 7 to 8 million barrels per day, near the President's goals for imports.

TABLE 5.—ENERGY DEMAND, CARTER PROGRAM

[Quadrillion BTU's]

	1976	1980	1985	1990
Coal	13.61	19.23	24.14	29.05
Natural gas	19.63	17.27	19.76	18.25
Petroleum	34.71	40.45	38.84	39.30
Nuclear	2.03	3.38	7.41	13.29
Hydroelectric	3.03	3.71	4.00	4.25
Total	73.02	84.05	93.15	104.14
Electricity	6.29	8.01	10.46	13.27

The program achieves a substantial shift in energy demand. Consumption of coal in 1985 is approximately 24 quads or 1.1 billion tons. Coal's share of energy demand increases from 19 percent in 1976 to 26 percent in 1985 while the petroleum and natural gas shares decrease from 48 percent and 28 percent respectively to 42 percent and 20 percent respectively. Nuclear power provides 8 percent of the total in 1985, a sharp rise from its 3 percent in 1976.

The principal questions on the attainability of these shifts are on the supply side. Can coal production reach the needed level? Can enough nuclear plants be completed? Can the slide in domestic oil and gas production be halted? Higher prices and improved regulatory procedures are the main policy tools on which hope for better supplies rest.

Conservation: Additional nonprice conservation programs proposed by the President should achieve approximately 2.5 quads of savings in 1985. Insulating old and new buildings heated with fuel oil reduces heating oil demand by approximately 800 trillion BTU's and insulating natural gas heated homes reduces heating demand by 300 trillion BTU's in 1985. Efficient electric appliances reduce residential electricity demand by 50 trillion BTU's in 1990. Cogeneration and other conservation measures will save approximately 1 quad of heating and 1.4

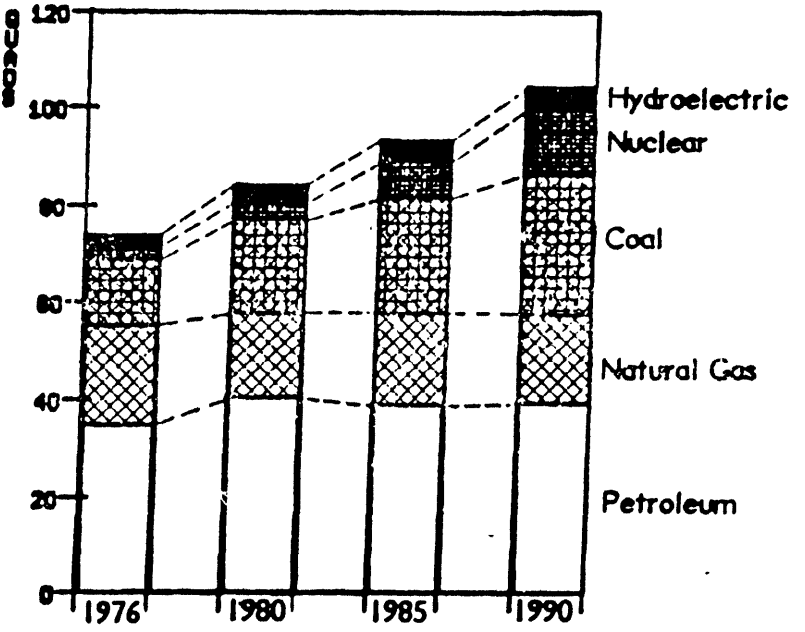

CHART 1.—Changing Composition of Energy Usage (Quadrillion BTU's).

quads of process energy by 1990. Solar heating of 5 million homes in 1990 will save approximately 800 trillion BTU's of electricity.

Higher Prices: Most of the savings in energy demand are achieved by higher prices. Taxes, OPEC, general inflation, government price policies and strong demands for the newly-favored sources will produce sharply higher prices, as table 6 shows. The policy measures include wellhead taxes on crude oil, a gasoline tax, the decontrol of gasoline, permission to let oil discovered after April 20, 1977 rise to the world price, industrial use taxes on petroleum and natural gas, and an increase in the interstate natural gas price from $1.42 per thousand cubic feet (mcf) to $1.75 per mcf. Oil prices decelerate after 1980 as the pressure from world markets is eased by lesser U.S. demands and the decontrol process has gone through itst major phase. Electricity prices are aided by the switch to coal.

TABLE 6.—ANNUAL PERCENT CHANGES IN ENERGY PRICES

	1976-80	1980-85	1985-90
Oil:			
Average domestic crude	12.9	6.9	7.1
Residual fuel	16.1	7.9	6.4
Distillate fuel	10.5	6.2	6.5
Gasoline	12.0	9.1	5.7
Natural gas:			
Interstate contract	13.2	13.4	8.4
Average residential	8.4	10.1	7.0
Average industrial	24.4	10.8	8.1
Contract coal price	7.1	5.8	4.9
Average residential electricity	6.9	4.4	4.1

Senator HASKELL. Now I believe the people from the Wharton Econometric Forecasting Associates are here, Professor Klein and Messrs. Young and Schink.

STATEMENT OF LAWRENCE R. KLEIN, WHARTON ECONOMETRIC FORECASTING ASSOCIATES, ACCOMPANIED BY R. M. YOUNG AND GEORGE SCHINK

Mr. KLEIN. I want to apologize for the delay.

We are going to make a presentation on the same issues that you have been discussing from three points of view. I am going to give the general background; Dr. Young will comment on the short-term impacts through the end of the decade; and Dr. Schink on the longer run impacts, say, through 1985 or so.

In many respects, the energy program is an economic program, possibly the most significant in economic content of the programs that have been put forward thus far by the present administration.

Among the many economic implications of the energy program are the impacts on prices, overall economic activity, and public finances. The Wharton Econometric Forecasting Associates have displayed a great deal of energy content in our models of the economy as a whole, giving us a framework for looking at the energy content of economic policies and the economic content of energy policies. In today's presentation, I and my associates will try to put all these aspects together in order to assess the economic implications of alternative ways of financing a national energy program. I shall proceed by describing to you the models, the policies, and the estimated impacts.

First, let me describe a general Wharton EFA position on economics of energy. Since 1971, we have been concerned about the problems posed by increasing oil imports—by the rate of increase and the increase in share of total energy requirements covered by oil imports. We first treated this as a physical problem, with grossly inadequate allowances for price increases, but still came up with serious deficit estimates for international trade and payments. These were long-run estimates, but we became deeply involved with short-run energy-related forecasts as a result of the 1973–74 embargo, followed by enormous price increases. These latter events led us to predict both national and world recession in November 1973. At that time, and in the ensuing months, we crystallized the following view:

While our long-term model based forecasts for the U.S. economy generally depicted a 4-percent economy—4-percent real growth, 4-percent unemployment—full employment; 4-percent inflation and 4-percent real interest rate—8-percent nominal less 4-percent inflation, we found that post-1973 long-term projections could not be put in the usual 4-percent track. Our models indicated that if we set policies at levels that tried to reach the old targets, under the new conditions, we tended to generate large undesirable inflation rates and trade deficits.

The best that we could achieve in our model projections were real growth rates at about 3 to 3.5 percent, inflation rates at about 5 percent, and unemployment rates of about 5 percent. These were associated with eventual trade balances. There was, therefore, slippage in our target for inflation, growth, and unemployment. While these may not seem to be large amounts in terms of differential percentage rates, they are applied to a large base and cumulate to very significant economic losses under the influences of the rules of compound interest figured over decades.

Given the magnitude of the recession, short-run recovery rates greatly in excess of 4 percent would be attained and could be filtered into long-run energy policies that would contribute to cyclical recovery before 1980 and allow the economy to move toward its pre-1973 path in the 1980's. The resources made available in a short-term environment of economic slack could be put to use in a productive way to try to resolve simultaneously our cyclical and secular problems if energy policy were properly dovetailed with overall economic policy.

The primary analytical tool for Wharton EFA's attack on the energy problem is the Wharton annual and industry model, consisting of a large input-output sector together with a detailed system of final demand, value-added factor income payments, price, wage, and interest rate determination.

This system is dynamic, nonlinear, and numbers about 1,000 equations.

The input-output module consists of 63 separate sectors and has a fair amount of energy detail. It gives separate treatment to oil, natural gas, coal, electric utilities, and gas utilities. It also identifies large energy-intensive sectors such as electric power, cement, aluminum, ferrous metals, and transportation.

Final demand is disaggregated so as to estimate such end-use items as gasoline and oil consumption, expenditures for household operation services, expenditures for household heating fuels, imports of crude petroleum, and other fuels. Final expenditures for capital formation in several energy sectors are also treated in disaggregated form. There are, in all, 67 end-use categories.

There are several features of this system that qualify it for dealing with the problems that we are considering today. Apart from having much energy detail and apart from relating physical aspects of the energy situation to functioning of the macroeconomy, this model treats coefficients in the input-output module (the table of bilateral flows between 63 sectors of the economy) as variable and not as rigidly fixed.

The input-output coefficients in this system vary as a result of changes in relative prices. This is particularly important in the present context because since 1973, relative prices in the energy and other sectors have varied enormously, causing shifts in economic behavior. The Wharton model estimates these shifts as an adaptive time process. This plays an important role in combining technology and economics to obtain the final result of the energy situation in an economic environment and the economic impact of various alternative energy policies.

Wharton EFA maintains another model, known as the Wharton quarterly model. It is primarily concerned with interpreting the short-run business cycle situation but has a limited amount of sector detail by industry. The main effects of energy limitations on the supply of goods is first worked out in the large Wharton annual model and then translated into results for the short-run model.

On the final demand side, the Wharton quarterly model has full enough detail to display most of the same energy items in consumer spending and foreign trade—that are developed in the large scale annual model. The quarterly model has fewer investment categories, however. The quarterly model is used to estimate the quarter-by-quarter developments for the next 2 or 3 years.

It has been stretched for the present investigation to the end of the decade. It is to be used to show more closely the working of the administration's energy program from an assumed starting date, followed through short-run quarterly movements to get the cyclical impact in the very near term.

The quarterly model pays more attention to inventory adjustments, money market conditions, and cost-price fluctuations. The annual model is more concerned with details of technology, growth processes, some steady state properties of the economy and the sector composition of supply. They each shed light on different aspects of energy economics and complement one another.

Five different simulations constitute the basis of Wharton EFA's assessment of energy and the economy. They are basically designed to throw light on alternative ways of financing energy programs. The titles of the policies are:

One, slow deregulation, baseline case.

Two, fast deregulation, a free market by 1980.

Three, Btu tax, rebated through offsetting reductions in personal and corporate income taxes.

Four, Btu tax, rebated through offsetting reductions in residential property taxes, indirect taxes.

Five, Carter program with rebates to business as investment tax credits to households as investment tax credit, and to households for personal income tax relief.

Slow deregulation implies that it will take more than 10 years to bring U.S. prices all the way up to equivalence with world market prices. This plan of action is assumed to be the policy of the former Ford administration and relies on existing legislation in place to guide the economy in the energy field for the next several years.

This simulation, being essentially a status quo situation, will serve as the baseline case. That does not mean that it is WEFA's forecast in the strict sense; it is only a reference point. Since it is a status quo simulation, it seems to be well suited to the role of a baseline case.

If oil and natural gas prices are completely deregulated on a steady path, by 1980 we have a case of a "free market" in energy fuels to contrast with the baseline case. The word "free market" is intended to describe only U.S. domestic fuel pricing, for this cartelized world setting is anything but a "free market."

U.S. prices would drift upward to OPEC prices by 1980, under the conditions of this case. Since a number of long-term contracts are presently in force, for natural gas and other fuels, it is assumed that all outstanding contracts will be honored. It is also assumed that the higher energy prices accruing as profits to the private sector will stimulate additional exploration, leading eventually to increased domestic production of oil and natural gas. This increase in domestic supplies allows us to cut back imports correspondingly.

A tax on Btu's associated with primary fuels that amounts to $63 billion now and reaches $81 billion by 1985 would be imposed. Of this amount, 30 percent would be returned to corporations. Personal taxes would be reduced by 50 percent, while 10 percent would be retained by the Federal Government and 10 percent would be transferred to State and local governments to offset their higher energy costs.

The same kind of Btu tax introduced into simulation 3 is introduced again but the offset in this case is to be mainly indirect rather than direct taxes. The indirect tax selected is the residential property tax collected by State and local governments. A transfer must be introduced, grants-in-aid, from the Federal to the State and local sectors to enable the latter to meet their current obligations.

It seems more logical to rebate an additional indirect tax through another indirect tax. This was, in fact, the approach taken by 1972, when there was extensive discussion of the introduction of VAT offset by corresponding declines in residential property tax. The general sales tax could also be used as the rebating medium, but the idea of substituting more house for less energy seems to be particularly attractive, as an offset structure.

The only difference between this simulation and case 3 is that the 50 percent rebated to the personal sector is in the form of reduced property taxes instead of reduced income taxes.

Since the energy program, through the Btu tax or other similar tax—as we shall see with the Carter energy proposals—tends to be inflationary, our proposal to rebate property taxes tends to be anti-inflationary. Indirect taxes imposed raise prices, and those cutback should hold prices down. This kind of rebate is thus serving one of our macroeconomic targets.

I would mention, in connection with your question to the previous witness about inflationary impacts of rebating personal taxes, that rebating through property taxes is an attempt to deal with this problem. Rebating through the property tax is less inflationary because the final prices, figured in indirect taxes, are rebated in indirect taxes.

The fifth proposal, the Carter energy program has many facets. It calls for energy conservation, higher indirect taxes—wellhead equalization, gasoline taxes, gas guzzler tax, investment in insulation, investment in solar energy, mandatory use of coal, and other items.

It is not specific on the amount to be rebated. We have made the following assumptions for the fifth simulation: investment tax credits would be provided to the business sector for carrying out mandated energy investment; investment tax credits would be provided to the household sector for expenditures on insulation and on installation of solar heating systems. Finally, we have assumed that the gasoline excise tax would be rebated through personal income taxes—a direct tax, and transfers.

The baseline simulation has some cyclically high growth rates in 1976, 1977, and 1978 but it drops to a 4-percent average for the whole decade to 1986. This aspect of the 4-percent economy remains, but the other 4-percent targets are not being met; namely, unemployment rate, inflation rate, real interest rate, and trade balance. After 1986, however, the real growth rate in an extended baseline case falls to much lower levels, in the neighborhood of 3 percent, but sometimes lower. This is the slow economy that we have consistently found since 1973.

We have not introduced specific employment policies into the baseline case, keeping only policy programs that presently exist and trending public sector fiscal/monetary policies along established historical paths. Consequently, we have fairly high rates of unemployment for the next several years.

The good fortune of a demographic slowdown, particularly in a labor force growth enables the simulated economy to reach unemployment rates of 4 to 4.5 percent after 1985.

In the results reported here, we are more interested in differential amounts, associated with policy alternatives to the baseline case. Accordingly, we did not seek a simulation path that came closer to announced economic goals of the administration.

A feature of the Wharton simulations, generally, and this is especially true of long-run simulations to the year 2000 is that the relation between total energy consumption and real GNP is decidedly curvilinear. This shows a falling ratio of energy, measured in quads—quadrillion Btu's, to real GNP even though it has been steady up to the 1970's.

The reason why this calculated relationship between energy input and real output tends to show a falling ratio in the future is that relative price changes induce shifts in demand. Relative prices play their time-honored economic role. In contrast to some engineering estimates, made on a purely volumetric basis, our estimates and those of other economic models indicate that consumers and industrial users of energy are going to cutback significantly in the face of rising relative prices.

This should help the President attain some of his energy goals.

Now, I would like to shift the discussion to Dr. Young who will take up the short-term aspects of the program.

Senator HASKELL. I wonder, Dr. Young, if it would be possible for you to summarize and highlight your paper? The full paper will be part of the hearing record. Would you be able to do that?

Mr. YOUNG. Certainly.

Basically I think that we have attempted to highlight the impacts of the President's program contrasted to the energy conservation act before us now. We reached conclusions similar to other people who have analyzed this policy. We expect to have higher inflation, lower real growth, less real output and less employment under the President's policy.

I think what we would like to point out is that these estimates are uncertain in many cases. The estimates of price impact are more certain than what happens to real output and unemployment, essentially because some of the investment stimulus policies are without historical precedent. The effect on homeowners in terms of insulation, solar heating, and the stimulus to alter energy investment and the subsidies for cogeneration and in the form of alternate energy uses are among the most uncertain.

There are problems of supply, for example, in terms of the productive capacity for coal burning industrial boilers. But in general, although on the uncertain side, the conclusions are similar.

The other point I would like to make is to amplify a bit on Professor Klein's comment about rebating through indirect taxes.

The negative impacts of the economy under the administration's program stem from the failure to maintain real disposable income in the face of higher energy prices. It is possible to consider alternative methods of dealing with refunds and rebates and various taxes which would vitiate this problem.

To illustrate this possibility, we have analyzed one option. There are two problems with which one must deal. The first is to refund tax collections to maintain nominal levels of disposable income and the second is to offset the price increase in fuels related products by a price reduction in other areas so that the real purchasing power of income is maintained.

To explore this avenue we have looked at the possibility of offsetting tax collections under the well-head equalization tax and standby gasoline tax by reducing property taxes. We recognize the administrative and legal difficulties attached to such a step but from an economic point of view it is attractive for several reasons.

First, property taxes, like the proposed energy taxes, are an indirect tax and are part of the consumer's cost of living. Second, one expects that those who have little option to bearing the increased costs of gasoline, for example, those who rely on automobiles for transportation to and from work, are likely to be among those who benefit most from property tax reductions. Finally, a reduction in property taxes by lowering the cost of maintaining a household, stimulates investment in residential structures adding strength to the housing sector.

If property taxes are lowered to offset energy tax collections contemporaneously, it is possible to offset much of the expected decline in GNP under the administration's program; to eliminate much of the increase in price indices and deflators; nearly to maintain real disposable income; and finally because the relative price of energy is higher, to reduce consumer expenditures on fuel-related products by as much as the administration's program.

Senator HASKELL. Thank you, Dr. Young, very much indeed.

Dr. Schink, if you could also summarize your statement?

Mr. SCHINK. I am going to concentrate on the tables at the very end of the paper on pages 6 and 7 which summarize the results under the various approaches. The baseline projection is one which has higher growth than would be considered the standard case by many. This was an intentional construction on our part to simulate a saturation of growth rates consistent with historical experience and to trace the impacts of introducing various energy programs.

Even under the baseline, we are assuming that the ECPA's—Energy Conservation and Production Act's—influence on energy prices, and these prices are rising more rapidly than the overall economy prices. Therefore, you are observing energy consumption growth below historical standards.

We have considered what is called the rapid decontrol alternative, pushing prices, the price of oil and natural gas, up to world levels by 1980. In the case of natural gas, we assume that this price rises to parity on a Btu content basis with oil in 1980, which calls for a tripling of prices; in the case of oil, it would be a doubling of prices above the 1976 level.

Senator HASKELL. Doubling of prices of oil? But to what price? We have several prices.

Mr. SCHINK. The world price.

Senator HASKELL. The world price? Doubling the world price?

Mr. SCHINK. Doubling the domestic price from current levels. The domestic price in 1976 was $8.30. It would be $17.70 or something like that.

Senator HASKELL. That is a relatively modest increase in the world price.

Mr. SCHINK. Yes, sir; 7 percent a year.

I have concentrated the table on the results over the period from 1979 to 1985. The growth rate that you observe in terms of real GNP is comparable to the baseline while the inflation rate is a quarter percent higher per year.

Energy consumption is reduced fairly substantially by 1985, a 4.7 percent reduction in energy consumption vis-a-vis what you accomplished under the baseline.

The Btu tax alternatives consider the imposition of a dollar per million Btu tax on all primary energy sources. This includes nuclear. I have not gotten into that in the paper. It is a huge number in the case of nuclear.

Basically this involves price increases ranging from 40 percent for oil and up to 100 percent for coal which is hit hardest by this tax.

The reason this was considered is that it is a fairly straightforward tax. It considers only one thing: raise the price of energy to discourage its use.

Now, in this context, we considered two ways of rebating it. In both cases, we gave back the rebates on a contemporaneous basis rather than on a delayed basis. In the first case, we give it back in the form of a personal income tax rebate; in the second case, through a property tax rebate.

If you give it back in terms of the personal income tax rebate, the growth rate over the period 1979 to 1985 is roughly comparable to the one obtained in the baseline decontrol case; reducing property taxes leads to a somewhat lower growth.

As I indicate in the paper, there is a shift in the composition of output that can be traced through the system. There is a shift away from demand for manufactured goods generated by this and a reduction in investment and a series of events that lead to the point where, in the terms of the GNP deflator, returning the tax in terms of a property tax rebate does, in fact, offset the inflationary impact on the rate of growth of the GNP deflator while the income tax rebate causes a substantial increase, about .6 percent a year on an average. In terms of energy use, both of these induce a substantial drop in energy consumption.

As I indicate in the paper, I am talking strictly about fossil fuel energy and excluding nuclear energy.

By 1985, energy consumption falls by 5.7 percent with the property tax refund, while with personal tax refund, a 6.7 percent drop occurs.

In the final cases, considering the administration's program, basically the major change which occurs beyond the horizons considered in the short term is the fuel tax on utilities which is due to come in 1983.

The outlook here is for slower growth in the 1980's, 3.6 percent versus 3.8 under the baseline. The situation in 1985 is somewhat worse than that because you have had 3 years of taxes and fairly steady price increases and GNP is the lowest in all of the case considered.

In terms of inflation, over this period the administration program has the highest inflationary rate of all of the programs considered.

This is, in part, because some of the taxes are postponed to the 1980's so you see a more rapid increase. The other programs consider accomplishing most of the inflation by 1980 or before, but the price impacts are more severe. Also, we have assumed the necessity to keep the gasoline consumption in line, to impose the gasoline tax throughout.

Through 1985, the growth rate inflation is 1.5 percent higher than in the baseline, but the growth of energy consumption is reduced dramatically. You achieve a 9.9-percent reduction in fossil fuel energy consumption in this particular case.

There is a more pronounced shift towards nuclear. That explains part of this drop, it is not all conservation. And there is another facet here. The Btu tax in particular put a big penalty on electricity consumption, which the Carter administration program does not.

The Carter program is the most successful of all of the programs in terms of achievement of energy targets. It is also, in some sense, the stiffest in terms of its penalty, in terms of higher inflation and lower growth.

Senator HASKELL. This is the Carter program?

Mr. SCHINK. Yes.

Senator HASKELL. Vis-a-vis one of these other programs?

Mr. SCHINK. One of these other programs that have been talked about in various places, yes.

Senator HASKELL. You say it is the most efficient in inducing conservation but the most expensive in terms of inflation and reducing GNP?

Mr. SCHINK. Yes.

Senator HASKELL. Is that the conclusion of all three of you gentlemen?

Mr. YOUNG. Yes.

Mr. KLEIN. Yes.

Senator HASKELL. Thank you very much. Your paper needs considerable study. You have brought up some new ideas.

Basically your thought is, if you rebate these amounts by reducing some direct expenses of the taxpayers, such as real estate taxes, it would be less inflationary than giving the money back in the form of a credit against income tax?

Mr. KLEIN. That is right. That is the way that we compute our price indexes in this country. We include the indirect taxes as a part.

Senator HASKELL. I do not understand the theory, but then, I am not an economist. Maybe I need a few years of education before I thoroughly understand it.

Could you briefly tell me, Professor Klein—it is hard for a layman to see that if we offset $200 in real estate taxes that the result is any different than giving taxpayers $200 to pay those real estate taxes with.

Mr. KLEIN. The Consumer Price Index includes such taxes. If they are lowered, then the index would be lower.

The other point is that it is more or less a straight offset. The energy program puts some added costs on fuel or energy; the excise tax reduction takes them off, and it is a pretty clear trade.

In the case of having an offset through the personal income tax, it is hard to see where it is going to go on inflation other than to see that

it is going to stimulate consumer real income and purchasing power that may give rise to some inflationary pressure.

It is much cleaner to say you offset the excise tax by another excise tax. As I stated in the paper, we have that precedent going back to discussions of the value of added taxes in 1972 where the primary consideration was to rebate that on residential property taxes.

Senator HASKELL. Thank you gentlemen very much indeed.

Mr. KLEIN. May I ask you, Mr. Chairman, to keep the record open for approximately 2 weeks? We wanted to give a fuller statement.

Senator HASKELL. By all means. The hearing record will stay open for additional submissions by you or any others that wish to do so.

Thank you very much.

[The prepared statement of Messrs. Klein, Young, and Schink, follows. Oral testimony continues on p. 84.]

WHARTON ECONOMETRIC FORECASTING ASSOCIATES, INC. STATEMENT OF LAWRENCE R. KLEIN, RICHARD M. YOUNG, AND GEORGE R. SCHINK

FINANCING THE ENERGY PROGRAM

(Lawrence R. Klein)

In many respects the energy program is an economic program, possibly the most significant in economic content of the programs that have been put forward thus far by the present Administration. Among the many economic implications of the energy program are the impacts on prices, overall economic activity, and public finances. The Wharton Econometric Forecasting Associates have displayed a great deal of energy content in our models of the economy as a whole, giving us a framework for looking at the energy content of economic policies and the economic content of energy policies. In today's presentation, I and my associates will try to put all these aspects together in order to assess the economic implications of alternative ways of financing a national energy program. I shall proceed by describing to you the models, the policies, and the estimated impacts.

First let me describe a general Wharton EFA position on economics of energy. Since 1971 we have been concerned about the problems posed by increasing oil imports—by the rate of increase and the increase in share of total energy requirements covered by oil imports. We first treated this as a physical problem, with grossly inadequate allowances for price increases, but still came up with serious deficit estimates for international trade and payments. These were long-run estimates, but we became deeply involved with short-run energy-related forecases as a result of the 1973–74 embargo, followed by enormous price increases. These latter events led us to predict both national and world recession in November, 1973. At that time, and in the ensuing months, we crystallized the following view:

While our long-term model based forecasts for the U.S. economy generally depicted a 4 percent economy (4 percent real growth, 4 percent unemployment—full employment; 4 percent inflation, and 4 percent *real* interest rate—8 percent nominal less 4 percent inflation). we found that post-1973 long-term projections could not be put in the usual 4 percent track. Our models indicated that if we set policies at levels that tried to reach the old targets, under the new conditions, we tended to generate large undesirable inflation rates and trade deficits. The best that we could achieve in our model projections were real growth rates at about 3.0–3.5%, inflation rates at about 5.0%, and unemployment rates of about 5%. These were associated with eventual trade balances. There was, therefore, slippage in our target for inflation, growth and unemployment. While these may not seem to be large amounts in terms of differential percentage rates, they are

NOTE.—The authors wish to acknowledge the efforts of V. J. Duggal and William Finan who assisted in the interpretation of the Carter Energy Program and developed the longer term simulation results.

applied to a large base and cumulate to very significant economic losses under the influences of the rules of compound interest figured over decades.

Given the magnitude of the recession, short-run recovery rates greatly in excess of 4 percent would be attained and could be factored into long-run energy policies that would contribute to cyclical recovery before 1980 and allow the economy to move towards its pre-1973 path in the 1980s. The resources made available in short-term environment of economic slack could be put to use in a productive way to try to resolve simultaneously our cyclical and secular problems if energy policy were properly dovetailed with overall economic policy.

The models

The primary analytical tool for Wharton EFA's attack on the energy problem is our Annual and Industry Model, consisting of a large input-output sector together with a detailed system of final demand, value-added (factor income payments), price, wage, and interest rate determination. This system is dynamic, non-linear, and numbers about 1,000 equations. The input-output module consists of 63 separate sectors and has a fair amount of energy detail. It gives separate treatment to oil, natural gas, coal, electric utilities and gas utilities. It also identifies large energy intensive sectors such as electric power, cement, aluminum, ferrous metals, and transportation. Final demand is disaggregated so as to estimate such end use items as gasoline and oil consumption, expenditures for household operation services, expenditures for household heating fuels, imports of crude petroleum and other fuels. Final expenditures for capital formation in several energy sectors are also treated in disaggregated form. There are, in all, 67 end use categories.

There are several features of this system that qualify it for dealing with the problems that we are considering today. Apart from having much energy detail and apart from relating physical aspects of the energy situation to functioning of the macro economy, this model treats coefficients in the input-output module (the table of bilateral flows between 63 sectors of the economy) as variable and not as rigidly fixed. The input-output coefficients in this system vary as a result of changes in relative prices. This is particularly important in the present context because since 1973, relative prices in the energy and other sectors have varied enormously, causing shifts in economic behavior. The Wharton Model estimates these shifts as an adaptive time process. This plays an important role in combining technology and economics to obtain the final result of the energy situation in an economic environment and the economic impact of various alternative energy policies.

Wharton EFA maintains another model, known as the Wharton Quarterly Model. It is primarily concerned with interpreting the short-run business cycle situation but has a limited amount of sector detail by industry. The main effects of energy limitations on the supply of goods is first worked out in the large Wharton Annual Model and then translated into results for the short-run model. On the final demand side, the Wharton Quarterly Model has full enough detail to display most of the same energy items in consumer spending and foreign trade—that are developed in the large scale Annual Model. The Quarterly Model has fewer investment categories, however. The Quarterly Model is used to estimate the quarter-by-quarter developments for the next two or three years. It has been stretched for the present investigation to the end of the decade. It is to be used to show more closely the working of the Administration's energy program from an assumed starting date, followed through short-run quarterly movements to get the cyclical impact in the very near term.

The Quarterly Model pays more attention to inventory adjustments, money market conditions, and cost-price fluctuations. The Annual Model is more concerned with details of technology, growth processes, some steady state properties of the economy, and the sector composition of supply. They each shed light on different aspects of energy economic and complement one another.

The policies

Five different simulations constitute the basis of Wharton EFA's assessment of energy and the economy. They are basically designed to throw light on alternative ways of financing energy programs. The titles of the policies are:

1. Slow de-regulation, baseline case.
2. Fast deregulation—a free market by 1980.
3. BTU tax, rebated through offsetting reductions in personal and corporate income taxes.

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4. BTU tax, rebated through offsetting reductions in residential property taxes, indirect taxes.

5. The Carter Program with rebates to business as investment tax credits, to households as investment tax credit, and to households for personal income tax relief.

1. Slow de-regulation implies that it will take more than 10 years to bring US prices all the way up to equivalence with world market prices. This plan of action is assumed to be the policy of the former Ford Administration and relies on existing legislation in place to guide the economy in the energy field for the next several years. This simulation, being essentially a status quo situation, will serve as the baseline case. That does not mean that it is WEFA's forecast in the strict sense; it is only a reference point. Since it is a status quo simulation, it seems to be well suited to the role of a baseline case.

2. If oil and natural gas prices are completely de-regulated, on a steady path, by 1980 we have a case of a free market in energy fuels to contrast with the baseline case. The word "free market" is intended to describe only US domestic fuel pricing, for this cartelized world setting is anything but a "free market." US prices would drift upwards to OPEC prices by 1980, under the conditions of this case, since a number of long-term contracts are presently in force—for natural gas and other fuels. It is assumed that all outstanding contracts will be honored. It is also assumed that the higher energy prices accruing as profits to the private sector will stimulate additional exploration, leading eventually to increased domestic production of oil and natural gas. This increase in domestic supplies allows us to cut back imports correspondingly.

3. A tax on BTU's associated with primary fuels, that amounts to $63 billion now and reaches $81 billion by 1985 would be imposed. Of this amount, 30 percent would be returned to corporations. Personal taxes would be reduced by 50 percent, while 10 percent would be retained by the Federal government and 10 percent would be transferred to state and local governments to offset their higher energy costs.

4. The same kind of BTU tax introduced into simulation 3, is introduced again but the offset in this case is to be mainly indirect rather than direct taxes. The indirect tax selected is the residential property tax collected by State and local governments. A transfer must be introduced (grants-in-aid) from the Federal to the State and local sectors to enable the latter to meet their current obligations.

It seems more logical to rebate an additional indirect tax through another indirect tax. This was, in fact, the approach taken in 1972, when there was extensive discussion of the introduction of VAT offset by corresponding deadlines in residential property tax. The general sales tax could also be used as the rebating medium, but the idea of substituting more house for less energy seems to be particularly attractive, as an offset structure.

The only difference between this simulation and Case 3 is that the 50 percent rebated to the personal sector is in the form of reduced property taxes instead of reduced income taxes.

Since the energy program, through a BTU tax or other similar tax (as we shall see with the Carter energy proposals) tends to be inflationary, our proposal to rebate property taxes tends to be anti-inflationary. Indirect taxes imposed, raise prices, and those cutback should hold prices down. This kind of rebate is thus serving one of our macroeconomic targets.

5. The Carter energy program has many facets. It calls for energy conservation, higher indirect taxes (well-head equalization, gasoline taxes, gas guzzler tax) investment in insulation, investment in solar energy, mandatory use of coal, and other items. It is not specific on the amount to be rebated. We have made the following assumptions for the fifth simulation: investment tax credits would be provided to the household sector for expenditures in insulation and on installation of solar heating systems. Finally, we have assumed that the well-head equalization and gasoline excise tax would be rebated through personal income taxes—a direct tax and transfers.

The impacts

The baseline simulation has some cyclically high growth rates in 1976, 1977, and 1978 but it drops to a 4 percent average for the whole decade to 1986. This aspect of the 4 percent-economy remains, but the other 4 percent targets are not being met, namely unemployment rate, inflation rate, real interest rate, and trade balance. After 1986, however, the real growth rate in an extended baseline case falls to much lower levels, in the neighborhood of 3 percent, but sometimes lower. This is the slow economy that we have consistently found since 1973.

We have not introduced specific employment policies into the baseline case, keeping only policy programs that presently exist and trending public sector fiscal/monetary policies along established historical paths. Consequently, we have fairly high rates of unemployment for the next several years. The good fortune of a demographic slowdown, particularly in labor force growth enables the simulated economy to reach unemployment rates of 4–4.5 percent after 1985. In the results reported here, we are more interested in differential amounts, associated with policy alternatives to the baseline case. Accordingly, we did not seek a simulation path that came closer to announced economic goals of the Administration.

A feature of the Wharton simulations, generally, and this is especially true of long-run simulations to the year 2000, is that the relation between total energy consumption and real GNP is decidedly curvi-linear. There is a falling ratio of energy, measured in Quads (quadrillion BTU's), to real GNP, even though it has been steady up to the 1970's. The reason why this calculated relationship between energy input and real output tends to show a falling ratio in the future is that relative price changes induce shifts in demand. Relative prices play their time-honored economic role. In contrast to some engineering estimates, made on a purely volumetric basis, our estimates and those of other economic models indicate that consumers and industrial users of energy are going to cutback significantly in the face of rising relative prices. This should help the President attain some of his energy goals.

Short-Term Analysis

(Richard M. Young)

I would like to discuss briefly the impact of the Administration's energy program over the first two years of its implementation. If one accepts Administration timing, this would essentially be the period through calendar year 1979.

Our first interest is in evaluating the economic impact of the energy policy contrasted with the outlook for the economy with no new legislation, i.e., assuming that the provisions of the Energy Conservation and Production Act remain in force and are extended beyond their current termination date. A logical breakdown of the impact of the energy proposals separates its effects into those on: (1) prices, (2) final demand and output, and (3) employment and unemployment. This division not only allows us to isolate economic effects but also orders the impacts by the degree of certainty with which one can quantify the economic effects.

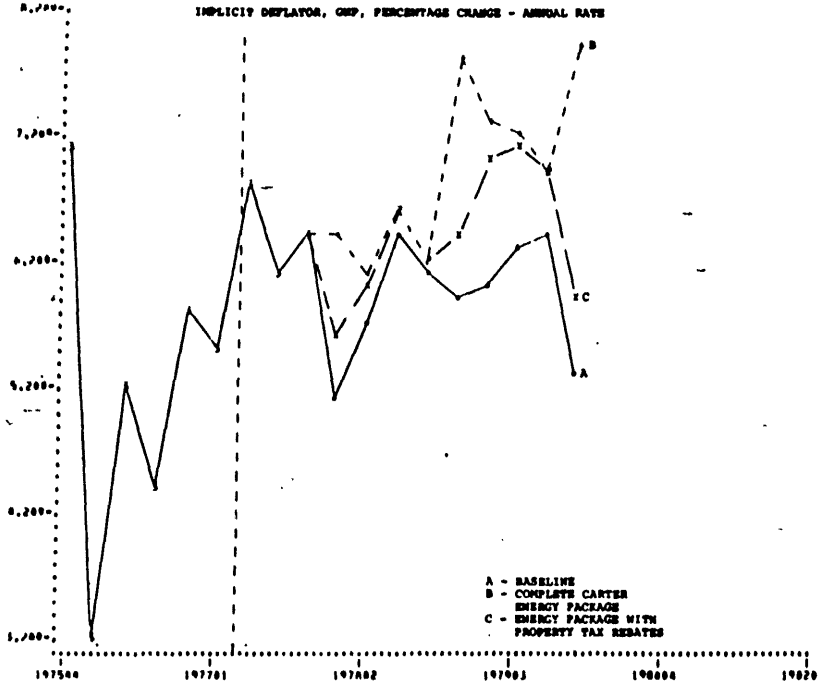
1. PRICES

The most certain and most immediate impact of the energy proposals is on prices. Some of these are easily quantifiable. The initial $3.50 per barrel wellhead equalization tax in 1978; the second increase in this tax in 1979; and the $.05 per gal. initial increase in the Federal excise gasoline tax in 1979 are the most important during the initial phases of the program, and their effects are reasonably straight forward. They are more certain than other parts of the program. In addition to these, however, one must consider the impacts of the industrial users' tax beginning in 1979, the natural gas price changes which would allow the price of new natural gas to rise beginning in 1978 and the impact on the average unit price of automobiles of the fuel inefficiency tax and rebate scheme.

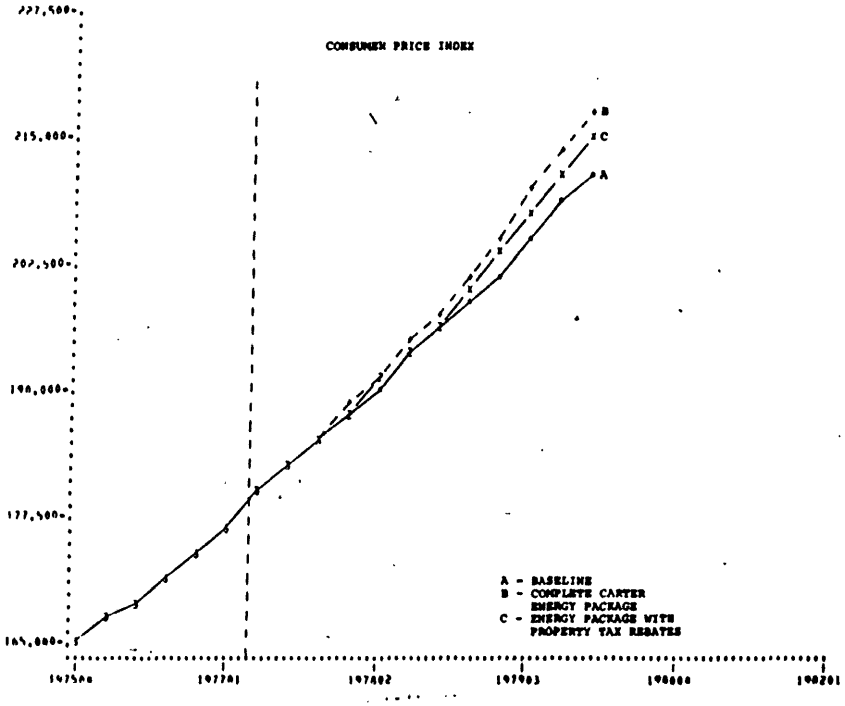
After accounting for these factors, we estimate that from the fourth quarter of 1977 to the fourth quarter of 1979, the GNP implicit deflator would rise about 1.5 percent more under the proposed legislation. In terms of the annual rate of increase in this measure of inflation, the energy package is estimated to raise inflation rates by about 0.4 percent in 1978 and 1 percent in 1979. Increases in the Consumer Price Index and Wholesale Price Index during this period would be greater than in the implicit deflator. The CPI should rise some 2.5 percent more over the entire period with annual rates of increase higher by 0.7 percent in 1978 and 1.4 percent in 1979. The WPI in aggregate increases only about 1.5 percent more but the crude materials component would rise nearly 5 percent more over this two-year period.

At a less aggregative level, the implicit deflator for consumer expenditure on gasoline and oil is likely to rise 45 percent more over this two-year period with a 60 percent increase as opposed to an increase of about 20 percent expected under current legislation.

In terms of short-run dynamics, we estimate that in the first half of 1978 with the imposition of the proposed well-head equalization tax and the increase in natural gas prices annual rates of increase in these price indices would be expected to run from 0.75 percent to 2.5 percent faster than otherwise. As indicated in the accompanying graphs the annual rate of increase in the implicit GNP deflator is higher in every quarter when the energy proposals are compared to current legislation.



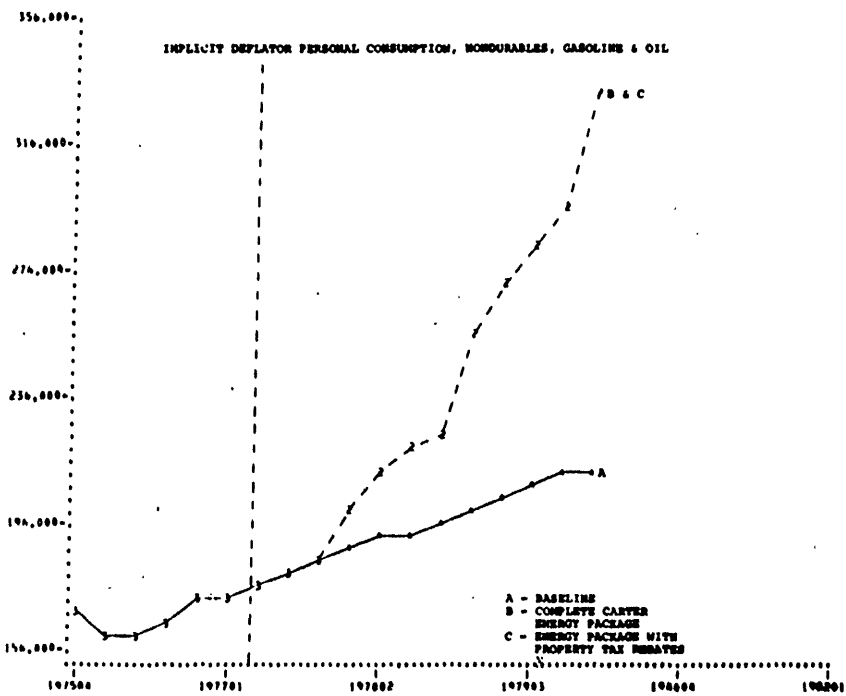
Our view is that these short-run impacts on prices are among the most certain of the effects of the proposed legislation, but we would be remiss if we did not point out the range and causes of the uncertainty attached to our estimates. The estimate of the average increase in the well-head price of crude petroleum due to the equalization tax depends on the estimate of total domestic production and the proportion of the total classified as lower tier. The impact of the revision in natural gas prices depends both on the total amount of gas affected, with the rate of flow of additional gas generated by the higher price being uncertain. In addition, on turning to consumer prices, one must confront the problem of how much of the cost increase generated by these proposals and the industrial user



taxes will be passed along to the consumer. We feel that, if anything, we have perhaps underestimated the amount of "old oil" and natural gas affected but have chosen to assume that the increased costs will be completely passed through to the consumer. Our estimate is that by moving either of these assumptions to what we would regard as an extreme our results could easily be increased or decreased by as much as 50 percent. For example, the actual increment in the GNP implicit deflator from 1977.4 to 1979.4 could vary between 0.5 percent and 2.5 percent.

2. FINAL DEMAND AND OUTPUT

Two effects must be considered in evaluating the impact of the energy proposal on the major demand components in the economy.



1. The impact of the legislation on investment and consumption decisions via a chance in relative prices and taxes.

2. The impact on investment due to the various subsidy programs proposed by the Administration.

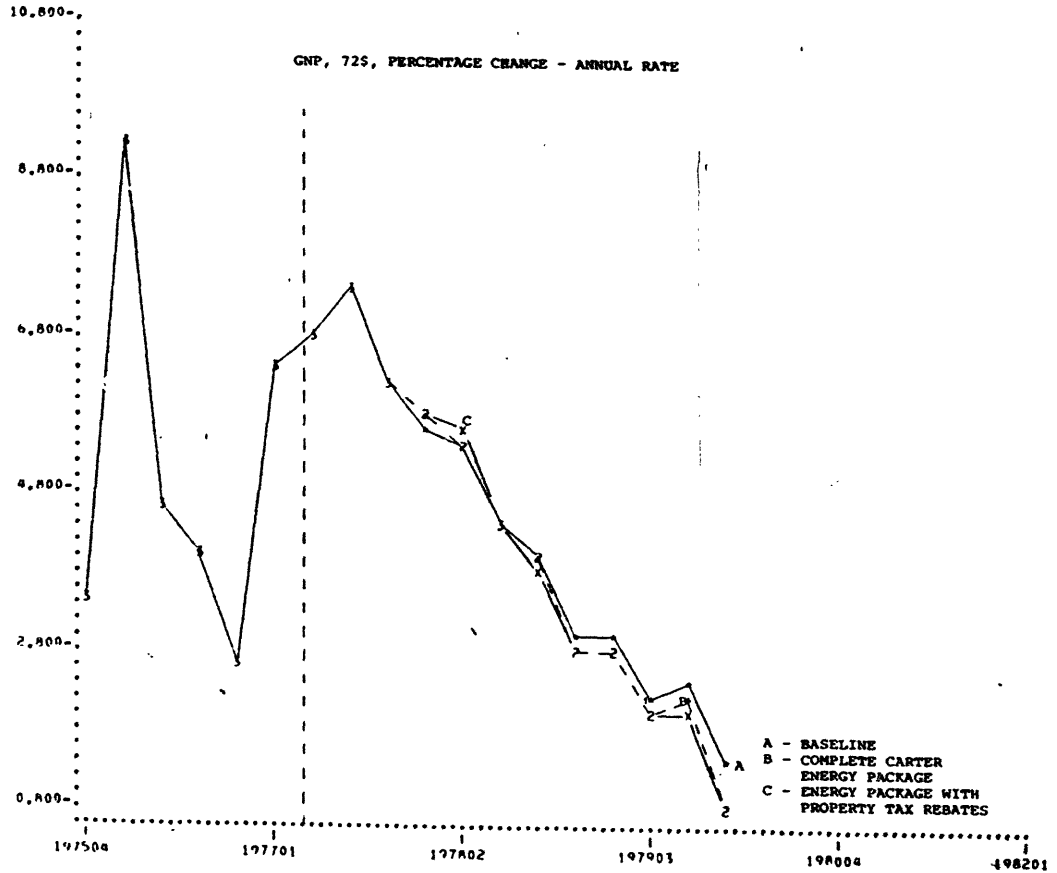
With the Wharton Econometric Models, once we have specified the assumptions discussed above concerning the amount of "old oil" and natural gas affected by the price, the consumption and investment decisions can be predicted by a set of relationships describing firm and household behavior in response to these phenomena. Two points should be made here. In isolation and without the other components of the program, the well-head equalization tax and rebate program would both increase inflation and reduce real growth. Not only is the full nominal value of the taxes not returned but it is returned at a higher price level. Thus, the real income available to the consumer is always less at any point in time under the energy program. We estimate that after all of the effects of the energy proposal are taken into account real disposable income will be $5 to $7 billion lower by the end of 1979 as a result of this policy. This reduces the total level of consumption; but, in addition, the change in relative prices shifts consumption away from goods dependent on petroleum and natural gas. This, of course, is the purpose of the program.

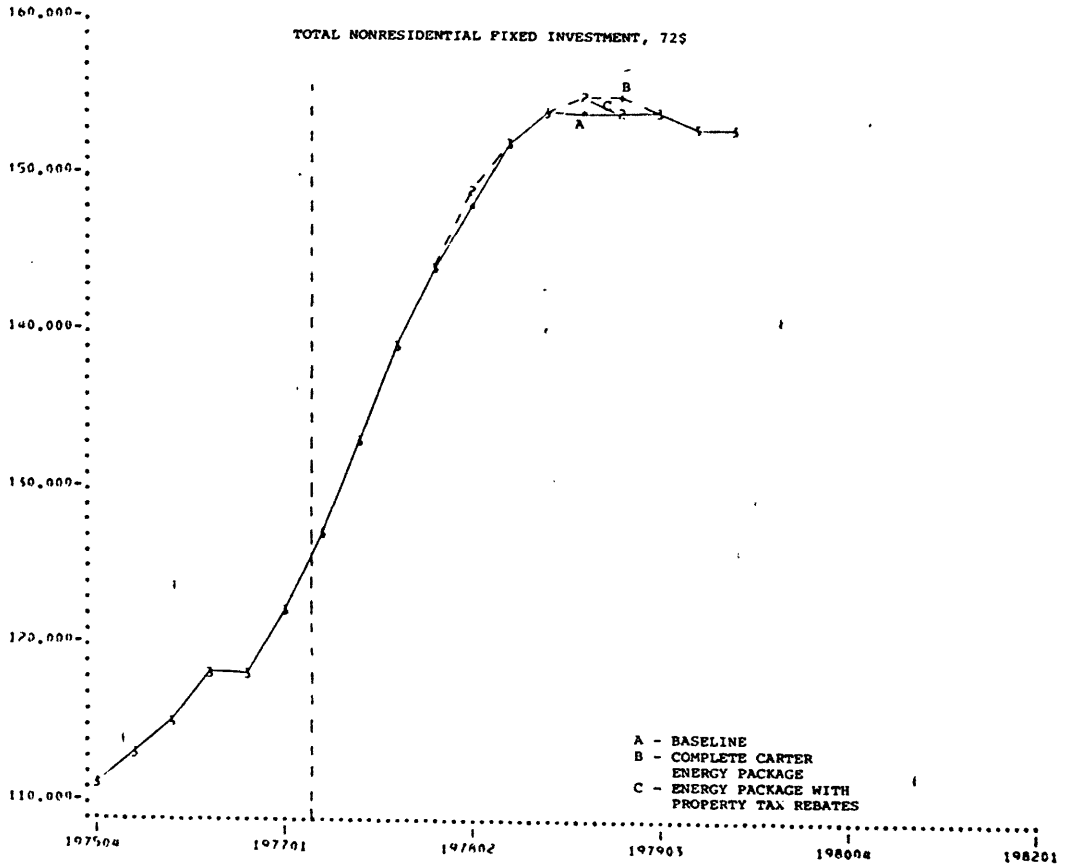
To make up for this decline in consumption, as well as to reduce and shift the composition of energy demand, the Administration has proposed a variety of investment subsidies. Frankly, evaluation of the impact of these proposals is quite difficult given their nature and the lack of historical precedent. While all clearly aim to stimulate investment in the energy area their aggregate impact could be quite negligible because of substitution of this type of investment for another type of expenditure, or because of supply limitations. For example, a consumer might choose to insulate his home as a result of the tax credit but choose not to purchase a new car. On the supply side, one worries about a shortage of capacity for the production of coal-fired boilers for industrial use. The appendix to this section details the assumptions we have made concerning the impacts of the subsidies on investment in various categories. In addition to these, however, there is one other assumption which is crucial to our results concerning the impact of the energy policy in its early stages. We have assumed that government purchases of goods and services remain the same in 1972 dollars whether or not the energy policy is enacted. While this seems a sensible assumption when evaluating long run impacts of policy when one wants to assume that real government policies remain unchanged, it may be very questionable in the short run when budgeting is done in nominal terms. If we had held current dollar purchases constant the economy in aggregate would be much more depressed than our calculations indicate.

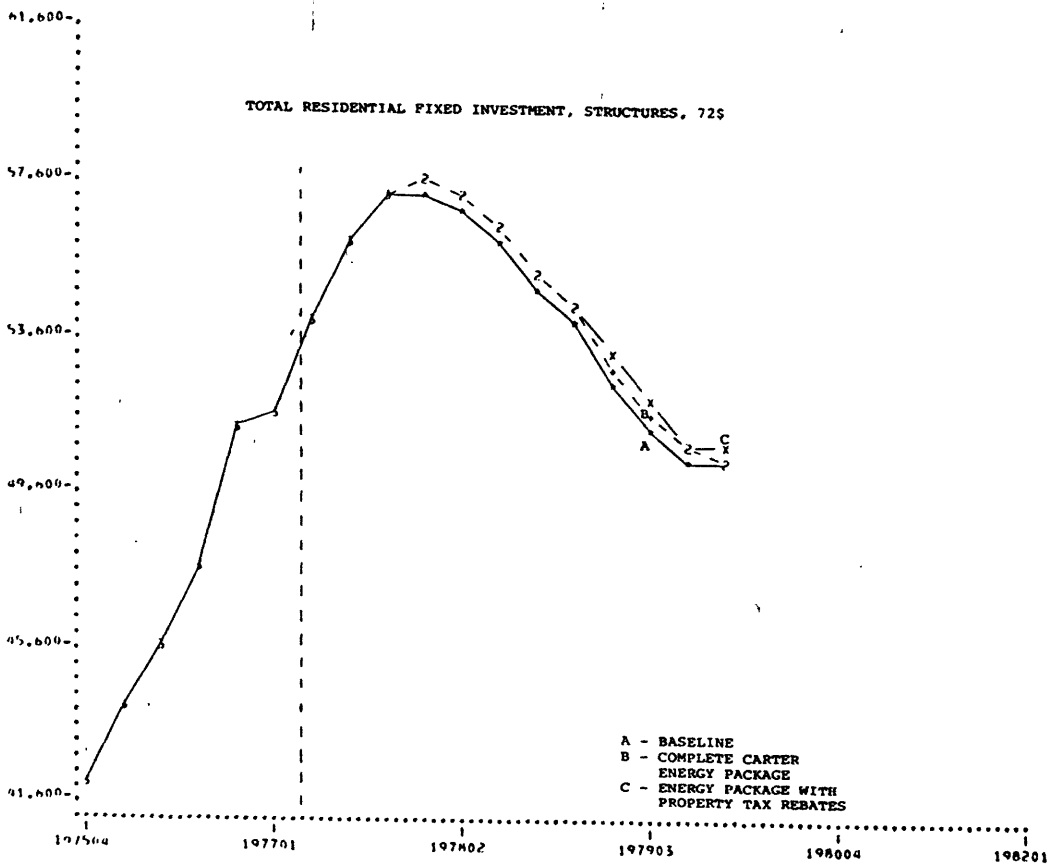
In aggregate, our estimate is that there would be a small but positive effect on constant dollar GNP in 1978, less than $1.0 billion and about a $1 billion reduction in 1979.

As indicated on the graph, the growth in constant dollar GNP remains above the Baseline solution throughout 1978 and only falls below that path early in 1979. The economy tends to respond to changes in relative prices, in this case the relative price of energy, and increases in the aggregate price level with some delay. This is also true of investment decisions in terms of their response to tax and subsidy stimulus but with our assumptions the increase in investment in 1978 more than offsets declines in other areas and not until 1979 does the economy go below the Baseline growth path. As explained above this conclusion is based on the assumption that both Federal and State and local purchases of goods and services are similar in real terms in both solutions. If, in fact, nominal expenditures were not increased in 1978 to cover the increased inflation, constant dollar GNP would begin to decline almost immediately.

By the last quarter of 1979 we estimate constant dollar GNP to be about $2.0 billion lower if the energy proposal is enacted. This is composed of a reduction in constant dollar consumption and net exports offset by higher levels of investment in plant and equipment, residential structures and inventories. The most dramatic fall in consumer expenditures is in gasoline and oil which declines steadily in reaction to higher prices and should be lower by $1.5 billion in 1972 dollars by the end of 1979. In addition, we expect real declines in expenditures on other fuel intensive areas particularly household operating expenses due to higher prices. This reduction in fuel consumption in turn allows for a reduction in fuel imports. However, the net exports position of the U.S. declines in 1978

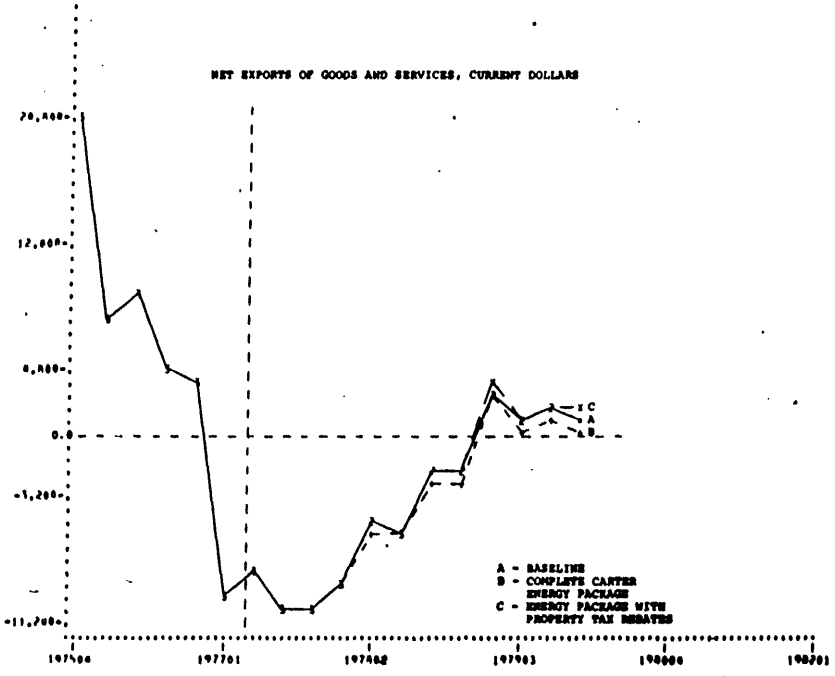

GNP, 72$, PERCENTAGE CHANGE - ANNUAL RATE
10.800
8.800
6.800
4.800
2.800
0.800
197504
197701
197802
197903
198004
198201
A - BASELINE
B - COMPLETE CARTER ENERGY PACKAGE
C - ENERGY PACKAGE WITH PROPERTY TAX REBATES

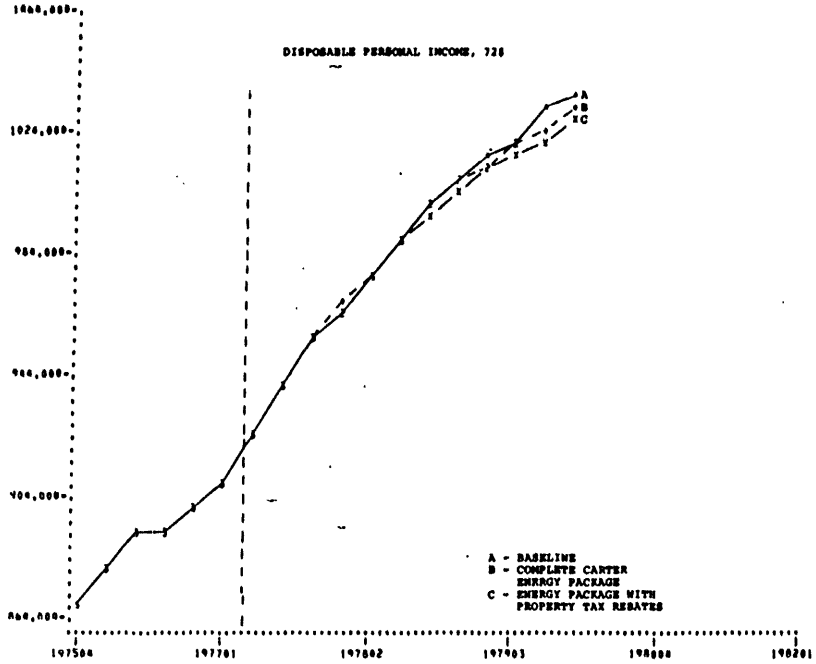

TOTAL NONRESIDENTIAL FIXED INVESTMENT, 72$
160,000
150,000
140,000
130,000
120,000
110,000
197504
197701
197802
197903
198004
198201
A
B
C
A - BASELINE
B - COMPLETE CARTER ENERGY PACKAGE
C - ENERGY PACKAGE WITH PROPERTY TAX REBATES

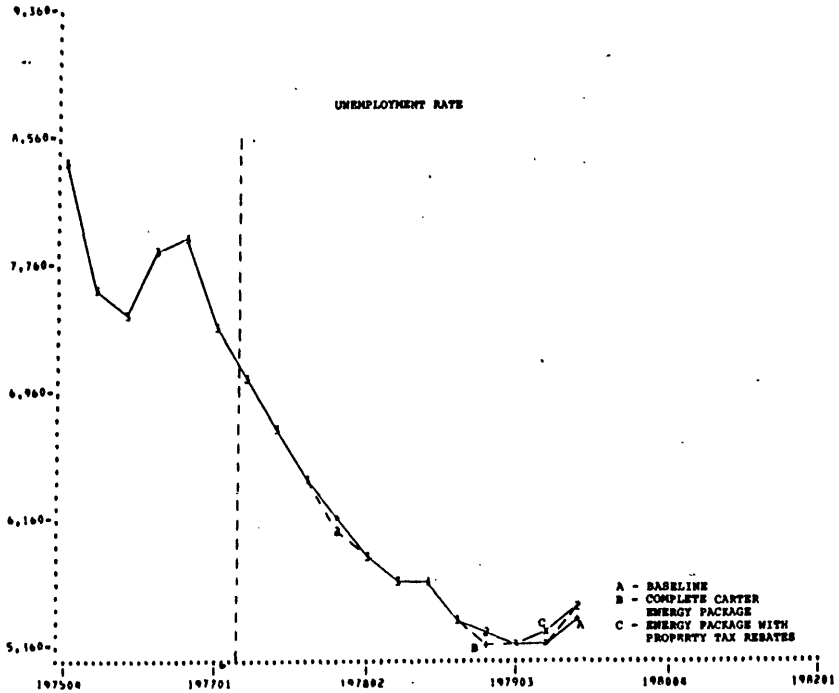

TOTAL RESIDENTIAL FIXED INVESTMENT, STRUCTURES, 72$
61,600
57,600
53,600
49,600
45,600
41,600
197504
197701
197802
197903
198004
198201
A - BASELINE
B - COMPLETE CARTER ENERGY PACKAGE
C - ENERGY PACKAGE WITH PROPERTY TAX REBATES

despite this reduction in fuel imports. This occurs because the rise in domestic inflation rates changes the terms of trade against the United States, inducing greater imports and smaller exports. Net exports are expected to be smaller in both current and constant dollar terms during 1978 and 1979 if the Administration's proposal is enacted.

Total non-residential fixed investment, in real terms, would be expected to be above the Baseline throughout the first 2 years of the proposed policy. Real investment in residential structures, with the stimulus to energy conserving alterations and additions, remains above the Baseline until late 1979 when higher interest rates and lower real disposable income exert enough downward pressure to offset the stimulus. Non-residential investment remains above the Baseline throughout the first two years.




DISPOSABLE PERSONAL INCOME, 72$
1040,000
1020,000
980,000
960,000
940,000
920,000
A
B
C
A - BASELINE
B - COMPLETE CARTER ENERGY PACKAGE
C - ENERGY PACKAGE WITH PROPERTY TAX REBATES
197504
197701
197802
197903
198004
198201


UNEMPLOYMENT RATE
9,360
8,560
7,760
6,960
6,160
5,360
A
B
C
A - BASELINE
B - COMPLETE CARTER ENERGY PACKAGE
C - ENERGY PACKAGE WITH PROPERTY TAX REBATES
197504
197701
197802
197903
198004
198201

Again as I noted earlier, there is a substantial amount of uncertainty concerning the impact of the stimulus to investment contained in the program. There is also considerable uncertainty about the impact of the fuel efficiency tax/rebate scheme on automobile production. (We have estimated an increase in unit sales of about 100,000 for the year 1978 with little change in units thereafter and some reduction in unit value). It is possible with a variety of tenable hypotheses about these effects to conclude, as we have, that in 1978 the program might slightly increase GNP, as a result of a quicker and larger response of investment to the subsidy programs than one gets from consumption response to the higher prices. This could be reversed by declines in real government purchases in which case we would expect declines in constant dollar output ranging from close to zero to $2 billion in 1978 and from $1 to $4 billion in 1979.

3. EMPLOYMENT AND UNEMPLOYMENT

The short-term impacts on output that I have discussed are small relative to an economy running near $1.5 trillion in 1972 dollars. We expect that impacts on total employment would be barely discernible at the aggregate level during the first two years of the energy program with the unemployment rate less than 0.1 percent higher and total civilian employment less than 100,000 lower. The uncertainty here would be similar to that in final demand.

4. ALTERNATIVE REBATING SCHEME

As I stated earlier the negative impacts on the economy under the current program stem largely from the failure to maintain real disposable income in the face of higher energy prices. It is possible to consider alternative methods of dealing with refunds and rebates of the various taxes which would vitiate this program. To illustrate this possibility we have analyzed one option with the Wharton Quarterly Model.

The problem with which one must deal is to offset the price increase in fuels related products by a price reduction in other areas so that the real purchasing power is maintained.

To explore this avenue we have looked at the possibility of off-setting tax collections under the well-head equalization tax and standby gasoline tax by reducing property taxes. We recognize the administrative and legal difficulties attached to such a step but from an economic point of view it is attractive for several reasons. First, property taxes, like the proposed energy taxes, are an indirect tax and are part of the consumer's cost of living. Second, one expects that those who have little option to bearing the increased costs of gasoline, e.g. those who depend on automobiles for transportation to and from work, are likely to be among those who benefit most from property tax reductions. Finally a reduction in property taxes by lowering the cost of maintaining a household, stimulates investment in residential structures adding strength to the housing sector.

If property taxes are lowered only by an amount equal to the amount of taxes rebated against the well-head equalization tax and the increased gasoline tax through the income tax, disposable income in current dollars will not be as large because this also results in a reduction in personal income tax deductions and increases collections. To fully offset the energy taxes, property taxes would have to be reduced by enough more than the energy taxes to keep total collections through the personal income tax, the property tax and the two relevant energy taxes equal to the sum of personal income tax and property tax collections in the Baseline projection. Our primary purpose, however, is to illustrate the impact on prices of this alternative rebating scheme and for the sake of simplicity we have chosen to evaluate the impact of lower property taxes by the same amount Federal income taxes are lowered under the Administration's rebate scheme. To offset the reduction in property taxes an equivalent increase in Federal grants-in-aid is assumed to occur. As indicated by the graphs for the GNP Implicit Deflator and the Consumer Price Index this alternative has a substantial impact on prices compared to the Administration's rebate scheme. The inflation rates are 0.3 to 0.4 percent lower in 1978 and 0.4 to 0.5 percent lower in 1979 when taxes are rebated through property taxes. The mechanism here is that just as the indirect taxes which the Administration proposes to levy on petroleum products increases prices, the property tax, also an indirect business tax, increases prices through its impact on the cost of owning a house. The increase in prices caused by raising one indirect business tax can be offset by lowering another. The property tax has been chosen for illustrative reasons but similar effects could be achieved by lowering sales taxes.

WHARTON MARK 4.5 QUARTERLY MODEL, BASELINE SOLUTION—ECPA, JUNE 15, 1977

[Table 1.00 selected major economic indicators]

Var	Label	Item	1977.1	1977.2	1977.3	1977.4	1978.1	1978.2	1978.3	1978.4	1979.1	1979.2	1977	1978	1979
GNP$	I	Gross national product	1,796.1	1,856.2	1,918.1	1,977.2	2,029.1	2,085.0	2,140.5	2,193.5	2,241.6	2,291.4	1,886.9	2,112.0	2,315.3
GNP$	I	Percent change, GNP	12.21	14.08	14.02	12.90	10.92	11.48	11.08	10.28	9.05	9.19	11.55	11.93	9.62
GNP	I	Real gross national product	1,300.3	1,321.9	1,346.0	1,366.2	1,384.7	1,403.1	1,418.2	1,431.9	1,442.3	1,453.0	1,333.6	1,409.5	1,456.4
GNP	I	Percent change, real GNP	6.36	6.81	7.49	6.13	5.53	5.42	4.39	3.90	2.96	3.00	5.44	5.69	3.33
PDGNP	I	Implicit price deflator	138.1	140.4	142.5	144.7	146.5	148.6	150.9	153.2	155.4	157.7	141.4	149.8	159.0
PDGNP	I	Percent change, implicit GNP	5.51	6.77	6.07	6.38	5.11	5.75	6.41	6.14	5.92	6.02	5.77	5.92	6.10
PC*	B	Percent change, Consumer Price Index	7.25	7.01	6.32	5.49	5.31	5.75	6.60	5.48	6.27	6.21	6.25	5.83	6.18
PW*	B	Percent change, Wholesale Price Index	8.81	10.71	10.48	7.26	5.96	8.54	10.18	4.08	6.84	6.61	7.64	7.93	7.09
YPD$	I	Disposable personal	1,245.8	1,290.7	1,332.8	1,369.7	1,399.9	1,432.8	1,472.4	1,508.4	1,541.1	1,575.9	1,309.7	1,453.4	1,592.6
YPD$	I	Percent change, disposable personal	9.99	15.23	13.68	11.54	9.13	9.74	11.52	10.14	8.95	9.35	10.84	10.97	9.58
YPD	I	Real disposable personal	907.0	925.2	942.0	956.2	965.7	975.8	988.2	999.9	1,007.2	1,015.8	932.6	982.4	1,018.6
YPD	I	Percent change, real disposable personal	3.33	8.29	7.43	6.20	4.02	4.25	5.19	4.79	2.97	3.44	4.71	5.34	3.69
RAXNMPV	I	Private output per man	8.72	8.79	8.86	8.91	8.96	8.99	9.01	9.03	9.04	9.06	8.82	9.00	9.05
RAXNMPV	I	Percent change, private output per man	2.99	3.53	2.83	2.33	2.17	1.75	0.61	0.94	0.41	0.78	2.31	2.01	0.63
WRCPV$	I	Private compensation	6.87	7.04	7.20	7.36	7.55	7.71	7.88	8.04	8.23	8.41	7.12	7.80	8.49
WRCPV$	I	Percent change, private compensation	8.80	10.55	9.35	9.43	10.25	9.19	8.76	8.62	9.77	8.90	8.70	9.51	8.97
IP	B	FRB industrial product index	133.41	136.3	139.4	142.6	145.9	149.2	152.3	155.1	157.7	160.1	138.0	150.6	161
IP	B	Percent change, FRB IP index	5.16	8.82	9.62	9.47	9.42	9.45	8.65	7.50	6.89	6.22	6.30	9.20	6.85
NRUT	I	Unemployment rate (percent)	7.37	7.02	6.75	6.39	6.13	5.94	5.78	5.79	5.54	5.42	6.88	5.91	5.43
TRB$	I	Net exports, current	−9.3	−7.7	−10.8	−10.6	−8.5	−4.9	−5.5	−1.9	−1.2	3.5	−9.6	−5.2	1.5
FMI$	I	Money supply—M1	315.0	322.2	327.8	331.6	333.7	339.0	346.0	353.5	359.0	367.1	324.2	343.0	371.3
FMIS	I	Percent change money supply	4.84	9.54	7.15	4.70	2.51	6.49	8.54	8.99	6.31	9.43	6.55	5.82	8.25
CUWIP	B	Capacity util, total	88.25	88.81	89.67	90.49	91.49	92.43	93.14	93.59	93.90	94.18	89.31	92.66	94.08
CUWIP	B	Percent change, capacity util	1.70	2.56	3.91	3.70	4.48	4.21	3.10	1.95	1.30	1.23	2.01	3.76	1.53
FRMTBSMY	B	3-mo Treasury bill	4.63	4.96	5.48	5.78	5.93	6.45	6.71	7.04	7.12	6.97	5.21	6.53	7.00
FRMFF	B	Federal funds rate	4.66	5.02	5.54	6.01	6.12	6.82	7.25	7.72	7.76	7.68	5.31	6.98	7.74
FRMPRIME	B	Prime rate for large	6.25	6.40	6.82	7.26	7.57	8.03	8.44	8.87	9.13	9.14	6.68	8.23	9.13
FRMCS	B	Moody's total Corp	8.47	8.54	8.59	8.63	8.67	8.73	8.84	8.95	9.03	9.07	8.56	8.80	9.13
YPDSAVR	I	Personal savings rate	4.80	5.35	5.84	6.10	6.06	6.10	6.39	6.59	6.51	6.58	5.52	6.28	6.55
CPUBI$	I	Corporate profits benefits	156.3	161.1	172.2	177.1	182.5	190.9	195.2	191.8	192.6	191.2	166.7	190.1	189.0
GVSURPP$	I	Federal surplus, NIA	−41.3	−51.9	−53.4	−53.5	−50.2	−42.2	−42.0	−45.0	−39.7	−38.6	−50.0	−44.8	−38.2

WHARTON MARK 4.5 QUARTERLY MODEL, COMPLETE CARTER ENERGY PROPOSAL, JUNE 15, 1977

[Table 1.00 selected major economic indicators]

Var	Level	Item	1977.1	1977.2	1977.3	1977.4	1978.1	1978.2	1978.3	1978.4	1979.1	1979.2	1977	1978	1979
GNP$	I	Gross national product	1,796.1	1,856.2	1,918.1	1,977.2	2,036.3	2,094.7	2,151.4	2,205.1	2,262.4	2,318.3	1,186.9	2,121.9	2,343.5
GNP$	I	Percent change, GNP	12.21	14.08	14.02	12.91	12.50	11.97	11.27	10.37	10.80	10.27	11.55	12.45	10.45
GNP	I	Real gross national product	1,300.3	1,321.9	1,346.0	1,366.2	1,385.4	1,404.0	1,419.0	1,432.8	1,442.7	1,452.7	1,333.6	1,410.3	1,455.7
GNP	I	Percent change, real GNP	6.36	6.81	7.49	6.14	5.73	5.49	4.35	3.92	2.81	2.79	5.45	5.75	3.22
PDGNP	I	Implicit price deflator	138.1	140.4	142.5	144.7	147.0	149.2	151.6	153.9	156.8	159.6	141.4	150.4	161.0
PDGNP	I	Percent change, implicit GNP	5.51	6.77	6.07	6.38	6.40	6.14	6.64	6.20	7.77	7.28	5.77	6.35	7.01
PC*	B	Percent change, consumer price index	7.25	7.01	6.32	5.49	6.82	6.58	7.14	5.75	8.91	8.18	6.25	6.45	7.60
PW	B	Percent change, wholesale price index	8.81	10.71	10.48	7.26	9.46	8.81	9.97	3.90	8.54	6.74	7.64	8.82	7.48
YPD$	I	Disposable personal	1,245.8	1,290.7	1,332.8	1,369.7	1,404.3	1,438.0	1,478.1	1,514.2	1,555.1	1,592.1	1,309.8	1,458.6	1,610.1
YPD$	I	Percent change, disposable personal	9.99	15.23	13.68	11.55	10.49	9.96	11.62	10.13	11.26	9.87	10.84	11.37	10.39
YPD	I	Real disposable personal	907.0	925.2	942.0	956.3	966.2	975.4	987.1	998.3	1,006.5	1,012.8	932.6	981.8	1,015.5
YPD	I	Percent change, real disposable personal	3.33	8.29	7.43	6.21	4.24	3.84	4.88	4.62	3.34	2.50	4.71	5.27	3.44
RAXNMPV	I	Private output per man	8.72	8.79	8.86	8.91	8.96	9.00	9.01	9.03	9.04	9.05	8.82	9.00	9.05
RAXNMPV	I	Percent change, private output per man	2.99	3.53	2.83	2.34	2.41	1.67	0.50	0.92	0.39	0.50	2.31	2.04	0.52
WRCPV$	I	Private compensation	6.87	7.04	7.20	7.36	7.56	7.74	7.91	8.08	8.29	8.49	7.12	7.82	8.58
WRCPV$	I	Percent change, private compensation	8.80	10.55	9.35	9.43	10.00	9.87	9.25	8.88	10.69	10.131	8.70	9.85	9.77
IP	B	FRB industrial product index	133.4	136.3	139.4	142.6	146.0	149.5	152.7	155.5	158.2	160.6	138.0	150.9	161.5
IP	B	Percent charged FRB IP index	5.16	8.82	9.62	9.48	9.84	9.78	8.83	7.65	7.13	6.30	6.30	9.40	6.99
NRUT	I	Unemployment rate (percent)	7.37	7.02	6.75	6.39	6.11	5.92	5.75	5.76	5.51	5.39	6.88	5.89	5.41
TBB$	I	Net exports, current	−9.3	−7.7	−10.8	−10.6	−8.9	−5.4	−5.8	−2.1	−2.1	2.8	−9.6	−5.5	0.7
FMI$	I	Money supply— M1	315.0	322.2	327.8	331.6	334.3	339.6	346.7	354.2	360.6	369.1	324.2	343.7	373.4
FMI$	I	Percent change, money supply	4.84	9.54	7.15	4.70	3.24	6.52	8.60	9.00	7.35	9.81	6.55	6.03	8.63
CUWIP	B	Capacity util, total	88.25	88.81	89.67	90.49	91.67	92.68	93.38	93.85	94.22	94.52	89.31	92.89	94.40
CUWIP	B	Percent change, capacity util	1.70	2.56	3.91	3.71	5.30	4.47	3.08	2.04	1.59	1.28	2.01	4.02	1.62
FRMTBSMY	B	3-mo Treasury bill	4.63	4.96	5.48	5.78	5.96	6.50	6.77	7.11	7.24	7.14	5.21	6.59	7.17
FRMPF	B	Federal funds rate	4.66	5.02	5.54	6.01	6.18	6.91	7.36	7.83	7.96	7.95	5.31	7.07	8.02
FRMPRIME	B	Prime rate for large	6.25	6.40	6.82	7.26	7.59	8.08	8.52	8.97	9.27	9.34	6.68	8.29	9.35
FRMCS	B	Moody's total corp	8.47	8.54	8.59	8.63	8.70	8.78	8.90	9.01	9.14	9.22	8.56	8.85	9.29
YPDSAVR	I	Personal savings rate	4.80	5.35	5.84	6.10	6.06	5.99	6.24	6.41	6.37	6.29	5.52	6.17	6.27
CPUBT$	I	Corporate profits benefits	156.3	161.1	172.2	177.1	188.4	195.0	199.5	196.2	199.8	198.5	166.7	194.8	196.3
GVSUPPF$	I	Federal surplus, NIA	−41.3	−51.9	−53.4	−53.4	−48.4	−40.8	−40.8	−43.9	−35.3	−33.6	−50.0	−43.5	−33.8

WHARTON MARK 4.5 QUARTERLY MODEL, CARTER ENERGY PACKAGE WITH PROPERTY TAX REBATES, JUNE 15, 1977

[Table 1.00 selected major economic indicators]

Var	Label	Item	1977.1	1977.2	1977.3	1977.4	1978.1	1978.2	1978.3	1978.4	1979.1	1979.2	1977	1978	1979
GNP$	I	Gross national product	1,796.1	1,856.2	1,918.1	1,977.2	2,032.5	2,090.0	2,146.2	2,199.7	2,249.2	2,303.5	1,886.9	2,117.1	2,328.4
GNP	I	Percent change, GNP	12.21	14.08	14.02	12.91	11.66	11.81	11.20	10.34	9.31	10.02	11.55	12.20	9.98
GNP	I	Real gross national product	1,300.3	1,321.9	1,346.0	1,366.2	1,385.3	1,404.0	1,419.0	1,432.7	1,442.6	1,452.6	1,333.6	1,410.3	1,455.5
PDGNP	I	Percent change, real GNP	6.36	6.81	7.49	6.14	5.72	5.52	4.34	3.91	2.78	2.82	5.45	5.75	3.21
PDGNP	I	Implicit price deflator	138.1	140.4	142.5	144.7	146.7	148.9	151.2	153.5	155.9	158.6	141.4	150.1	160.0
PC*	B	Percent change, implicit GNP	5.51	6.77	6.07	6.38	5.61	5.97	6.57	6.19	6.35	7.00	5.77	6.11	6.57
PW*	B	Percent change, Consumer Price Index	7.25	7.01	6.32	5.49	5.68	6.42	7.09	5.76	6.86	7.93	6.25	6.13	7.03
YPD$	I	Percent change, Wholesale Price Index	8.81	10.71	10.48	7.26	9.45	8.80	9.95	3.88	8.52	6.71	7.64	8.82	7.45
YPD$	I	Disposable personal	1,245.8	1,290.7	1,332.8	1,369.7	1,400.1	1,433.2	1,472.7	1,508.7	1,541.4	1,577.1	1,309.8	1,453.7	1,594.8
YPD	I	Percent change, disposable personal	9.99	15.23	13.68	11.55	9.18	9.78	11.51	10.13	8.96	9.59	10.84	10.99	9.71
YPD	I	Real disposable personal	907.0	925.2	942.0	956.3	965.6	974.8	986.4	997.6	1,004.8	1,011.1	932.6	981.1	1,013.7
RAXNMPV	I	Percent change, real disposable personal	3.33	8.29	7.43	6.21	3.99	3.85	4.84	4.61	2.94	2.51	4.71	5.20	3.32
RAXNMPV	I	Private output per man	8.72	8.79	8.86	8.91	8.96	9.00	9.01	9.03	9.04	9.05	8.82	9.00	9.05
WRCPV$	I	Percent change, private output per man	2.99	3.53	2.83	2.34	2.40	1.70	0.49	0.91	0.38	0.55	2.31	2.04	0.52
WRCPV$	I	Private compensation	6.87	7.04	7.20	7.36	7.55	7.72	7.89	8.06	8.26	8.45	7.12	7.81	8.54
IP	H	Percent change, private compensation	8.80	10.55	9.35	9.43	10.40	9.48	9.09	8.87	10.00	9.50	8.70	9.66	9.40
IP	H	FRB industrial prod index	133.4	136.3	139.4	142.6	146.0	149.5	152.7	155.5	158.2	160.6	138.0	150.9	161.4
NRUT	I	Percent change, FRB IP index	5.16	8.82	9.62	9.48	9.82	9.78	8.81	7.61	7.05	6.25	6.30	9.39	6.94
TBB$	I	Unemployment rate (percent)	7.37	7.02	6.75	6.39	6.12	5.92	5.75	5.76	5.52	5.40	6.88	5.89	5.42
FM1$	I	Net exports, current	−9.3	−7.7	−10.8	−10.6	−8.7	−5.1	−5.6	−1.9	−1.4	3.6	−9.6	−5.3	1.5
FM1$	I	Money supply—M1	315.0	322.2	327.8	331.6	334.0	339.3	346.4	353.9	359.6	368.2	324.2	343.4	372.4
CUWIP	B	Percent change money supply	4.84	9.54	7.15	4.70	2.87	6.54	8.57	8.98	6.67	9.85	6.55	5.93	8.45
CUWIP	B	Capacity util, total	88.25	88.81	89.67	90.49	91.66	92.67	93.37	93.84	94.19	49.49	89.31	92.89	94.35
FRMTB3MY	B	Percent change, capacity util	1.70	2.56	3.91	3.71	5.28	4.48	3.06	2.00	1.51	1.27	2.01	4.01	1.58
FRMFF	B	3-mo treasury bill	4.63	4.96	5.48	5.78	5.93	6.47	6.74	7.08	7.16	7.05	5.21	6.56	7.188
FRMPRIME	B	Federal funds rate	4.66	5.02	5.54	6.01	6.14	6.86	7.31	7.79	7.84	7.81	5.31	7.02	7.88
FRMCS	B	Prime rate for large	6.25	6.40	6.82	7.26	7.57	8.05	8.48	8.92	9.19	9.23	6.68	8.26	9.24
YPDSAVR	I	Moody's total corp	8.47	8.54	8.59	8.63	8.67	8.75	8.87	8.98	9.07	9.14	8.56	8.82	9.21
CPUBT$	I	Personal savings rate	4.80	5.35	5.84	6.10	6.04	5.97	6.22	6.40	6.34	6.26	5.52	6.16	6.25
GVSURPF$	I	Corporate profits repts	156.3	161.1	172.7	177.1	187.2	195.7	200.6	197.5	198.7	201.2	166.7	195.3	198.6
		Federal surplus, NIA	−41.3	−51.9	−53.4	−53.4	−49.1	−40.9	−40.9	−44.0	−36.8	−33.9	−50.0	−43.7	−34.5

See footnotes at end of table.

APPENDIX

ASSUMPTIONS AND ADJUSTMENTS FOR EVALUATING THE ADMINISTRATION'S ENERGY POLICY PROPOSAL[1] FOR THE PERIOD 1977 THROUGH 1979

The items below indicate the assumptions we have made concerning the aspects of the Energy Policy included in our analysis. As indicated in the text a great deal of uncertainty is attached to the impact of much of the proposed legislation.

1. FUEL EFFICIENCY INCENTIVE TAX

Wharton EFA has constructed a very detailed structural model of automobile demand and use. Using this model we have estimated that in response to the schedule of taxes and rebates proposed by the Administration unit sales of automobiles would be increased by approximately 100,000 units in 1978 and would be essentially unchanged beyond that period. There would however be a reduction in the average unit price of automobiles based on a mix change toward smaller automobiles. After allowing for some upgrading of option's expenditures on these units we estimate that the average reduction would be $50. We have assumed that this differential would be maintained in all future periods.

2. RESIDENTIAL ENERGY TAX CREDIT

We have assumed that the tax credit on energy conservation expenditures will the total impact on prices of the Administration's policyincrease residential inent increase residential investment by $250 million in 1972 dollars in calendar year 1978 and $300 million in calendar year 1979. In current dollar terms after allowing for the total impact on prices of the Administration's policy these amount to $435 million and $570 million respectively in these years. Of this total it is assumed $100 million will be credited against taxes in 1979 and $125 million in 1980.

For solar energy investment the additional expenditures in 1972 dollars are assumed to be $100 million in calendar year 1978 and $200 million in calendar year 1979. In current dollars these amount to $175 million and $380 million. The credit claimed against this investment is assumed to amount to $50 million in 1979 and $100 million in 1980.

3. BUSINESS ENERGY TAX CREDIT

To allow for the impact of the increase in the investment tax credit on business energy property we have increased the effective tax credit rate for all industries by a fixed proportion. The implicit assumption here is that those industries with high effective tax credit rates will benefit more than proportionately from this. We have assumed a 5 percent increase in the effective credit in 1978 and 10 percent in 1978. This means, for example, that if the effective investment tax credit rate for an industry was 10 percent in 1977, it would rise to 10.5 percent in 1978 and 11 percent in 1979. These are small increases and are based on the premise that the increase in the tax credit will not result in large investments in business energy property and the fact that this is an average credit spread across all investment.

In addition to the increase in the tax credit we have made specific assumptions concerning investment in cogeneration equipment and alternative energy property in the manufacturing sectors. Investment here is assumed to increase $100 and $120 million dollars in 1978 and 1979 in 1972 dollars. In current dollar terms this amounts to $153 million and $190 million and results in tax credits of approximately $30 million in 1978 and $40 million in 1979.

4. CRUDE OIL EQUALIZATION TAX

Table 1 states the assumptions on which our tax yield calculations are based. As indicated we estimate that tax collections under the provisions of the wellhead tax will yield $3.7 billion in 1978 and $6.3 billion in 1979. We have assumed

[1] All adjustments are in approximate terms. Problems of non-linearities, distributed lags and auto-regressive disturbance terms prohibit exact translations.

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that the full impact of this tax will be passed through to the consumer with the exception of the provision for rebating the tax on home heating oil. Ninety percent of the tax is assumed to be rebated with 85 percent going to persons and 5 percent to business under the home heating oil provision. Of the portion going to persons 80 percent is rebated through reduction in personal income tax withholding and the remainder through transfers to persons.

TABLE 1.—WELL-HEAD EQUALIZATION TAX COLLECTIONS

Base U.S. domestic production (MBD)	Alaskan pipeline (MBD)	Old oil as percent of base U.S. production	Old oil (MBD)	Domestic U.S. production	
				Change in price per barrel	Tax collections (billions)
77.2 7.7	.....	48	3.7	0	0
77.3 7.6	0.6	46	3.5	0	0
77.4 7.5	.6	44	3.3	0	0
78.1 7.5	1.2	42	3.2	$3.50	$4.0
78.2 7.4	1.2	40	3.0	3.50	3.8
78.3 7.4	1.2	38	2.8	3.50	3.5
78.4 7.3	1.2	36	2.6	3.50	3.3
79.1 7.2	1.2	34	2.4	7.64	6.6
79.2 7.1	1.2	32	2.3	7.82	6.5
79.3 7.1	1.2	30	2.1	8.02	6.1
79.4 7.0	1.2	28	2.0	8.22	5.9
80.1 7.0	1.2	26	1.8	10.72	11.8

5. STANDBY GASOLINE TAX

We estimate that an increase of $.05/gal. in the Federal excise tax on gasoline would occur on both January 1, 1979 and January 1, 1980 if the rest of the energy proposal is instituted. We have rebated these tax collections on the same basis as the crude petroleum equalization tax.

6. INDUSTRIAL USER TAXES ON PETROLEUM AND NATURAL GAS

It is assumed that this tax will yield $1.5 billion in 1979 and that the full impact will be passed along to consumers in the form of price increases. This collection represents tax liabilities for use of petroleum and natural gas in excess of investment eligible for credits against the tax.

7. PETROLEUM AND NATURAL GAS PRICING

The classification of new-new oil and new natural gas, as well as the higher price assigned to expiring contracts for natural gas will increase prices in both these areas. The total impact on average prices will depend on the rate of production of both new-new oil and new natural gas as well as the rate of expiration of old natural gas contracts. The final result is uncertain but we have chosen to assume that this will increase the rate of inflation in the implicit deflator for output originating in mining by 0.5 percent in 1978 and 1 percent in 1979.

8. GENERAL ASSUMPTIONS

In order to preserve the assumption that other government programs are unchanged in real terms we have kept constant dollar purchases of government goods and services at the Baseline level and adjusted nominal expenditures to reflect the higher price levels.

LONGER TERM ANALYSIS

(George R. Schink)

While the Administration's proposed energy program has substantial short-run economic impacts, the longer-run implications are more substantial. On the plus side, one does expect significant declines in energy consumption and associated reductions in fuel imports. There are, however, important anticipated negative impacts including higher inflation and slower real growth than would be obtained under the provisions of the Energy Conservation and Production Act. We concentrated on the specific impacts of the Administration's proposal

in the short-term discussion but have elected to consider a number of alternative energy policies in the longer-term analysis because we suspected that the major differences under alternative policies would emerge only after several years. The Appendix to this section presents the details of the energy assumptions underlying the various scenarios.

BASELINE PROJECTION

Before discussing the anticipated implications of the various energy policies, let us consider the nature of the baseline projection. One must bear in mind that the ECPA calls for domestic energy prices to increase at a rate in excess of the overall inflation rate. This combined with an assumed OPEC price rate growth of 7 percent leads to increasing real energy prices, slower than historical growth rates in energy consumption, and modest increases in domestic energy production.

Under the baseline projection, real GNP increases from 1979 to 1985 at an average annual rate of 3.83 percent while the GNP deflator grows at a 5.08 percent rate. The GNP growth rate projection is toward the higher end of the expected range because we have assumed a strongly stimulative Federal government fiscal policy.

Fossil fuel energy consumption (QUADS) is projected to increase by 2.96 percent per year between 1979 and 1985. By 1985, energy consumption is expected to be 91.3 QUADS (10^{15} BTU's) versus 69.0 QUADS in 1976. The ratio of energy consumption to real GNP declines steadily throughout the projection period: from 55.1 in 1976 to 50.55 in 1985.[1] To put these numbers in historical perspective, between 1966 and 1972 energy consumption increased by 3.92 percent per year while the ratio of energy consumed to real GNP increased from 55.4 in 1966 to 58.4 in 1972.

RAPID DECONTROL

Under this alternative projection, domestic crude petroleum prices are raised by 1980 to parity with OPEC prices. This implies that domestic prices will more than double between 1976 and 1980. Similarly, domestic natural gas prices are raised so that they are comparable to crude petroleum prices by 1980 (on a BTU content basis). Since natural gas is currently much cheaper than crude petroleum on a BTU content basis, natural gas prices in 1980 are triple their 1976 levels. Beyond 1980, both domestic crude and natural gas prices are projected to increase at the same rate as OPEC crude prices.

Real GNP growth from 1979 to 1985 is essentially identical to its baseline rate, but the GNP deflator increases by 5.36 percent per year which is 0.24 percent higher than obtained under the baseline projection. As one would expect, corporate profits are higher than in the baseline solution but no special excess profits tax has been introduced.

Energy consumption increases at an annual rate of 2.33 percent per year between 1979 and 1985 under this scenario versus a 2.96 percent rate under the baseline. By 1985, energy consumption is 4.72 percent below the baseline level despite the fact that real GNP in the two scenarios is almost identical; the energy consumption/GNP ratio is 4.6 percent lower under the fast deregulation assumption than was obtained under the slow deregulation assumptions of the baseline scenario.

BTU TAX SCENARIOS

A BTU tax is one of many policy alternatives which has been suggested to limit energy consumption. One advantage of such a tax is that it is simple to administer while a potential disadvantage is that one cannot predict or control its incidence. We have considered a very severe tax in this analysis; namely, a $1.0 per million BTU tax on all primary fuels starting in 1977. Since the BTU content of fuels varies substantially, the percentage increase in prices implied by the $1.0 per million BTU tax differs. In 1977, the tax generates a 47 percent increase in the crude petroleum price, an 81 percent increase in natural gas prices, and a 135 percent increase in coal prices.

As one would suspect, such large increases in primary fuel prices generate strong inflationary impacts on the economy as well as producing very large increases in government revenues. We have considered two alternative means of redistributing these tax revenues. In both cases, corporations receive 30 percent

[1] The ratio is scaled by 1,000.

of tax collections in the form of reduced taxes, the Federal government retains 10 percent, the state and local governments receive 10 percent, and the remaining 50 percent is returned to individuals. The difference between the two cases lies in the method used to return the 50 percent to individuals. In the first case, Federal personal income taxes are reduced while in the second case state and local property taxes are reduced. The latter case requires that state and local governments be reimbursed by the Federal government for the loss in property tax revenue. We have assumed that the property tax decrease will result in an equivalent reduction in the price of housing services. The strategy of compensating for the increase in a regressive tax (such as the property tax) was considered during the early 1970's in conjunction with the VAT tax proposals. As one would expect, offsetting the regressive energy tax with a reduction in property taxes reduces the overall inflation rate to approximately the same rate as obtained in the baseline.

Between 1979 and 1985, real growth with the BTU tax returned to individuals via a personal income tax reduction is approximately equal to the rate obtained in the baseline case while the average annual inflation rate is 0.61 percent higher. When the BTU tax is returned via a property tax reduction, real growth is 0.41 percent per year less while the rate of inflation is essentially identical to that obtained under the baseline projection. The lower real growth when property taxes are reduced is due to a shift in the composition of final demand. To illustrate, when personal taxes are reduced, between 1979 and 1985 manufacturing output increases by 4.81 percent per year, and grows by only 4.09 percent per year when property taxes are cut.

Given the very large increases in primary fuel prices, energy consumption growth is slowed substantially. If the BTU tax is returned to individuals via a personal tax cut, by 1985 the ratio of energy consumed to real GNP is reduced by 4.88 percent. If property taxes are reduced, by 1985 this rate is 5.52 percent below its baseline value.

THE ADMINISTRATION POLICY

Assessing the probable economic impacts of the Administration's proposed energy policy is a much more difficult task than assessing the impacts of either rapid deregulation or a BTU tax. The President, in his attempt to spread the burden of higher energy prices in an equitable fashion among all economic groups, has put forth a program with many facets. While the President has explained carefully the intent of each program component, one often is unable to see how the stated intent will be realized.

The Carter proposals are aimed primarily at achieving a reduction in energy consumption through a combination of taxes designed to increase the price of energy and tax incentives designed to encourage the installation of energy saving capital equipment. The former taxes, while complicated, are the easiest to evaluate in terms of their probable economic impacts. The tax incentives are much more difficult to evaluate. Consider just a few examples. The personal tax credit for installation of insulation and/or storm windows will increase spending in these areas but will it be at the expense of other consumer spending? The net increase in consumer outlays as a result will almost certainly be less than the expected amount of new spending in these areas but should induce some net increase in consumer spending. The resulting range of uncertainty, however, is quite large. Finally, given that a number of households take advantage of the tax credit and install more insulation and storm windows, as a result will they consume less heating oil and natural gas or will they consume about the same amount and keep their homes warmer? Other problems with this and other incentives center around the ability to expand capacity by the industries which produce insulation, solar heating devices, and coal fired boilers.

The general conclusions reached in the context of the WEFA Quarterly Model concerning the overall impacts through 1979 of the Administration's energy proposal carry over into the 1980's; namely, higher inflation and lower real growth. Inflation is given additional impetus and real growth is further retarded by the utility fuel taxes due to start in 1983.

Real GNP recovers slightly during 1980 from the slump in 1979 as a result of additional investment in the utilities sector. Beyond 1980, however, real growth is slower than was obtained under the baseline; the average growth rate from 1979 to 1985 is 3.6 percent under the Carter program versus 3.8 percent under

the baseline. By 1985, real GNP is $27.8 billion 1972$ below is projected baseline level (or 1.6 percent).

The inflationary impacts of the Carter Program during the early 1980's are substantial. Under the baseline projection, the average annual inflation rate was 5.1 percent while, under the Carter Program, this rate climbs to 5.9 percent. Inflation under the Carter Program is fueled by the continuing $0.05 per gallon tax increase due to the standby gasoline tax and the utility use taxes on oil and natural gas which begin in 1983.

This higher inflation/slower growth picture is reflected in all sectors of the economy. By 1985, real disposable income is 1.4 percent below its baseline value and 950,000 fewer people are employed. On the brighter side, the worst appears to be over by 1985 as the real growth rate appears to be increasing towards its baseline rate.

The Carter Program does appear to be successful in reducing the growth in energy consumption. Under the baseline, energy consumption grew from 1979 to 1985 at an annual rate of 3 percent while, under the Carter Program, this growth rate is only 2.5 percent per year. The reduction in the growth rate of electric energy consumption is even more pronounced. Under the Carter program electricity consumption increases from 1979 to 1985 at an average annual rate of 3.8 percent versus a 4.7 percent rate under the baseline assumptions. By 1985, total energy consumption is 2.6 percent below its baseline level and electricity consumption is lowered by 5.9 percent. The ratio of energy consumed to real GNP is 1 percent below its baseline level.

OVERVIEW OF THE ALTERNATIVE POLICIES

The two following tables summarize for key indicators the relative rates of growth under the various projections and the differences in these indicators—both in absolute and percentage terms—under various energy policy alternatives versus the baseline projection. Let us concentrate on the latter table. By 1985, the Administration proposal leads to the largest reduction in real GNP and the second largest increase in the GNP deflator—the BTU tax retained via a personal tax act has a stronger inflationary impact. The Administration's proposal is the least successful in reducing energy consumption—both in absolute terms and as a ratio to real GNP. The rate of growth of energy consumption, however, is low at the end of the simulation period which suggests its standing would improve over a longer period.

The conclusions stated above concerning the relative effectiveness of the Administration's proposed energy program are subject to substantial uncertainty. As was discussed above, the Carter Program is very complex and the potential impacts of the tax incentive components are difficult to evaluate. One could under a believable set of assumptions, reach the conclusion that the energy savings resulting from the Carter Program were twice as large as calculated here. Further, under equally tenable assumptions, one could conclude that the adverse growth impacts were substantially less than projected in our simulations.

COMPARISON OF AVERAGE ANNUAL PERCENTAGE GROWTH RATES: 1979-85

	Baseline	Rapid decontrol	Btu tax—includes tax rebate	Btu tax—property tax rebate	Administration program
Real GNP	3.83	3.83	3.82	3.42	3.59
GNP deflator	5.08	5.36	5.69	5.04	5.93
Real disposable income	4.11	4.09	4.10	3.85	3.87
Employment	1.55	1.55	1.45	1.35	1.42
Manufacturing output	4.70	4.74	4.81	4.09	4.38
Business fixed investments	6.37	6.47	5.99	5.31	5.62
Energy conservation (QUADS)	2.96	2.33	2.83	2.38	2.51
Electricity conservation	4.70	4.61	5.22	5.39	3.75
Corporate profits	10.42	11.27	10.40	9.20	9.87
Wage bill	8.50	8.75	9.32	8.14	9.10

COMPARISON OF SELECTED INDICATORS: ALTERNATIVE SCENARIOS VERSUS BASELINE FOR 1980 AND 1985

	Year	Rapid decontrol		Btu tax—personal income		Btu tax—property tax		Administration policy	
		Difference	Percent difference	Difference	Percent difference	Difference	Percent difference	Difference	Percent difference
Real GNP (billions of 1972 dollars)	1980	−2.9	−0.19	−18.0	−1.21	−16.9	−1.13	−0.1	−0.01
	1985	−1.1	−.06	−13.3	−.74	−23.8	−1.32	−27.8	−1.55
GNP deflator (index: 1972=100)	1980	1.7	1.02	10.4	6.22	−.3	−.18	1.8	1.08
	1985	4.5	2.11	18.5	8.69	−1.6	−.75	11.5	5.39
Real disposable income (billions of 1972 dollars)	1980	−4.0	−.38	1.1	.10	−3.4	−.32	4.8	.45
	1985	−4.4	−.34	4.7	.36	−8.4	−.65	−18.5	−1.43
Employment (millions)	1980	−.06	−.06	−.47	−.49	−.29	−.30	−.03	−.03
	1985	−.05	−.05	−.88	−.85	−1.08	−1.04	−.95	−.92
Energy conservation (QUADS)	1980	−1.9	−2.56	−4.2	−5.67	−4.4	−5.94	−1.1	−1.42
	1985	−4.0	−4.72	−4.8	−5.67	−5.7	−6.73	−2.3	−2.60
Electricity conservation (billions of kilowatt hours)	1980	−34.7	−1.22	−449.1	−15.81	−493.5	−17.37	−39.6	−1.39
	1985	−47.9	−1.31	−505.0	−13.84	−518.6	−14.21	−215.5	−5.90
Nominal trade balance (billions of dollars)	1980	9.3	----------	15.8	----------	4.4	----------	−1.8	----------
	1985	17.1	----------	34.9	----------	3.3	----------	3.2	----------
Federal deficit (billions of dollars)	1980	−3.5	----------	5.5	----------	4.2	----------	−.9	----------
	1985	−9.1	----------	.6	----------	17.3	----------	−.1	----------
QUADS to GNP ratio (ratio × 1,000)	1980	−1.1	−2.22	−2.2	−4.44	−2.4	−4.84	−.7	−1.35
	1985	−2.1	−4.46	−2.3	−4.88	−2.6	−5.52	−.5	−1.02

On the other hand, our conclusions concerning the relative impacts of the other higher price of energy scenarios are subject to substantially less uncertainty due in large part to their simplicity. Simplicity in and of itself is not a good reason for adopting one policy versus another. One must bear in mind, however, the simple fact that to discourage the use of energy in a free market economy—that is without resorting to some form of rationing—one must raise the price of energy. This can be accomplished by decontrol and/or some form of energy tax without resorting to a complex program.

In terms of redressing inequities, some inequitable treatment of industries is required if one is to accomplish the goal of reducing energy consumption; namely, industries requiring large amounts of energy to produce their products will suffer ultimately a loss in market share. The best that can be done for these industries is to offer special tax incentives to encourage them to invest in more energy efficient processes and possibly offer them short-run tax relief while they attempt to convert to this more efficient equipment. Consumer inequity could be redressed through a combination of personal tax reductions and increases on transfer payments. Since the higher energy prices will put the heaviest burden on low to middle income taxpayers, the tax reductions should be aimed at giving this group the largest relief. Finally, any energy program should have flexibility to redress inequities that become apparent after energy prices increase.

Clearly many of the tax incentive components of the Carter Program have merit. The tax credits for residential conservation investment have a potential for reducing energy consumption but, given the uncertainty surrounding their potential effectiveness, should not be relied upon to accomplish a large reduction on energy consumption. Similarly, the various investment incentive offered to industrial companies and utilities can contribute to a reduction in total energy consumption as well as encouraging greater use of coal. One must be careful, however, to realize that the only sure way to reduce energy consumption substantially is to raise the price of energy substantially.

APPENDIX

ENERGY RELATED ASSUMPTIONS UNDERLYING THE VARIOUS GROUPS

BASELINE PROJECTION: SLOW DEREGULATION SCENARIO

The price of imported crude is assumed to grow at an annual rate of 7 percent. The price of domestic crude is in accordance with the ECPA regulations for the first two years. Beyond June 1979, the price of domestic crude is assumed to increase at 6 percent a year. This pattern of domestic price growth is assumed to yield domestic production that will fall short of total demand by an increasing percentage (46 percent in 1977 rising to 60 percent in 1985). The price of coal is assumed to grow at a rate equal to one-half the growth of the composite price of crude oil. The growth rate in the price of coal varies between 3.5 and 5.9 percent. The price of natural gas increases at the rate of 5 percent per year following the average inflation rate.

FAST DEREGULATION SCENARIO

The domestic well-head price of crude petroleum is assumed to increase at a constant rate 22.7 percent a year between 1978 and 1980. This rate of growth brings domestic crude prices in line with the assumed level of imported crude prices by 1980. The coal price is again allowed to grow at one-half the rate of growth of the composite price of crude; about 7 percent per year between 1979 and 1980. Beyond 1980, prices of crude oil and coal grow at 7 percent and 8.5 percent per year respectively.

Deregulation of natural gas is interpreted as the attainment of BTU parity between natural gas and crude petroleum prices by 1980. In order to achieve BTU parity, the price of natural gas has to reach $3.05 per MCF by 1980. This implies an annual increase of 20.4 percent. Beyond 1980 the natural gas price is assumed to increase by 7 percent per year. The deregulated price is assumed to affect only new contracts. The existing long term contracts which have been made by natural gas producers are allowed to continue at contracted prices. Assuming that new contracts are 5 percent of existing contracts at any point in time, the deregulated price of natural gas affects only 45 percent of all con-

tracts by 1985. As such, the average price of natural gas is $1.51 less than the deregulated price by 1985. The annual growth rate of the average price of natural gas varies between 11 percent and 16 percent.

BTU TAX SCENARIOS

These scenarios study the impact of a dollar per million BTU tax on all primary fuels. With the BTU tax, the price of a barrel of crude oil increases from its baseline level by $5.80 because a barrel of oil contains 5.8 million BTU's. The immediate increase in the price of oil over the value assumed in the baseline is 47 percent. Since the tax is calculated on a physical unit basis, the tax becomes a smaller percentage of the baseline price over time. Natural gas is cheaper on a BTU unit basis, and, as a result, the BTU tax represents a larger percentage of the baseline price (81 percent the first year). The fuel impacted hardest by the tax is coal. A dollar per million BTU tax increases the price of coal initially by 135 percent. Thus, a tax of this magnitude implies more than doubling of certain energy prices. This tax implies tax collections at the outset of $60 billion.

ADMINISTRATION ENERGY POLICY SCENARIO: 1980-85

Since the various components of the Administration's program were discussed at some length in the appendix to the previous section, we will not present as elaborate an explanation. Through 1979, we have used the same assumptions as were used in preparing the short-run analysis.

We have assumed that the residential energy tax credit will generate new spending of approximately $300 million in 1972 dollars per year from 1980 to 1985 which is the same amount anticipated for 1979. Credits for investment in co-generation equipment and alternative energy property by the manufacturing sectors are expected to result in $130 million 1972 dollars investment per year from 1980 to 1985.

The well-head equalization tax is expected to keep the average cost of crude oil 20 percent above the baseline projections each year from 1980 to 1985. The tax yield from this tax peaks at $18.6 billion in 1980 and declines, by 1985, to $14.1 billion. These taxes are returned in the same proportions outlined in the discussion of the short run assumptions.

The industrial use tax on petroleum increases the effective price of petroleum of 5.4 percent above that obtained under the provisions of the well-head equalization tax in 1980. This impact increases to 7 percent by 1985. The industrial use tax on natural gas increases its price by approximately 50 percent above the baseline path each year from 1980 to 1985.

The utilities use tax on oil and natural gas, slated to begin in 1983, raises the price of petroleum faced by utilities by 7 percent above that obtained with the well-head equalization tax aid raises the price of natural gas faced by utilities by 30 percent above the baseline. Electric utilities investment is expected to increase above its baseline path by $100 million in 1972 dollars in 1982 increasing by 1985 to approximately $500 million 1972 dollars.

The $0.05 per gallon increase in the standby gasoline tax would be invoked each year from 1979 to 1985. This tax is the most effective component of the entire Carter package in reducing energy consumption but appears to be the least likely to be enacted. The tax collections under this tax are rebated in the same manner as are the tax collections under the well-head equalization tax.

Senator HASKELL. Our next witness is Dr. Jack Carlson, vice president and chief economist, U.S. Chamber of Commerce.

STATEMENT OF JACK CARLSON, VICE PRESIDENT AND CHIEF ECONOMIST, CHAMBER OF COMMERCE OF THE UNITED STATES

Mr. CARLSON. Thank you very much, Senator Haskell. It is a pleasure to appear before your committee. If I may just insert my statement in the record I will summarize. Let me just summarize some of the facts.

My point of view has gone through 1985 and 1990 instead of concentrating on the 1980–82 time period.

If you would look at the full implementation of the President's taxes, you are talking about $783 billion through 1990 or $13,000 for each family in this country. If you were to eliminate the gasoline tax and the gasoline guzzler tax it would be $285 billion, or nearly $5,000 per family. This is the largest tax increase during peacetime we have had in the Republic.

If you were to hold Federal taxes from other sources and Federal spending on other programs to 21 percent of GNP, the proposed taxes and spending would increase the size of the Federal Government to 25 percent of the GNP.

Dr. Thurow was correct that the withdrawing of funds from consumers is highly regressive. Over two-thirds of the funds would come from the lower half of income receivers. Only one-third would come from the top half of income receivers.

Whether this turns out to be net regressive depends on how the rebate works and how much is siphoned off into other programs, into business incentives, et cetera.

There is, unfortunately, a rollback in producer prices that would be the case during this time period for intrastate natural gas which would be above the $1.75 adjusted for inflation rate, the price for natural gas. Consequently, the program does entail a rollback on the producers side of natural gas.

Also, it does entail a rollback on the crued oil side, because, under existing policy you have a 10 percent adjustment that would include all prices and say 6 percent or 7 percent of that turns out to be inflation. So there is a real increase of maybe 3 percent potentially under existing programs, as shown in my formal statement.

So when you go to a program that only adjusts for inflation, it does not have this higher adjustment potential. With adjustment only for inflation you have the rollback of crude oil prices that you have in the administration program.

The estimates that we come out with are comparable, but differently derived, than the Congressional Budget Office. We think that the President's program can achieve a potential reduction of imports of 3.6 million barrels a day. However, this assumes that the 250 fossil fuel fire and electric powerplants under construction come on line between now and 1985, and will, in fact, satisfy the more stringent provisions of amendments to the Clean Air Act, in particular, H.R. 4151, S. 252, and S. 253.

Apparently, from our estimates, 41 of these electric powerplants could not qualify. That would affect the electric power sources of 23 million people. Some 30 other plants, affecting 15 million people, would not qualify under the nondegradation requirements.

The administration has been asked to assess what the impact will be so we can have that information before the Congress. I have found that legislation will, in fact, preclude the shifting of coal, which is paramount to the President's program.

We think the administration's energy plan shows a slowing of the growth of energy consumption from 3.3 percent during this time period down to 2.4 percent. However, the administration's plan turns sour

after 1985 when it leads to less improvement until 1990 when existing policy would be better than the entire plan.

We would have more improvement in energy situations under existing policies by 1990 as contrasted to fully implementing the President's program.

Senator HASKELL. How does that turn out?

Mr. CARLSON. You would actually have higher prices in the case of natural gas and higher prices of crude oil under existing programs.

Senator HASKELL. Because of the increase?

Mr. CARLSON. Yes. On the natural gas side, certainly all the intrastate natural gas.

Senator HASKELL. Are we making any assumptions on that with respect to the world price, OPEC price?

Mr. CARLSON. On the analysis that I have taken, I have kept the real price at the current level, roughly $13.50. Obviously, if you had a higher level, it would make the administration's energy plan worse. The status quo would actually bring the improvement down to, instead of 1990, maybe to 1987 or 1985.

If, in fact, you are talking about a higher international crude oil price, our analylsis is not too different than that expressed by others. We find that full implementation of the administration program would cause 2.5 to 3 percent higher consumer prices. That is a changed price level. I see a loss of 1.7 million jobs by 1985. That tends to be a little higher than most other people's estimates.

Spendable family income would be $1,300 lower, and GNP would be at a level 2.5 percent lower than it would otherwise be under existing policies.

Importantly, full implementation of the administration's program would cause business fixed investment to be 4 percent, or $12 billion lower by 1985. These are all backed up by our analysis that one can check with our estimates, but they seem to be reasonable.

One issue here, one I know you are particularly concerned with, is that 10 percent of our current production of energy resources is coming from a land area that has 50 percent of the endowment of resources and reserves. That is on the public lands. So in many ways our public lands policies are withholding energy supply for the future. We have the peculiar situation that, in fact, we can get energy from abroad at a higher price, but we cannot get energy from our own public lands at any price. And that goes into the moratorium on leasing of coal lands, goes to the withdrawal of land from energy development and from mineral explorations, and some additional lockouts in the four systems in Alaska that are being considered under the Native Claims Act of which I know you are very aware.

So I do think we have Federal land use policy that must be brought in line with the President's energy objectives.

As an alternative, a far simpler, safer, less painful approach is available. Let me share one.

For example, the Federal Government could just increase by a very small amount—a 6 percent increase on the world price of crude oil and natural gas through 1985. This would take you up to the current world price of $13.50 a barrel and the energy improvement from both conservation and production, not just the heavy emphasis that the

administration places on conservation, but also by encouraging production, would improve the situation 4.2 million barrels a day as opposed to 3.6 in the President's program.

This would go on in 1990 when the President's policy would be back to zero. It would be very much a permanent improvement and would require only a modest increase in prices that would be politically acceptable.

A 6 percent real increase is all we are talking about in order to have a complete replacement of the President's program. To give you some idea of the impact of this approach on the economy, inflation under the administration's approach would be 2.4 percent. Under the 6 percent allowance, the price increase would be just 1 percent. The administration's program would cause the loss of 1.7 million jobs; under this program, there would be a slight gain.

The administration's program would cause spendable family income to be $1,300 down; there would be a breakeven under this approach.

What is also very important, there would be a tremendous difference in investment. Investment would be $12 billion less by 1985 under the administration's program. It would be $12 billion more under the approach where you allow the price to go up and encourage both production and conservation.

Every State in the Union would be better off in contrast to the administration's program. Just in the case of your State, you would expect Federal taxes under the administration's program per capita to be $296. Under this alternative I am suggesting, you would have receipts $93 higher on a per capita basis in Colorado. That would be going into investment that would be job creating. Energy improvement in terms of the State of Colorado's contribution would be 38,000 barrels per day. In the case of this alternative approach in employment, you can expect to lose 23,000 jobs under the administration program. Under this alternative, you would have 5,000 jobs gained.

In terms of real per capita disposable income under the administration's program, you would expect $383 less per person. You would have essentially a zero change under this alternative approach, so I do recommend a look at a very modest increase in price as an alternative that could greatly decrease the pain and suffering borne by the people in our economy.

In fact, if you do not go toward a small price change approach, then I daresay that by 1990 the administration's package is not worth passing. We would be better to have current policy instead of the administration's plan.

We can have a rather marked increase in well-being if we go to this adjustment.

Senator HASKELL. Thank you, Dr. Carlson. Your paper will be reproduced in full in the record. I appreciate your appearance very much.

[The prepared statement of Dr. Carlson follows. Oral testimony continues on p. 107.]

STATEMENT OF DR. JACK CARLSON, CHAMBER OF COMMERCE OF THE UNITED STATES

I appreciate the opportunity to share with you the National Chamber's assessment of the Administration's Energy Plan. Having served as Assistant Secretary

of Interior for Energy and Minerals, Assistant Director of the U.S. Bureau of the Budget and Office of Management and Budget and with the Council of Economic Advisers, I have been concerned with energy and economic policy for more than a decade. I am no less concerned today as Vice President and Chief Economist of the National Chamber.

SUPPORT ADMINISTRATION'S OBJECTIVES

The National Chamber supports the President's objective of reduced dependency on high price and interruptible sources of oil supply from abroad. We appreciate the President's efforts to bring this to the attention of the American people. We look forward to working with the Administration and the Congress to develop a wise energy policy. In particular we will work to develop a program that will achieve the President's objective without needlessly disrupting the American economy, causing unemployment, inflation and loss of income. Also such a program should restrain Federal taxes, regulations and red tape, and enhance freedom of choice for all Americans.

ADMINISTRATION PROGRAM OF CONSERVATION

The Administration proposes to reduce dependence on foreign oil by primary emphasis on conservation, through higher taxes, prices, and more regulations. The additional taxes can potentially total $783 billion from 1978 through 1990 or about $13,000 for each American family (see table 1). Without the gasoline and gas guzzler taxes, new tax receipts could total $285 billion or nearly $5,000 per family through 1990 (see table 2).[1]

The proposed tax and spending increases are the largest in the peacetime history of the United States. By 1985, if the rest of Federal taxes and spending were to remain at 21 percent of GNP and grow at the same rate as the Nation's income and output, the proposed taxes and spending would increase the size of the Federal government to 25 percent of GNP (see table 4).

The taxes would be disproportionately drawn from lower income households. The lower half of household income receivers would pay two-thirds of the increased taxes while the top 50 percent of household income receivers would pay only one-third. The taxes proposed by the Administration would be the most regressive Federal taxes (see table 15).

The tax increases are intended to increase consumer prices for oil and natural gas but the way they are structured they will decrease prices for producers. Limiting intra-state natural gas prices to $1.75 per 1,000 cubic feet will effectively roll back natural gas prices. Replacement of the 10 percent adjustment in crude oil prices with adjustment for only inflation will be a rollback of crude oil prices during the next decade (see table 5).

Based on reasonable estimates of the reactions of American consumers and producers to price increases or decreases (see table 6) and a forecast of energy consumption (see table 7), an estimate can be made of the energy improvement likely from the Administration's Energy Plan (see table 8). The potential for additional production is large: conservatively estimated at 40 years of current U.S. consumption from domestic sources. Although differently derived, the total energy improvement estimate for 1985 is the same as estimated by the Congressional Budget Office: an improvement of 3.6 million barrels of oil per day.

This generously assumes that all of the 250 fossil fuel fired electric generating plants under construction for use between now and 1985 will satisfy the more stringent provisions of the final amendments to the Clean Air Act, whether similar to H.R. 4151, S. 252 or S. 253. Apparently, at least 41 of the electric power plants required to serve the electricity needs of 23 million Americans may fail to meet non-attainment requirements and at least 30 other plants required to serve 15 million other Americans may fail to meet non-degradation requirements. The Administration has been asked to assess whether these plants will meet the more stringent requirements being considered by the Congress. Ignorance can cause electric power users to pay unnecessarily higher utility bills and could reduce the reliability of the electric power grid causing brown-outs and black-outs in the 1980's and 1990's. Unfortunately the Administration is slow in responding and making these vital assessments on a timely basis.

[1] Uranium and coal producers could expect some increase in revenues while oil and gas producers would suffer a loss of receipts because of rollbacks in prices they would otherwise receive under existing policies. (See table 3.)

The Administration's Energy Plan shows a slowing in the growth of energy consumption from 3.3 percent otherwise expected to 2.4 percent. However, the Administration's Plan turns sour after 1985 and leads to less improvement until 1990 when existing policy would be better than the Plan (see table 8).

ECONOMIC IMPACT OF ADMINISTRATION'S ENERGY PLAN

The Administration's Plan assures a significant impact on the U.S. economy. Although the Administration has yet to propose a specific rebate and/or spending program, as assumption can be made as to its likely distribution (see table 9). Full implementation of the Administration's Program would cause:

2½ percent to 3 percent higher consumer prices.

A loss of 1,700,000 jobs by 1985.

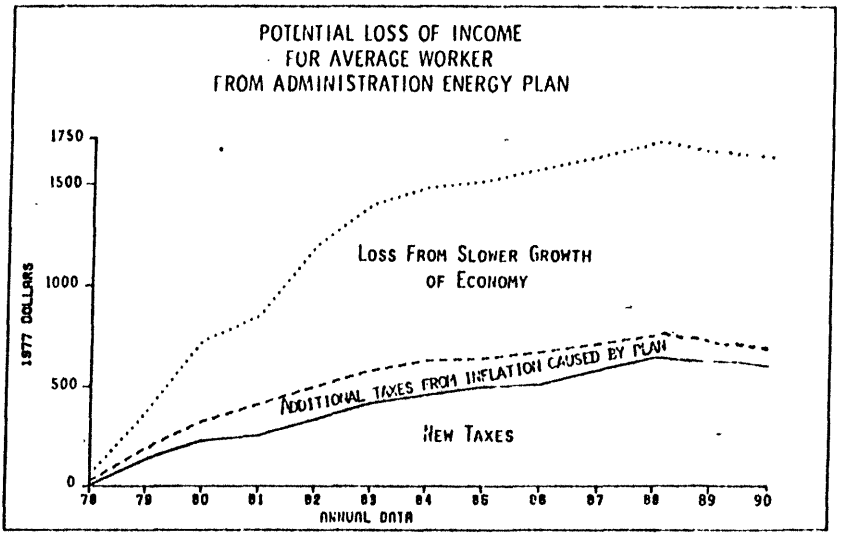
Family disposable incomes to be $1,300 lower than with existing energy policies.

GNP to be 2½ percent lower.

Business fixed investment to be 4 percent or $12 billion lower (see table 10).

The average worker can appreciate the impact of the Administration's Energy Plan by observing that he risks losing 10 percent of his spendable income by 1985. This would be equivalent to a real loss of about $1,600 in 1985 that he would have had with existing Federal energy policies (see chart 1 and also table 11).

CHART 1



If the gasoline and gas guzzler taxes are not included the economic consequences are somewhat reduced (see charts 2–7 on pages A18–20).

FEDERAL LOCKUP OF ENERGY RESOURCES

While the Federal Government asks for major sacrifices of Americans, it proposes no effort to use Federal resources. Half of the Nation's fossil fuel endowment is held by the Federal Government, but in 1976 it produced less than 10 percent of the Nation's output. Seventy-five percent of the on-land Federal domain is now withdrawn from or seriously restricted for energy and mineral leasing and even more restrictions are being considered by the Congress, particularly in Alaska (e.g. H.R. 39 and H.R. 1652). These additional restrictions being considered this year could effectively withhold as much as 20 percent of the additional production of crude oil in the future. No more than 4 percent of the Federal offshore holdings on the continental shelf have been developed for oil and gas and nearly all of that is off the producing states of Louisiana and Texas. Even very modest

schedules for exploration in only a few of the OCS provinces are continually delayed by the Administration.

In the case of particular fuels, 40 percent of total U.S. coal reserves are under Federal lands; more than 70 percent of the low-sulfur, low-cost coal reserves of the West are under government land, of which 25 percent in turn is under restriction not to be used for energy purposes. Most of the remainder is not now available and has not been available for half of a decade because of an ill-timed moratorium on Federal coal leasing. Seventy-two percent of oil shale is on Federal lands and 85 percent of tar sands where excessive Federal regulations and restrictions hamper development. Fifteen percent of developed and discovered oil reserves and resources and perhaps a third of undiscovered oil resources are on Federal lands. Twenty percent of discovered reserves and resources are on Federal lands.

The fact that only 10 percent of domestic production is generated from 50 percent of the Nation's fossil fuel endowment which is located on Federal lands is clear evidence that the Federal Government is withholding America's energy resources. While we fight an energy crisis, "the moral equivalent to war," the Federal Government embargoes our resources. At least foreign suppliers allow us to purchase energy although at high prices; the Federal Government won't even allow access at any price.

Federal land-use policies must be brought in line with the President's energy objectives. Americans should not be asked to sacrifice more than is truly necessary.

BALANCED PROGRAM OF BOTH CONSERVATION AND PRODUCTION

Far simpler, safer, less painful, less government approaches are available. For example, the Federal Government need only allow crude oil and natural gas prices to increase slowly to match or exceed the improvement in energy proposed by the Administration. For example, if crude oil prices were allowed to increase only 6 percent per year until 1985, energy improvement from both conservation and production would be 4.2 million barrels a day (MBPD) compared to only 3.6 MBPD under the Administration's Conservation Program (see Table 12).

By 1990, the Administration's Plan will have dissipated and actually be worse than existing policy. A balanced plan would exceed 5 MBPD and increase in subsequent years. Such a balanced program would greatly reduce inflation, job loss, loss of income, and lower investment (also see table 13).

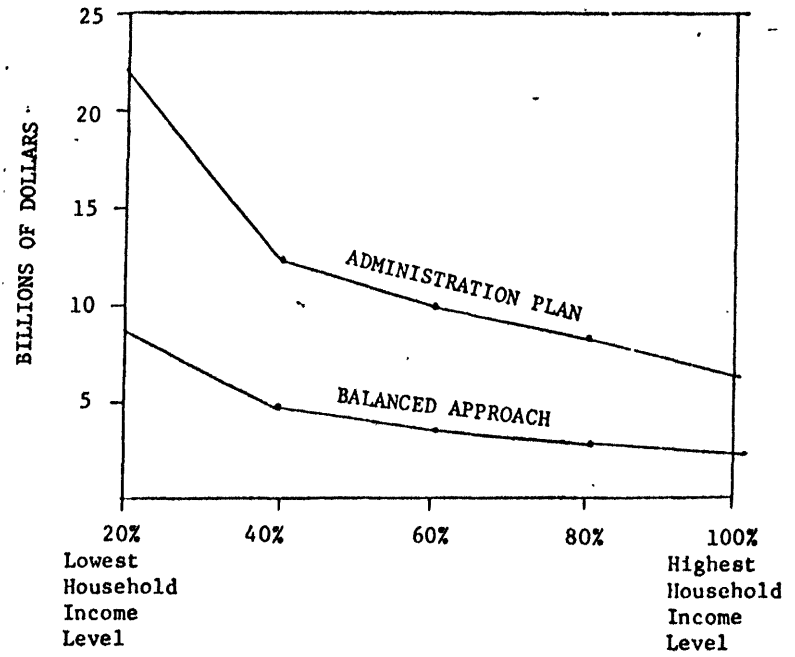
By 1985	Administration's conservation plan	Balanced conservation and production plan
Inflation	2.4 percent	1 percent.
Jobs	1,700,000 lost	400,000 gained.
Spendable family income	$1,300 lower	Only $67 lower (positive 1987).
Investment	$12,000,000,000 less	$12,000,000,000 more.

These improvements would be reflected in every state in the Union. Every state is better off from a balanced program in contrast to the Administration's Conservation Plan. Some states benefit more or suffer less because they tend to use less energy per person, per dollar of income or per worker than others. Also producer states benefit from new jobs when output is increased (see table 14).

Such a balanced approach would also greatly reduce the burden on low income households. The Administration's Conservation Plan would impose $234 billion of taxes on the lower one-fifth of household income receivers through 1990 while only $78 billion of additional sales receipts would come from this income class with a balanced program. Moreover, the additional receipts to producers would provide the funds for job-creating investment necessary for the larger work force in the future (see chart 8 on next page and table 15).

If natural gas prices were also gradually and continuously increased then energy objectives could be achieved more easily and the country need not even suffer as much—as illustrated with the balanced program.

CHART 8



CONCLUSION

I recommend the Congress accept the President's energy objectives by selecting a balanced approach that encourages both conservation and production. Such an approach could be small increases in the price of crude oil and natural gas. Analyses show that just a six percent real increase in crude oil prices can achieve the President's objectives for energy improvement at far less stress on Americans or without a large expansion of government taxes, regulations and red tape. This kind of approach is far better than the Administration's Energy Conservation Plan.

Attachment

Background Information on the Energy and Economic Impact of the Administration's Energy Conservation Plan and a Balanced Plan of Both Conservation and Production

TABLE 1.—ADMINISTRATION'S PROPOSED ENERGY TAX INCREASES

[In billions of 1977 dollars]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1978-90 total
Crude oil	$5	$9	$12	$12	$12	$12	$12	$12	$12	$12	$12	$12	$12	$146
Industrial		3	4	4	5	5	6	6	6	5	4	4	4	56
Utility						2	2	2	2	2	2	2	2	16
Gasoline		5	10	15	20	25	30	35	40	45	50	50	50	375
Auto efficiency	1	1	1	1	1	1	2	2	2	2	2	2	2	20
Total direct taxes	6	18	27	32	38	45	52	57	62	66	70	70	70	613
Additional Federal taxes from inflation caused by energy taxes (e.g. Federal personal income tax receipts increase 1.4 percent for each 1 percent of inflation)	2	5	9	13	16	19	18	16	15	15	15	14	13	170
Total direct and indirect taxes	8	23	36	45	54	64	70	73	77	81	85	84	83	783

Source: National Chamber Forecasting Center Models and Computations, DRI and Chase Econometric Modelling and Data, based upon administration's energy proposals as outlined in "The National Energy Plan" and "National Energy Act."

TABLE 2.—ADMINISTRATION'S PROPOSED ENERGY TAX INCREASES (EXCLUDING GASOLINE AND AUTOMOBILE TAXES)

[In billions of 1977 dollars]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1978-90 total
Crude oil	$5	$9	$12	$12	$12	$12	$12	$12	$12	$12	$12	$12	$12	$146
Industrial		3	4	4	5	5	6	6	6	5	4	4	4	56
Utility						2	2	2	2	2	2	2	2	16
Total direct taxes	5	12	16	16	17	19	20	20	20	19	18	18	18	218
Additional Federal taxes from inflation caused by energy taxes (e.g. Federal personal income tax receipts increase 1.4 percent for each 1 percent of inflation	0	4	5	7.	8	9	8	6	5	4	4	4	3	67
Total direct and indirect taxes	5	16	21	23	25	28	28	26	25	23	22	22	21	285

Source: National Chamber Forecasting Center Models and Computations, DRI and Chase Econometric Modelling and Data, based upon administration's energy proposals as outlined in "The National Energy Plan" and "National Energy Act."

TABLE 3.—CHANGES IN FUNDS FLOWING TO PRODUCERS CAUSED BY ADMINISTRATION'S PROPOSED TAX INCREASES

[In billions of 1977 dollars]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1978–90 total
Coal and uranium producers		2	3	4	5	6	8	11	13	14	15	16	17	114
Oil and gas producers	−2	−4	−6	−7	−7	−7	−7	−7	−7	−7	−7	−7	−7	−82
Total producer receipts	−2	−2	−3	−3	−2	−1	1	4	6	7	8	9	10	32

Source: National Chamber Forecasting Center Models and Computations, DRI and Chase Econometric Modelling and Data, based upon administration's energy proposals as outlined in "The National Energy Plan" and "National Energy Act."

TABLE 4.—ADMINISTRATION'S ENERGY PLAN AND INCREASE IN TAXES FASTER THAN THE GROWTH OF THE ECONOMY

[Percent of GNP]

	1978	1979	1980	1981	1982	1983	1984	1985	1896	1987	1988	1989	1990
Administration's objective—Federal taxes as a percentage of GNP	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Additional Federal taxes in the energy plan as a percentage of GNP	.5	1.9	2.4	3.1	3.4	3.7	3.9	4.0	4.1	4.2	4.3	4.3	4.3
Resulting Federal taxes as a percentage of GNP	21.5	22.9	23.4	24.1	24.4	24.7	24.9	25.0	25.1	25.2	25.3	25.3	25.3

Source: National Chamber Forecasting Center Models and Computations, DRI and Chase Econometric Modelling and Data, based upon administration's energy proposals as outlined in "The National Energy Plan" and "National Energy Act."

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TABLE 5.—REAL PRICE CHANGES PROPOSED IN THE ADMINISTRATION'S ENERGY PLAN

[In percent]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Demand:													
Crude oil: [1]													
Annual	15	11	6	−5	−5	−5	−5	−5	−5	−5	−5	−5	−5
Total	15	30	45	40	35	30	25	20	15	10	5	0	−5
Industrial oil:													
Annual	0	9	2	2	2	2	2	2	0	0	0	0	0
Total	0	9	11	13	15	17	19	21	21	21	21	21	21
Industrial natural gas:													
Annual	0	20	5	5	5	5	5	5	0	0	0	0	0
Total	0	20	25	30	35	40	45	50	50	50	50	50	50
Utility oil and gas:													
Annual	0	0	0	0	0	11	0	0	0	0	0	0	0
Total	0	0	0	0	0	11	11	11	11	11	11	11	11
Motor gasoline:													
Annual	8	8	7	7	6	6	6	5	5	5	0	0	0
Total	8	17	25	33	42	50	58	67	75	83	83	83	83
Coal: [1]													
Annual	5	5	10	10	5	−5	−5	−5	−5	−5	−5	−5	−5
Total	5	10	20	30	35	30	25	20	15	10	5	0	−5
Supply:													
Crude oil: [1]													
Annual	−5	−5	−5	−5	−5	−5	−5	−5	−5	−5	−5	−5	0
Total	−5	−10	−15	−20	−25	−30	−35	−40	−45	−50	−55	−60	−60
Natural gas: [2]													
Annual	−5	−5	−5	−5	−5	−5	−5	−5	−5	−5	−5	−5	0
Total	−5	−10	−15	−20	−25	−30	−35	−40	−45	−50	−55	−60	−60
Coal: [1]													
Annual	5	5	10	10	5	−5	−5	−5	−5	−5	−5	−5	−5
Total	5	10	20	30	35	30	25	20	15	10	5	0	−5

[1] Reflects the fact that the administration's energy plan would disallow 10 percent increase in crude oil prices now allowed under existing law; 5 percentage points of the adjustment was assumed for inflation and 5 percent for real price increases.

[2] Reflects the fact that the Federal Power Commission would not be allowed to set rates according to traditional cost of production techniques under the administration's energy plan.

Source: National Chamber Forecasting Center Models and Computations, DRI and Chase Econometric Modeling and Data, based upon administration's energy proposals as outlined in "The National Energy Plan" and "National Energy Act."

TABLE 6.—IMPACT OF A 1 PERCENT CHANGE IN PRICE ON THE QUANTITY CONSERVED OR PRODUCED IN PERCENT

[Demand and supply elasticities]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Demand lasticities:													
Crude oil [1]	−0.20	−0.20	−0.24	−0.27	−0.30	−0.33	−0.37	−0.40	−0.41	−0.42	−0.43	−0.44	−0.45
Industrial oil and gas [1]	−.20	−.20	−.20	−.24	−.28	−.32	−.36	−.40	−.41	−.42	−.43	−.44	−.45
Utility oil and gas [1]						−.15	−.20	−.25	−.30	−.35	−.40	−.43	−.45
Gasoline [3]	−.10	−.10	−.11	−.12	−.14	−.16	−.18	−.20	−.22	−.24	−.26	−.28	−.30
Coal [1 2]	−.20	−.22	−.24	−.26	−.28	−.30	−.32	−.34	−.36	−.38	−.40	−.42	−.44
Natural gas	−.20	−.22	−.24	−.26	−.28	−.30	−.32	−.34	−.36	−.38	−.40	−.42	−.44
Supply elasticities:													
Crude oil	.10	.12	.14	.16	.18	.20	.22	.24	.26	.28	.30	−.31	−.32
Natural gas [4 5]	.10	.12	.14	.16	.18	.20	.22	.24	26	.28	.30	−.31	−.32
Coal [4 2]	.30	.33	.36	.39	.42	.45	.48	.51	.54	.57	.60	−.60	−.60

[1] Calculated from: Federal Energy Administration, 1977 National Energy Outlook (Draft: Jan. 15, 1977), app. D, tables D-3, D-4, D-5.
[2] Calculated from: Dale W. Jorgenson, ed., Econometric Studies of U.S. Energy Policy, Data Resources Series, vol. 1, 1976, ch. 4.
[3] Assumes environmental laws will not impede production.
[4] Calculated from various FEA publications.
[5] Assume current proved reserves of natural gas. If new reserves are discovered and developed, elasticity could be as high as 3.5 in 1985.

Source: National Chamber Forecasting Center.

TABLE 7.—CONSUMPTION OF ENERGY BY TYPE

[In millions of barrels of crude oil equivalents]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Crude oil	19.0	19.8	20.6	21.1	21.6	22.2	22.7	23.3	23.6	24.1	24.6	25.0	25.4
Coal	8.0	8.4	8.7	9.1	9.4	9.8	10.2	10.5	10.8	11.2	11.5	11.8	12.0
Natural gas	10.0	9.9	9.8	9.7	9.6	9.5	9.4	9.4	9.2	9.1	9.0	9.0	9.0
Uranium	1.5	2.0	2.5	3.2	3.9	4.7	5.5	6.2	6.7	7.4	8.1	8.6	9.1
Total in million barrels per day	39	40	42	43	45	46	468	50	51	52	53	54	55
Total quadrillion in Btu's	79	81	84	86	90	93	95	100	102	104	107	109	111
Addendum:													
Industrial oil and natural gas	8.4	8.8	9.2	9.6	9.9	10.3	10.7	11.0	11.3	11.6	11.9	12.2	12.5
Utility oil and gas	4.0	3.9	3.8	3.7	3.6	3.4	3.3	3.2	3.1	3.0	2.8	2.7	2.6
Gasoline	6.7	6.8	6.9	6.9	6.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0

Source: National Chanber Forecasting Center; Calculations based upon data from Federal Energy Administration, U.S. Bureau of Mines, and "The National Energy Plan."

TABLE 8.—GAINS AND LOSSES IN CONSERVATION (DEMAND) AND PRODUCTION (SUPPLY) FROM ADMINISTRATION'S ENERGY TAXES

[In millions of barrels of crude oil per day]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Direct conservation:													
Crude oil tax	0.3	0.5	0.8	0.9	0.7	0.7	0.6	0.5	0.4	0.3	0.1	0	0.1
Industrial oil and natural gas tax	0	.2	.3	.4	.7	.9	1.2	1.5	1.5	1.5	1.5	1.5	1.5
Utility oil and natural gas tax	0	0	0	0	0	.1	.1	.1	.1	.1	.1	.1	.1
Gasoline tax	.1	.2	.2	.3	.4	.6	.7	.9	1.0	1.1	1.2	1.3	1.3
Total gains	.4	.9	1.3	1.6	1.8	2.3	2.6	3.0	3.0	3.0	2.9	2.9	2.8
Losses from lower natural gas prices:													
Conservation	−.1	−.2	−.2	−.2	−.2	−.2	−.3	−.3	−.3	−.3	−.4	−.4	−.5
Production	−.1	−.1	−.2	−.3	−.4	−.6	−.9	−.9	−1.1	−1.3	−1.5	−1.7	−2.0
Net direct gain in conservation	.2	.6	.9	1.1	1.2	1.5	1.4	1.8	1.8	1.7	1.4	.8	.3
Indirect energy improvements from higher coal and uranium prices:													
Conservation	.1	.2	.4	.7	.9	.9	.8	.7	.6	.4	.2	0	−.2
Production	.1	.3	.5	1.2	1.4	1.3	1.2	1.1	.9	.6	.3	0	−.3
Total indirect	.2	.5	.9	1.9	2.3	2.2	2.0	1.8	1.5	1.0	.5	0	−.5
Total direct and indirect	.4	1.1	1.8	3.0	3.5	3.7	3.6	3.6	3.5	2.7	1.9	.8	−.2

Source: National Chamber Forecasting Center; Calculations based upon data from Federal Energy Administration, U.S. Bureau of Mines, and "The National Energy Plan."

TABLE 9.—DISTRIBUTION OF TAXES AND RECEIPTS

[Dollar amounts in billions of 1977 dollars]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1978–90 total	Percent distribution
Individuals (per capita rebates, autos, home insulation, etc.)	$4	$12	$18	$20	$23	$27	$31	$33	$35	$36	$37	$37	$37	$350	54
State and local governments	1	3	4	5	6	7	8	9	10	11	12	12	12	100	16
Business	1	3	5	7	9	11	13	15	17	19	21	21	21	163	25
Total tax rebates	6	18	27	32	38	45	52	57	62	66	70	70	70	613	95
Producers of coal, uranium, and other		2	3	4	5	6	8	11	13	14	15	16	17	114	18
Producers of oil and natural gas	−2	−4	−6	−7	−7	−7	−7	−7	−7	−7	−7	−7	−7	−82	−13
Total producers receipts	−2	−2	−3	−3	−2	−1	1	4	6	7	8	9	10	32	5
Total tax rebates and producers receipts	4	16	24	29	36	44	53	61	68	73	78	79	80	645	100

Source: National Chamber Forecasting Center Models and Computations, DRI and Chase Econometric Modelling and Data, based upon administration's energy proposals as outlined in "The National Energy Plan" and "National Energy Act."

TABLE 10.—IMPACT OF THE ADMINISTRATION'S ENERGY CONSERVATION PLAN ON THE U.S. ECONOMY

[Change in levels of economic activity]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Real GNP (percent)	−0.2	−0.4	−1.3	−1.9	−2.1	−2.3	−2.5	−2.5	−2.3	−2.1	−2.0	−1.9	−1.8
Billions of 1977 dollars	−4	−8	−26	−40	−46	−53	−60	−63	−60	−57	−53	−50	−45
Real per capita disposable income (percent)	−0.4	−1.5	−2.7	−3.5	−4.0	−4.4	−4.7	−4.9	−4.8	−4.7	−4.6	−4.4	−4.2
Real personal income:													
Billions of 1977 dollars	−32	−15	−33	−47	−55	−64	−70	−75	−77	−79	−81	−82	−84
Average loss per family in 1977 dollars	−57	−263	−586	−632	−998	−1,146	−1,263	−1,346	−1,380	−1,420	−1,450	−1,470	−1,500
Savings	−0.2	−0.6	−1.0	−1.1	−1.2	−1.3	−1.5	−1.7	−1.7	−1.6	−1.5	−1.4	−1.3
Employment (percent)	0	−0.2	−0.6	−1.1	−1.4	−1.5	−1.7	−1.7	−1.7	−1.7	−1.7	−1.6	−1.5
Jobs (thousands)	−20	−150	−620	−1,100	−1,350	−1,530	−1,650	−1,730	−1,650	−1,600	−1,650	−1,700	−1,700
Unemployment (percent)	0	0.1	0.4	0.7	0.9	1.1	1.2	1.2	1.1	1.0	0.9	0.8	0.7
Jobs lost (thousands)	30	100	420	730	910	1,060	1,160	1,240	1,200	1,150	1,100	1,050	1,000
Consumer prices (percent)	0.4	1.0	1.7	2.3	2.7	3.0	2.7	2.4	2.2	2.1	2.0	1.9	1.8
GNP deflator (percent)	0.3	0.8	1.3	1.9	2.4	2.5	2.4	2.0	1.9	1.8	1.7	1.7	1.7
Real business fixed investment (percent)	−0.2	−0.8	−1.9	−3.0	−4.0	−4.5	−4.5	−4.0	−4.0	−3.8	−3.5	3.2	3.0
Billions of 1977 dollars	−1	−2	−4	−7	−10	−11	−12	−12	−12	−12	−12	−12	−12
Capacity utilization (percent)	−0.3	−1.1	−2.3	−3.1	−3.4	−3.7	−3.9	−4.0	−4.1	−4.2	−4.3	−4.2	−4.1
Industrial production (percent)	−0.3	−1.2	−2.4	−3.1	−3.4	−3.6	−3.9	−4.0	−4.1	−4.0	−4.0	−3.8	+3.6
Auto sales (percent)	−2	−7	−10	−10	−10	−11	−11	−12	−12	−13	−13	−11	−10
Thousands of cars	−200	−700	−1,100	−1,200	−1,200	−1,300	−1,400	−1,400	−1,400	−1,500	−1,500	−1,400	−1,300
Housing starts (percent)	−2	−5	−7	−6	−5	−4	−3	−2	−1	0	0	0	0
Thousands of units	40	100	140	120	100	80	60	40	20	0	0	0	0
Exports in billions of 1977 dollars	−0.4	−1.0	−2.4	−3.4	−3.8	−3.8	−3.7	−3.7	−3.6	−3.5	−3.1	−2.1	−1.1
Imports in billions of 1977 dollars	−1.8	−4.0	−6.8	−9.3	−12.7	−18.1	−20.1	−20.8	−20.1	−13.0	−10.0	−5.0	−3.1
Net exports in billions of 1977 dollars	1.4	3.0	4.4	5.9	8.9	14.3	16.4	17.1	16.5	9.5	6.9	2.9	2.0

Source: National Chamber Forecasting Center Models and Computations, Federal Energy Administration and U.S. Bureau of Mines data, "The National Energy Plan," DRI and Chase Econometrics modeling and data.

TABLE 11.—THE LOSS IN SPENDABLE INCOME (DISPOSABLE INCOME) PER AVERAGE WORKER FROM FULL IMPLEMENTATION OF ADMINISTRATION'S ENERGY TAX PLAN

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1899	1990	1978–90 total
New higher taxes	68	195	285	310	390	470	510	550	560	630	690	670	650	5,978
Addtiional taxes from energy plan—generated inflation	22	55	95	160	160	170	170	160	150	140	130	120	110	1,642
ower income because of slower growing economy	30	170	390	420	680	800	830	850	840	830	820	810	800	8,270
Total loss in spendable income per worker	120	420	770	890	1,230	1,440	1,510	1,560	1,550	1,600	1,640	1,600	1,560	15,890
Los as a percent of real disposable income per worker	1	3	6	7	9	10	11	11	10	9	8	7	6	

Source: National Chamber Forecasting Center Models and Computations, DRI and Chase Econometric Modelling and Data, based upon administration's energy proposals as outlined in "The Nationa Energy Plan" and "National Energy Act."

TABLE 12.—BALANCED PROGRAM ENCOURAGE BOTH CONSERVATION AND PRODUCTION

[Allow crude oil price to increase to real market price by 1985]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Price change for crude oil:													
Annual	6	6	6	6	6	6	6	6	0	0	0	0	0
Total	6	12	19	26	34	42	50	59	59	59	59	59	59
Demand elasticity	−0.20	−0.20	−0.24	−0.27	−0.30	−0.33	−0.37	−0.40	−0.41	−0.42	−0.43	−0.44	−0.45
Supply elasticity	.10	.12	.14	.16	.18	.20	.22	.24	.26	.28	.30	.30	.30
U.S. consumption of crude oil under existing policy (mbpb)	19.0	19.8	20.6	21.1	21.6	22.2	22.7	23.3	23.6	24.1	24.6	25.0	25.4
Conservation from domestic oil	.1	.3	.5	.8	1.1	1.5	2.0	2.6	2.7	2.8	2.9	3.0	3.1
Additional domestic production	.1	.2	.3	.5	.7	.9	1.2	1.6	1.7	1.8	1.9	2.0	2.1
Total improvement from balanced approach	.2	.5	.8	1.3	1.8	2.4	3.2	4.2	4.4	4.6	4.8	5.0	5.2
In comparison with—administration's conservation plan	.4	1.1	1.8	3.0	3.5	3.7	3.6	3.6	3.5	2.7	1.9	.8	−.2

Source: National Chamber Forecasting Center: Calculations based upon data from Federal Energy Administration, U.S. Bureau of Mines, and "The National Energy Plan."

TABLE 13.—IMPACT OF A BALANCED ENERGY CONSERVATION AND PRODUCTION PLAN ON THE U.S. ECONOMY

[Change in levels of economic activity]

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Real GNP (percent)	0.1	−0.2	−0.3	−0.3	−0.2	−0.1	0.0	0.1	0.2	0.3	0.3	0.4	0.4
Billions of 1977 dollars	−1	−2	−4	−4	−3	−2	0	1	2	4	4	5	6
Real per capita disposable income (percent)	−0.2	−0.5	−0.7	−0.9	−1.0	−1.0	−0.9	−0.6	−0.4	−0.2	0	0.2	0.4
Real disposable personal income:													
Billions of 1977 dollars	−2	−4	−5	−6	−7	−7	−6	−4	−2	−1	0	0.1	0.3
Average loss per family in 1977 dollars	−33	−67	−83	−100	−117	−17	−100	−67	−33	−17	0	17	50
Personal savings	−0.1	−0.1	−0.2	−0.2	−0.2	−0.2	−0.2	−0.1	−0.1	−0.1	−0.1	0	0.1
Employment (percent)	0	−0.1	−0.1	−0.1	−0.1	0	0.2	0.4	0.5	0.6	0.7	0.8	0.9
Jobs (thousands)	−10	−60	−100	−110	−60	40	200	430	350	600	710	825	940
Unemployment (percent)	0.2	0.6	1.1	1.2	0.8	−0.4	−2.4	−5.7	−8.2	−8.6	−9.0	−9.2	−9.4
Jobs lost (thousands)	10	50	60	80	50	−20	−140	−310	−390	−400	−420	−430	−450
Consumer prices (percent)	0.1	0.3	0.5	0.7	0.8	0.9	1.0	1.0	0.9	0.9	0.8	0.7	0.5
GNP deflator (percent)	0.1	0.2	0.3	0.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7	0.7	0.5
Real business fixed investment (percent)	0.6	1.2	1.7	3.0	4.2	5.7	7.6	10.0	9.8	9.6	9.4	9.2	9.0
Billions of 1977 dollars	1	2	3	4	6	8	10	12	12	12	13	13	14
Capacity utilization (percent)	−0.1	−0.2	−0.3	−0.2	−0.1	0	0.2	0.4	0.6	0.8	1.0	1.2	1.4
Industrial production (percent)	0	0.1	0.2	0.3	0.4	0.6	1.0	2.0	2.0	1.8	1.7	1.6	1.5
Auto sales	−1.2	−1.6	−2.0	−1.8	−1.6	−1.8	−1.0	−0.8	−0.6	−0.4	−0.3	−0.2	0
Thousands of cars	−130	−180	−240	−220	−200	−170	−150	−130	−110	−100	80	50	0
Housing starts (percent)	0	−1.2	−1.6	−1.8	−2.0	−2.2	−2.2	−2.2	−2.0	−1.8	−1.6	−1.4	−1.0
Thousands of units	0	−20	−30	−34	−39	−42	−44	−46	−45	−43	−38	−32	−22
Exports in billions of 1977 dollars	−0.1	−0.4	−0.8	−1.1	−1.4	−1.7	−1.9	−2.3	−2.8	−3.2	−3.5	−3.9	−4.2
Imports in billions of 1977 dollars	−0.9	−1.6	−2.9	−4.4	−6.3	−12.0	−20.0	−24.0	−25.0	−25.5	−25.9	−26.4	−27.0
Net exports in billions of 1977 dollars	0.8	1.2	2.1	3.3	4.9	10.3	18.1	21.7	22.2	22.3	22.4	22.5	22.8

Source: National Chamber Forecasting Center Models and Computations, Federal Energy Administration and U.S. Bureau of Mines data, "The National Energy Plan," DRI and Chase Econometrics modeling and data.

TABLE 14.—COMPARISON OF THE ADMINISTRATION'S ENERGY CONSERVATION PLAN AND A BALANCED CONSERVATION AND PRODUCTION APPROACH ON EACH STATE BY 1985[1]

States	Real dollar from average consumer as—[2]		Energy improvement[3] (barrels per day)		Inflation[4] (percent change in level of prices)		Employment[5] (thousands of jobs)		Real per capita disposable income[6] (1977 dollars)	
	Federal Taxes, Administration	Producer receipts, balance	Administration	Balance	Administration	Balance	Administration	Balance	Administration	Balance
Alabama	$302	$95	56	65	3.0	1.2	−26	5	−$267	−$58
Alaska	752	237	14	17	3.2	1.3	−4	8	−571	1813
Arizona	329	104	37	43	2.4	1.0	−17	3	−438	−88
Arkansas	378	119	39	46	3.3	1.3	−14	3	−473	−79
California	309	96	341	398	2.1	.8	−177	64	−357	45
Colorado	296	93	38	44	2.2	.9	−23	5	−383	0
Connecticut	415	75	69	80	2.7	1.1	−28	5	−298	−89
Delaware	601	189	19	22	4.0	1.6	−5	1	−317	0
District of Columbia	291	92	10	12	1.8	.8	−9	2	−429	−71
Florida	393	104	173	202	3.1	1.2	−61	9	−336	−34
Georgia	293	92	75	87	2.5	1.0	−40	7	−388	−58
Hawaii	610	192	27	31	2.4	1.0	−7	1	−338	0
Idaho	360	113	15	17	3.2	1.3	−7	1	−277	0
Illinois	286	90	171	199	1.9	.8	−99	19	−414	−33
Indiana	310	98	88	103	2.5	1.0	−43	8	−346	−25
Iowa	297	94	43	50	2.1	.8	−23	5	−344	−69
Kansas	342	108	39	45	2.4	1.0	−10	7	−431	43
Kentucky	239	75	43	50	2.2	.9	−24	6	−277	−55
Louisiana	424	130	78	91	3.5	1.4	−28	32	−286	312
Maine	540	170	29	33	4.8	1.9	−9	2	−280	0
Maryland	325	102	72	84	2.3	.9	−33	7	−447	−45
Massachusetts	474	174	147	171	3.5	1.4	−50	8	−335	−48
Michigan	275	87	132	154	1.9	.8	−71	12	−411	−31
Minnesota	314	99	64	75	2.4	1.0	−33	6	−340	−49
Mississippi	357	112	41	48	3.6	1.5	−16	3	−424	0
Missouri	277	87	69	81	2.2	.9	−43	8	−316	−39
Montana	408	129	15	18	3.2	1.3	−5	3	−264	265
Nebraska	323	102	25	29	2.4	1.0	−12	2	−443	−64
Nevada	432	136	13	15	3.1	1.2	−61	11	−371	−32
New Hanpshire	437	138	18	21	3.0	1.2	−7	1	−357	−30
New Jersey	368	116	147	171	2.5	1.0	−59	10	−359	−37
New Mexico	366	115	21	25	3.6	1.4	−9	4	−257	171
New York	352	111	336	391	2.4	1.0	−149	20	−362	−83
North Carolina	270	85	77	89	2.3	.9	−45	9	−296	−35
North Dakota	385	120	13	16	3.2	1.3	−5	3	−270	0
Ohio	220	70	130	151	1.8	.7	−90	16	−343	−17
Oklahoma	305	95	42	49	2.6	1.1	−21	9	−360	144
Oregon	300	90	34	40	2.2	.9	−19	4	−426	−128
Pennsylvania	260	80	166	194	3.2	1.3	−99	20	−332	−47
Rhode Island	308	97	17	20	3.0	1.2	−9	2	−291	−15

TABLE 14.—COMPARISON OF THE ADMINISTRATION'S ENERGY CONSERVATION PLAN AND A BALANCED CONSERVATION AND PRODUCTION APPROACH ON EACH STATE BY 1985 [1]—Continued

States	Real dollar from average consumer [2]		Energy improvement [3] barrels per day)		Inflation [4] (percent change in level of prices)		Employment [5] (thousands of jobs)		Real per capita disposable income [6] (1977 dollars)	
	Federal Taxes, Administration	Producer receipts, balance	Administration	Balance	Administration	Balance	Administration	Balance	Administration	Balance
South Carolina	283	89	41	47	2.4	1.0	−23	4	−350	−105
South Dakota	384	121	13	16	3.2	1.3	−5	1	−290	−15
Tennessee	240	76	54	64	2.3	.9	−35	7	−263	−44
Texas	370	116	230	268	2.8	1.1	−100	45	−328	80
Utah	346	109	22	26	2.9	1.2	−10	5	−326	163
Vermont	350	110	9	10	2.4	1.0	−4	1	−417	−30
Virginia	441	139	118	137	3.4	1.4	−38	8	−377	−75
Washington	314	102	57	67	2.1	.9	−28	5	−394	−56
West Virginia	214	67	19	23	1.7	.7	−12	3	−446	0
Wisconsin	265	83	63	73	1.9	.8	−38	7	−423	−42
Wyoming	625	197	12	14	1.6	.7	−4	2	−510	510
United States	330	105	3,600	4,200	2.4	1.0	−1,730	430	−350	−18

[1] Details may not add to totals due to rounding.

[2] State and U.S. crude oil consumption in 1975 calculated from Bureau of Mines consumption data for diesel oil, distillate fuel oil, motor gasoline, jet fuel, kerosine, liquid petroleum gas, and residual fuel oil. Population data from Bureau of Economic Analysis.

$$ADMFND_{it}=(w*ADMFND_{ust})/NR_i$$
$$CHMFND_{it}=(w*CHMFND_{ust})/NR_i$$

where

i=state
t=1985
us=United States
t'=1975
$w=CCO_{it'}/CCO_{ust'}$
CCO=Crude Oil Consumption
ADMFND=Real dollars taken from consumers as Federal Taxes
CHMFND=Real dollars taken from consumers as Producer Receipts
NR=Population

[3] State and U.S. crude oil consumption in 1974 calculated from Bureau of Mines consumption data for diesel oil, distillate fuel oil, motor gasoline, jet fuel, kerosine, liquid petroleum gas, and residual fuel oil.

$$ADMEI_{it}=w*ADMEI_{ust}$$
$$CHMEI_{it}=w*CHMEI_{ust}$$

where:

ADMEI=Energy Improvement because of the Administration's Energy Proposals
CHMEI=Energy Improvements because of Balanced Program

[4] State and U.S. real income data obtained from Data Resources, Inc.

$$ADMCPI_{it}=r*ADMCPI_{ust}$$
$$CHMCPI_{it}=r*CHMCPI_{ust}$$

where:

ADMCPI=Consumer Price Change because of Administration's Energy Proposals
CHMCPI=Consumer Price Change because of Balanced Program
$r=(Y_{it''}/Y_{ust''})/w$
Y=Real Income ($1,977)
t''=1976

[5] State and U.S. employment data obtained from Data Resources, Inc.

$$ADMEMP_{it}=q*ADMEMP_{ust}$$
$$CHMEMP_{it}=q*CHMEMP_{ust}$$

where:

ADMEMP=Employment Change because of Administration's Energy Proposals
CHMEMP=Employment Change because of Balanced Program
$q=EMP_{it'}/EMP_{ust'}$
EMP=Number Employed

[6] State and U.S. income data obtained from Data Resources, Inc. State and U.S. population data obtained from the Bureau of Economic Analysis.

$$ADMYNR_{it}=z*ADMYNR_{ust}$$
$$CHMYNR_{it}=z*CHMYNR_{ust}$$

where:

ADMYNR=Real Per Capita Income change because of Administration's Energy Proposals
CHMYNR=Real Per Capita Income change because of Balanced Program
$z=((Y_{it''}/NR_{it''})/(Y_{ust''}/NR_{ust''}))$
NR=Population

TABLE 15.- COMPARISON OF ADMINISTRATION'S AND BALANCED PROGRAM'S IMPACT ON INCOME DISTRIBUTION

[In billions of 1977 dollars]

Income levels	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Total 1978–90
Lowest 5th:														
Administration taxes	2.7	7.8	11.4	13.0	15.0	17.6	20.2	21.8	23.4	24.5	25.6	25.6	26.5	234.2
Balanced program receipts	.4	1.0	1.6	2.6	3.7	4.8	6.5	8.5	8.9	9.3	9.7	10.1	10.5	77.6
Savings	2.3	6.8	9.8	11.6	11.3	12.8	13.7	13.3	14.5	15.2	15.9	15.5	15.1	156.6
2d 5th:														
Administration taxes	1.2	3.7	5.6	6.7	8.0	9.5	11.0	12.1	13.2	14.1	15.0	15.0	15.0	130.1
Balanced program receipts	.2	.5	.8	1.3	1.9	2.5	3.3	4.4	4.6	4.8	5.0	5.2	5.4	39.9
Savings	1.0	3.2	4.8	5.4	6.1	7.0	7.7	7.7	8.6	9.3	10.0	10.2	9.6	90.2
3d 5th:														
Administration taxes	.9	2.7	4.1	5.1	6.1	7.4	8.6	9.6	10.5	11.3	12.1	12.1	12.1	102.6
Balanced program receipts	.2	.4	.6	1.0	1.4	1.9	2.5	3.3	3.5	3.6	3.8	3.9	4.1	30.2
Savings	.7	2.3	3.5	4.1	4.7	5.5	6.1	6.3	7.0	7.7	8.3	8.2	8.0	72.4
4th 5th:														
Administration taxes	.8	2.2	3.5	4.3	5.2	6.2	7.2	8.0	8.8	9.5	10.2	10.2	10.2	85.9
Balanced program receipts:	.1	.3	.5	.8	1.2	1.5	2.1	2.7	2.8	3.0	3.1	3.2	3.3	24.6
Savings	.7	1.9	3.0	3.5	4.0	4.7	5.1	5.3	6.0	6.5	7.1	7.0	6.9	61.3
Highest 5th:														
Administration taxes	.5	1.6	2.5	3.1	3.6	4.4	5.1	5.7	6.2	6.7	7.1	7.1	7.1	60.7
Balanced program receipts	.1	.2	.4	.6	.8	1.1	1.4	1.9	2.0	2.0	2.1	2.2	2.3	17.1
Savings	.4	1.4	2.1	2.5	2.8	3.3	3.7	3.8	4.2	4.7	5.0	4.9	4.8	43.6
Total:														
Administration taxes	6.0	18.0	27.0	32.0	38.0	45.0	52.0	57.0	62.0	66.0	70.0	70.0	70.0	613.5
Balanced program receipts	1.0	2.5	3.9	6.4	8.9	11.8	15.8	20.7	21.7	22.7	23.7	24.6	25.6	189.4
Savings	5.0	15.5	23.1	25.6	29.1	33.2	46.2	36.3	40.3	43.3	46.3	45.4	44.4	424.1

Source: National Chamber Forecasting Center.

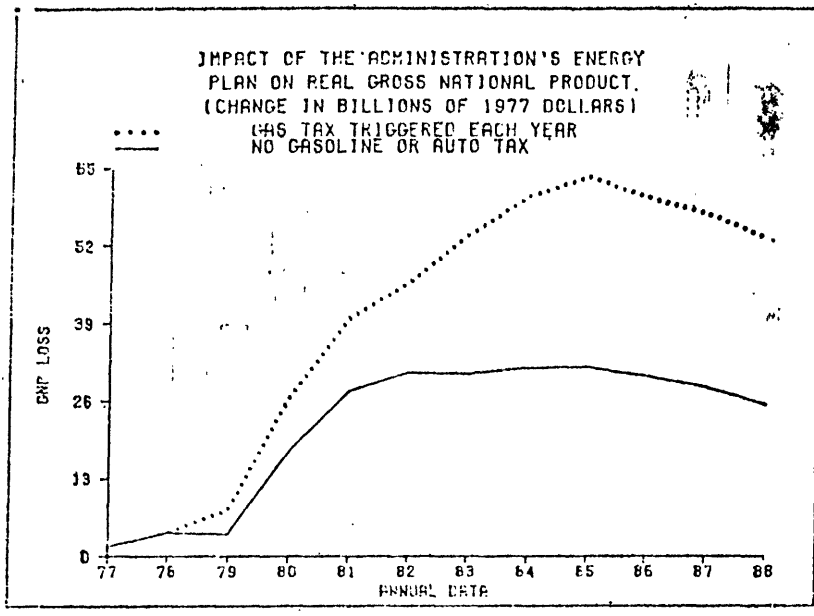
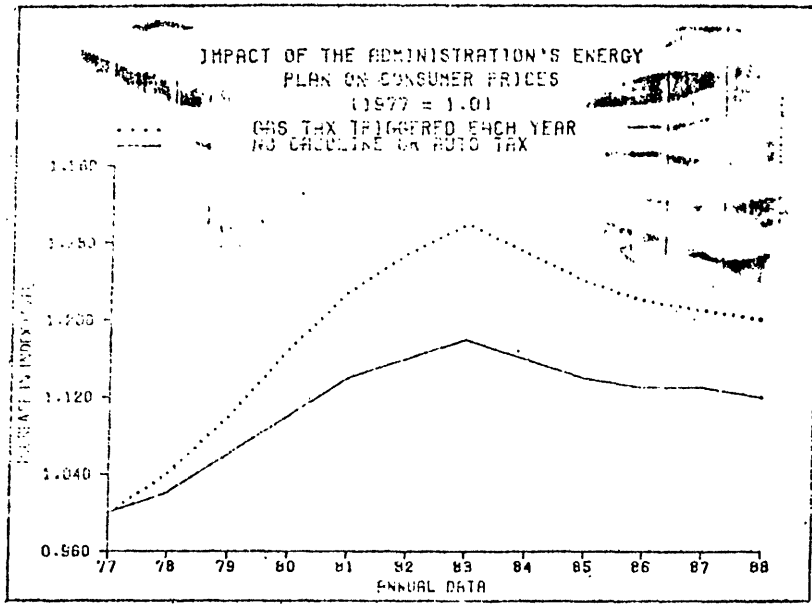


CHART 2



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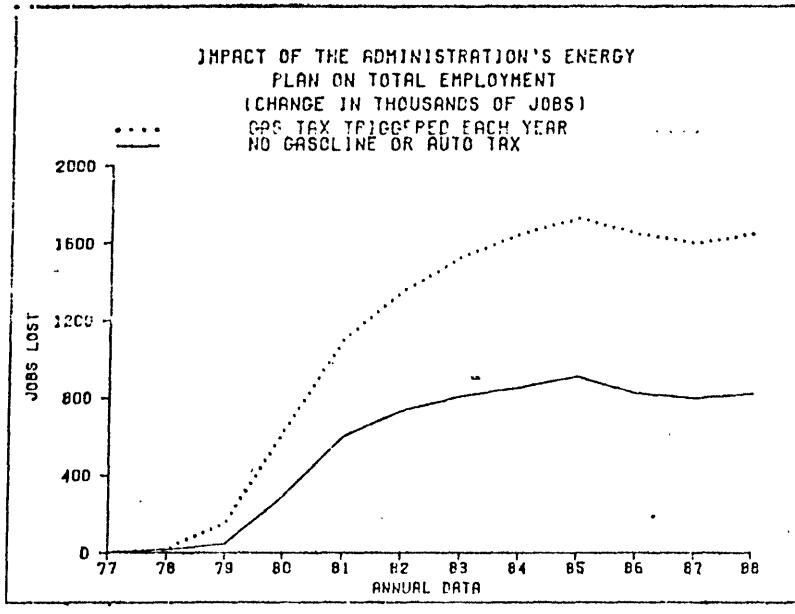

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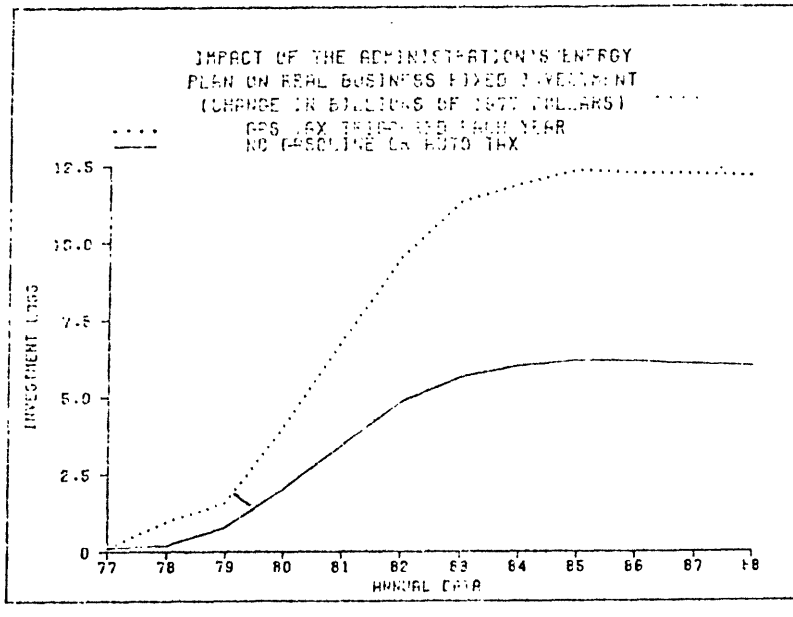

CHART 5

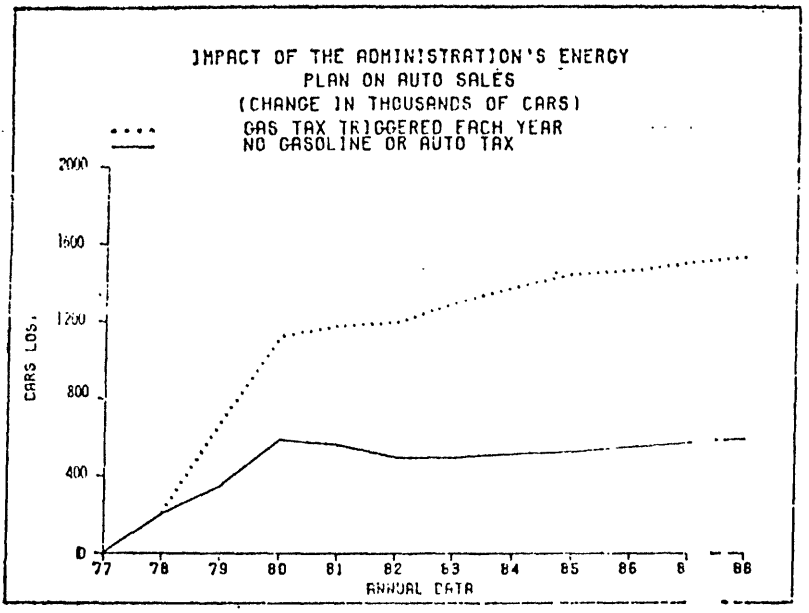

CHART 6

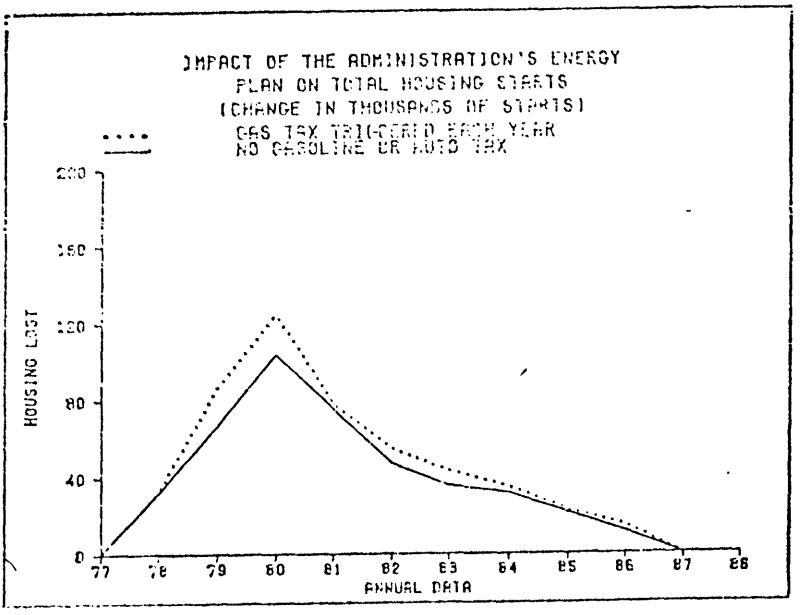

CHART 7

Senator HASKELL. The hearing is now adjourned. The record will stay open for a period of 2 weeks for any additional remarks.

[Thereupon, at 12:25 p.m. the hearings in the above-entitled matter were recessed, to reconvene at the call of the Chair.]

RECYCLING ENERGY TAX REVENUES

MONDAY, JUNE 27, 1977

U.S. SENATE,
SUBCOMMITTEE ON ADMINISTRATION OF THE
INTERNAL REVENUE CODE OF THE COMMITTEE ON FINANCE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:40 a.m. in room 2221, Dirksen Senate Office Building, Hon. Floyd K. Haskell (chairman of the subcommittee) presiding.

Present: Senator Haskell.

Senator HASKELL. The hearing of the Subcommittee on Administration of the Internal Revenue Code will commence.

This morning we continue the hearings on administrative problems involving recycling energy tax revenues.

On June 6 we heard from a group of distinguished economists who gave us their suggestions on how we could best moderate the economic disruption which might occur with increased energy taxes.

As I indicated at our initial hearing, higher energy prices to solve our energy problem may be inevitable. The highest priority, however, will be to soften the impact of this burden on individual citizens.

I have invited this morning witnesses to assist us in formulating an administratively sound system. I am delighted to welcome, as the first witness, Hon. Donald C. Alexander, former Commissioner of Internal Revenue.

Mr. ALEXANDER. Thank you, Mr. Chairman I am pleased to be here.

I would like to request that my prepared statement be inserted in the record.

Senator HASKELL. It will be inserted and reproduced in full in the record.

STATEMENT OF DONALD C. ALEXANDER, FORMER COMMISSIONER, INTERNAL REVENUE SERVICE

Mr. ALEXANDER. Thank you, Mr. Chairman.

I am now in private practice in New York, but I served as Commissioner of Internal Revenue for 3 years, 9 months, and 2 days. While serving as Commissioner, Mr. Chairman, one of the objectives which I pushed, with a minimum of success, was to try to confine the activities of the Internal Revenue Service to administering and enforcing the tax laws. That is a vast job, and a very difficult one, and it, alone, would strain the resources of any agency, however effective.

I think the Internal Revenue Service does a fine job under very difficult circumstances, and I think it will likely continue to do so.

But making the tax system and tax administration serve as a catch-all, as the solution of first resort, for every social and economic problem that arises, strains the system.

My initial suggestion is that the Congress look carefully at each element in the energy tax program to see whether something called a tax is actually a prohibitory or regulatory charge. If the latter, perhaps it could be administered better by the agency having primary regulatory responsibilities.

Many of these taxes in the energy program as proposed by the administration have genuine claims to characterization as taxes. They have a broad base affecting a large number of people, and resemble selective excise taxes of which our tax system had a large number prior to the 1965 act that repealed most of them.

Commissioner Kurtz will appear before you later this morning and discuss with you the problems of administering the energy rebate proposal as he sees it. The rebate proposal is the primary matter that I would like to discuss with you this morning. The administration proposed that there be a rebate on a per capita basis, a refundable tax credit in a fixed amount, and that corresponding payments be made through the social security system, supplemental security income, railroad retirement benefit programs and aid to families with dependent children; and finally a rebate to individuals not involved in any of the above classes.

The House made some adjustments to this proposal, at least tentatively. I believe that these adjustments would result in a rebate program that would be easier to administer. It would not be as precise in delivering a rebate to each individual, perhaps, as the program originally proposed, but it would likely result in less duplicative payments than the administration's proposal.

Under the administration's proposal, the Internal Revenue Service would apparently be fully responsible for all rebates made through the tax system, but other agencies, both Federal and State would have the primary responsibility for the delivery of rebates to those in the tax system.

Commissioner Kurtz' statement points out that the Internal Revenue Service has coped with a rebate before. It coped fairly easily with it, more easily than we expected at the time that the rebate was enacted. Other agencies assisted.

There was, I think, some double dipping, but not as much, perhaps, as might be predicted. That was a one-time rebate, however, a rebate made through the tax system to people in the tax system. The Service also has had to cope with another form of rebate, one that more closely resembles the rebate proposed in the administration's energy program, and that is the earned income credit.

That was a broad-based refundable credit payable not only to taxpayers, but also to those who made no tax payments, with rather broad specifications to the entitlement of the credit. This was enacted in the Tax Reduction Act of 1975 and has been continued since.

In effect, it is a form of negative income tax.

In my prepared statement, pages 4 and 5, I discuss the problems that the Service had in the first year of the imposition of, or allowance of, the earned income credit through June 30, 1976, the Service gener-

ated about 6 million of these earned income credits, but less than 400,000 were of the new group, the group without tax liability, but entitled to claim an earned income credit.

This was a far smaller figure than predicted. Some predictions on the bill were that there would be 4 million in this group. There was another problem—not only those who refused to step forward or who did not step forward deliberately or inadvertently, but those who did not understand what was made available for them.

The number of returns with mathematical error increased very substantially, and this increase was primarily attributable, not to those who made errors in their favor, but to those who made errors against themselves. There were almost 4 million returns in the 1975 filing year containing errors against the taxpayer. These errors aggregated to over $300 million. Those errors were caught and corrected at the Internal Revenue Service's data processing center.

I do not know what the current facts are, whether more of those not in the tax system have stepped forward to claim the earned income credit by joining the Internal Revenue Service rolls and whether, as I hope, there are fewer errors in the returns of those who have claimed the credit.

I do not want to suggest that all 4 million of these returns in error against the taxpayer are attributable to the earned income credit. Surely not all, but a substantial number.

This is the problem of underclaim. The Internal Revenue Service is perhaps not the best delivery system of payments to the taxpayers or to nontaxpayers.

There is another problem, the problem addressed by certain of the economists who testified on June 6, that of duplicate payments, making sure that people do not claim too much or too often. The Finance Committee focused on this problem when it was considering the proposed, but dropped, $50 rebate that was supposed to be part of the tax reduction and simplification bill of 1977. It called, upon other things, for computer matches by the agencies given the responsibility for administering the rebate, with one exception. Those were payments to those entitled to aid to families with dependent children but not entitled to other payments.

Double dipping is a serious problem, a problem that cannot be entirely cured. The Internal Revenue Service has grappled with this problem in the positive tax system and the problem has not been solved, despite efforts to match, efforts to find out who is making duplicate claims or improper claims, and why.

But the problem can be reduced if the number and categories of those entitled to rebate should be limited along the lines, perhaps, of the action tentatively taken by the Ways and Means Committee; and if the Internal Revenue Service is called upon to make rebates to only those on the tax rolls, including those on the tax rolls because of their entitlement to, and claim for, the earned income credit.

The agency having primary responsibility for the delivery of a payment, a transfer payment, from the Federal Government to a particular person should, I suggest, have primary responsibility for the delivery of the proposed energy rebate to that person. And the agencies that are given this responsibility, Federal and State, should do their

reasonable best to match tapes, to try to have compatible, rather than incompatible lists, including social security numbers; and to try to take other actions reasonably calculated to limit multiple payments, even at the cost of some delay.

Trying to curtail duplicate payments will be costly.

Budgetary problems; the Internal Revenue Service, as I mentioned, has a very large job to do. I always felt that the resources made available to the Service to do it were not fully adequate to deliver the kind of tax administration that the public deserves.

If an additional responsibility is placed on the Service, particularly if the Service is under tight time constraints, then the Service will have further costs to be met out of the resources available to it. Unless these costs are offset by additional budgetary allowances, our tax system will suffer.

Finally, in reviewing the proposals and suggestions made at the June 6 hearing, I noted one of the witnesses expressed considerable concern about another aspect of the so-called double dipping, and that is whether those receiving indexed benefits——

Senator HASKELL. What is that, sir?

Mr. ALEXANDER. Indexed benefits, benefits which are indexed to the CPI, Consumer Price Index, such as social security and supplemental security income, might be compensated already through the operation of that index for the additional costs attributable to the energy program as recommended by the administration, and therefore might receive too much if given a rebate, particularly a rebate of the same size as that given someone who does not receive such indexed payments.

A problem with that proposition, as I see it, is that benefits increase, if I recall correctly, only if the aggregate Consumer Price Index for a particular quarter has increased by 3 percent or more, or over the CPI for the quarter being measured.

The energy costs which would be increased by the administration's proposal are a part, but only a part, of the aggregate that enters into the CPI, and I believe that is about 400 items in all. And the increased energy costs to someone receiving indexed benefits is not necessarily reflected in an increase of 3 percent in the Consumer Price Index and, therefore, an increase in benefits.

There will likely be some relationship, but the effect will not be automatic.

A suggestion that it is automatic appears to me, at least, to not be completely in accordance with the operation of the index, as I understand it. I believe that the Congressional Budget Office has examined the effect of the administration's energy program, including the effect of the rebate and concluded that the effect would likely be an increase in the index of far less than the 3 percent required to trigger an increase in benefits.

Another suggestion is that the rebates, being a payback of a direct tax, should be applied in a reduction of State sales and property taxes. Of course, sales and property taxes are also direct taxes.

Apart from this joint attribute of the energy and State sales and property taxes, I would suggest that this proposition, although having some basis in theory, is impractical and unworkable, and I hope that it is not adopted. A few States, of course, do not have sales taxes. I

think all the States have property taxes, but the property tax in New York State is determined as far down as the township level. Property taxes, of course, are a multiple of a rate and a base, and property taxes in Ohio are determined years in advance of their collection.

It would be unrealistic, indeed, to assume that all the jurisdictions having the authority to impose property taxes would automatically act to reduce their property taxes immediately by an amount which would be equivalent to the increased cost to the particular class or category of people subject to the energy program.

That completes what I have to say, Mr. Chairman. I would be glad to try to answer any questions.

Senator HASKELL. Thank you, Mr. Alexander, for a very thoughtful discussion of the problem. Let me go back to be sure that I understand the essence of what you said.

I gather from an administrative viewpoint, so long as the Service has a return form, whether it be a claim for earned income credit or otherwise, probably there is no difficulty in getting whatever rebate is determined to be back to the people. However, if the Service does not have the form, such as in the welfare programs, administrative problems will arise.

Basically, is that your thought?

Mr. ALEXANDER. Yes.

Senator HASKELL. Was it your further thought that possibly such agency as may be administering, let us say the welfare program, should be responsible for getting the refund to those people?

Mr. ALEXANDER. Yes.

Senator HASKELL. How are we going to prevent double dipping? Would there be a possibility of an agency sending their counter tapes to the IRS to compare them with the computer tapes maintained by the IRS listing those who have already received a refund? Is this the technique which you would use?

Mr. ALEXANDER. In the Federal system, the problem can be handled to some extent along the lines suggested in the Finance Committee's first report on the 1977 act, by requiring matches of computer tapes and, of course, by eliminating what otherwise would be a considerable impediment to such matches through amending the disclosure provision of the Internal Revenue Code, section 6103. Dependents cause problems, however.

When one turns to the State level, I think the situation is considerably more difficult. The Internal Revenue Service can respond, and respond in writing at a later time, to a question of compatibility or lack of compatibility of the identification systems used by all of the agencies, Federal and State, having responsibilities to make transfer payments and those of the Internal Revenue Service.

Looking at the problem from the standpoint of what the agencies should do, the agencies should do their reasonable best to develop, if they do not have them, compatible systems and match the systems. They should also require the applicant for a rebate to submit data in a form that does not add measurably to the already great paperwork burden, but data sufficient to show the applicant's entitlement to the rebate claim, particularly if the applicant is claiming a rebate based not only on his or her situation, but also a rebate for others, such as dependents supported by that applicant.

There should be some effort at verification of the data submitted, particularly if the rebate program is to be a continuing one and, as has been suggested by some, it will increase rather than decrease in size.

Senator HASKELL. Still on the same subject, but relating this only to the Internal Revenue Service—assuming that we did ask these other affected agencies to do the job of getting the money back to their people, could you give us a guess—I realize, Mr. Alexander, that it would just have to be an educated guess—as to what percentage of every energy dollar goes back to the people. By "energy" dollars, I mean dollars coming in from the wellhead tax, dollars coming in for the use of gases, boiler fuel, under the administration's proposal?

What percentage of each dollar collected, do you think, would go to the cost of administering the rebates to individuals? I realize this will also have to be an educated guess. I consider this to be very important in this whole proposal of the administration.

Mr. ALEXANDER. Perhaps about one-half of 1 percent. Looking at the problem solely from the viewpoint of the Internal Revenue Service, the Internal Revenue Service, this last fiscal year, collected $302.5 billion at a cost of a little over $1.6 billion, a rate of 56 cents per $100. If the rebate is made a fairly simple one, and one compatible with the information now in, or to be in, the data banks of the Service, then the cost of administering the rebate on the part of the Internal Revenue Service, if the Internal Revenue Service's duties are limited to making rebates to those in the tax system, the earned income credit recipients and taxpayers generally, should be not any greater on an incremental basis, as I see it, then the average cost. If anything, it would be less.

Senator HASKELL. That is not too significant, and that is good news.

To my great surprise at the June 6 hearing, there seemed to be a fair degree of unanimity that the per capita rebate was probably fair, if anything seemed to favor those with less income. I must say this came as a surprise to me, but there seemed to be unanimity.

Suppose that Congress should limit the rebate to people having adjusted gross incomes, let us say, of $15,000. Would this create administrative problems to the Internal Revenue Service?

Mr. ALEXANDER. If the rebate were limited to people with adjusted incomes of $15,000 and up, or down?

Senator HASKELL. $15,000 down.

Mr. ALEXANDER. So that would be a phaseout of $15,000?

Senator HASKELL. Yes.

Mr. ALEXANDER. The Service could administer that just as the Service administers now a phaseout of the earned income credit at $8,000 and could have administered a phaseout of the $50 rebate, such as suggested in the 1977 act at a somewhat higher level than $15,000.

The adjusted gross income figure would be in the system. The problem, I would suggest, is one of fairness. The $15,000 adjusted gross income taxpayer may be bearing a disproportionate share of the cost of the energy program. Without some relief from that cost, there would be a greater transfer than is now in our system toward those less fortunate than that $15,000 taxpayer.

They do not consider themselves particularly fortunate if they are trying to educate their children, and one might wonder whether the

rebate system which, if made on a straight per capita basis, would rather clearly favor the poor as contrasted to the lower middle income, middle income and upper income taxpayers.

It might, as suggested by at least one of the witnesses, be made proportionate, or progressive to some extent to remedy what would otherwise be a transfer of additional funds from one class of adjusted gross income people to another within the energy program.

Senator HASKELL. I realize some of the policy implications. Let me ask you this.

One gentleman at the June 6 hearing was Professor Hall who made the suggestion that the rebate could be in the form, really, of food stamps—I think he called them "necessity stamps." The basis would be energy coupons. This might be less inflationary.

I wondered if you had any comment on that, and also at the same time, if you would comment on the administrative problems, if any, presented by such a proposal?

Mr. ALEXANDER. I am not an expert on food stamps but I do recall something about coupons for energy, gasoline, back in World War II and even when we had a real war, not the moral equivalent of war, the system did not work very well, particularly close to Army posts.

I think there were probably more fake gasoline coupons circulating around and about Camp Chaffee, Ark., and Fort Campbell, Ky., than real ones. I would be quite troubled about how this proposition would work after the system was in effect for a time.

Maybe my trouble is based on recollection of things past that do not have any current validity. I am skeptical.

Senator HASKELL. Leopards do not change their spots, do they?

Mr. ALEXANDER. Some of the leopards are still around.

Senator HASKELL. Thank you, Mr. Alexander. You, as always, have made a cogent, brief, to-the-point presentation. Thank you, sir.

[The prepared statement of Mr. Alexander follows:]

STATEMENT OF DONALD C. ALEXANDER, OLWINE, CONNELLY, CHASE, O'DONNELL & WEYHER, NEW YORK AND WASHINGTON

My name is Donald C. Alexander and I am a partner in the New York and Washington law firm of Olwine, Connelly, Chase, O'Donnell & Weyher. I am appearing at the invitation to the subcommittee to discuss issues of tax administration involved in the energy tax proposals now before the Congress, in particular the proposed system of rebates. I am here solely in my personal capacity, not on behalf of any client of my law firm or my government agency.

When I was Commissioner of Internal Revenue, I tried to keep the Internal Revenue Service out of matters that did not involve tax administration. Administering and enforcing the tax laws of the United States, a job of vast dimensions, strains the ability and resources of the Internal Revenue Service, however efficient it strives to be. In view of the importance of the tax system to the United States and the need for equitable and effective tax administration, I hope that Congress will be slow to impose additional burdens upon our tax system and the agency which administers it.

This is not to say that the Internal Revenue Service lacks the capability to perform regulatory functions in areas directly related to taxes, particularly where there is long-standing historical precedent. Examples are administration of the regulatory tax rules applicable to exempt organizations and retirement plans. What I am talking about can be illustrated by the tax formerly imposed on white phosphorous matches. This tax and others like it were taxes in name only; they were not imposed for any revenue purpose but instead to prohibit the production of the taxed products.

Therefore, I suggest that the various proposals for the imposition of energy charges be examined to see whether they are more in the nature of regulatory or prohibitory charges than true taxes. If a proposed imposition has a broad base, a widespread effect and is measured like an income, sales or excise tax, it might well be called a tax and its administration assigned primarily to the agency having tax responsibilities. If, on the other hand, it has narrow effect, is subject to specialized limitations and is so measured as to equal or approximate the value purportedly taxed, is it a regulatory or prohibitory charge instead of a tax? If so, should its administration be assigned primarily to the agency having the basic regulatory responsibilities? In situations where this suggestion is adopted, presumably the obligation to rebate any portion of the regulatory charge would also be administered by the regulatory agency.

I am not optimistic about the adoption of the above suggestion. For long the tax system has been viewed by many as a primary means of achieving various economic and social goals, and, moreover, the principal energy charges carry a legitimate claim to characterization as taxes. If solution to the energy problem involves the collection of large amounts of revenue imposed for the purpose of increasing the cost of certain activities or products or of preventing windfalls, the next question is what should be done, and how it should be done, with the revenues thus collected. In this statement my purpose is not to debate the issue whether these funds, or part of them, should be rebated or whether they should be retained and used for various worthwhile purposes, such as mass transit or research into advanced energy technologies. Instead, I will discuss administrative problems in making rebates of the type and volume under consideration.

The administration has proposed that rebates be made on a per capita basis, with a refundable tax credit in a fixed amount for each taxpayer and dependent and with corresponding payments to be made to recipients of social security payments, supplemental security income, railroad retirement benefits, aid to families with dependent children and individuals not included in any of the other classes. The Internal Revenue Service would apparently be responsible for all rebates made through the tax system, but the Social Security Administration and State agencies would have a primary responsibility for rebates made outside the tax system. For the reasons discussed below, I think it important that the Internal Revenue Service not be made responsible for the delivery of rebates to those who are not in the tax system.

The Internal Revenue Service has recently attempted to cope with a broad-based refundable credit, payable not only to taxpayers but also to individuals who did not contribute to the tax system. The Tax Reduction Act of 1975 contained an earned income credit, in effect a negative income tax. Through June 30, 1976, the Service generated approximately 6 million of these earned income credits applicable to the year 1975, but despite extensive publicity less than 400,000 individuals without tax liability filed to claim their credits. This number was far smaller than expected. Also, the number of returns with mathematical errors increased by about 3 million over the number of such returns in the preceding year, and two-thirds of this increase represented erroneous overpayments by taxpayers. Correction by the Service produced decreases in liability or increases in refunds, primarily attributable to the earned income credit, on almost 4 million returns aggregating over $300 million.

This experience indicates that those not on the tax rolls, or those on the tax rolls but baffled by the complexity of the return, frequently do not claim benefits in the form of special credits or rebates provided for them through the tax system. Some reject benefits, conditioned, as they see it, upon their joining the IRS mailing list. If one is trying to make sure that all people obtain the rebates and credits intended for them, one might be well-advised not to use the IRS as the transmittal agent.

Another problem is trying to make sure that people don't claim too much—that they don't "double dip". In its consideration of the proposed (and abandoned) $50 rebate which was to have been a part of the Tax Reduction and Simplification Act of 1977, the Senate Finance Committee expressed deep concern about the problem of double payments and tried to reduce such payments by providing for the matching of tapes among the Internal Revenue Service, the Social Security Administration and the Veterans Association. One can reasonably expect that a program calling for an annual rebate rather than a one-time rebate will result in exacerbated problems of double (or more) claims for payments, particularly if each payment is sizable.

It is unrealistic to expect that the problem of multiple payments can be eliminated entirey. Neverthelsss, multiple payments should be reduced and the delivery process improved if the following suggestions are adopted:

1. The number and categories of those entitled to rebates should be limited. Payments should be made only to adults, particularly if the payment is outside the tax system. The Ways and Means Committee has tentatively adopted this approach. Adjustments could be made in the size of the rebate, if deemed necessary to compensate for any decreases in the aggregate payment otherwise receivable by a family group drawing AFDC benefits, for example.

2. The Internal Revenue Service should be called on to make rebates only to those on the tax rolls, incuding recipients of the earned income crdit.

3. The agency, Federal, or State, having a primary relationship with, and responsibility for dealing with, a particular class of rebate recipients should be responsible for making rebates to such persons.

4. Agencies assigned responsibilities to make rebate payments should match tapes and take other actions reasonably calculated to prevent multiple payments, even if such actions delay rebates and increase administrative costs somewhat.

Budgetary considerations should not be overlooked. If substantial unfunded responsibilities, such as administering energy taxes and rebates, are imposed on the Internal Revenue Service, it can meet these responsibilities only at the expense of tax administration generally. The Service needs to do more, not less, to make our tax system work more equitably and effectively. It needs to give the millions of Americans who comply with the system the assurance that those who don't comply will be called on to do so. Any imposition of additional burdens should be matched by the assignment of additional resources necessary to meet these burdens. Other agencies have similar needs.

Finally, I have read the constructive papers submitted to this subcommittee at its hearing on June 6. Mr. Rudolph Penner's statement points out the desirability of a somewhat progressive rebate structure and discusses the tax squeeze now imposed on the middle class. I hope that his comments and those of others will be carefully considered and that the net effect of the energy proposals will not be a further increase in the heavy tax burden borne by the middle class.

Senator HASKELL. Our next witness is Daniel G. Smith, president; National Federation of Tax Administrators and also the Administrator of the Income, Sales, Inheritance and Excise Taxes, State of Wisconsin.

I understand you are accompanied by Mr. Robert Milbourne, director of Research and Tax Policy Analysis of Wisconsin.

It is a pleasure to have you.

STATEMENT OF DANIEL G. SMITH, PRESIDENT, NATIONAL FEDERATION OF TAX ADMINISTRATORS AND ADMINISTRATOR, INCOME, SALES, INHERITANCE AND EXCISE TAXES, STATE OF WISCONSIN; ACCOMPANIED BY ROBERT MILBOURNE, DIRECTOR OF RESEARCH AND TAX POLICY ANALYSIS, WISCONSIN DEPARTMENT OF REVENUE

Mr. SMITH. Thank you, Mr. Chairman. Unlike Former Commissioner Alexander, we do not, unfortunately, have a paper to submit. You may wish to turn your attention some day to the delivery of the mail from the east coast to the Midwest. We just got your letter on Friday afternoon, although we have been in contact with members of the staff about the general content and some of the specific items requested that we review. We did not have time to prepare for it.

I, in my brief time before you, will wear two hats, one as representative of State tax administrators of the various States, and also as representative of the State of Wisconsin. My colleague, Mr. Mil-

bourne, will speak more directly of events occurring in Wisconsin and other States.

We have no official position on the Carter administration's energy package other than to acknowledge that there is such a need for the considerations that you are addressing yourselves to today. My part of the testimony is to respond to those proposed methods dealing with recycling energy tax revenues with special interest in the two alternatives that were presented to you on the 6th of June, those being that of Mr. Okun and Mr. Klein, one dealing with the recycling through a State sales tax; the other, a redistribution through a property tax system that would involve the measures that are levied by the local units of government.

Mr. Milbourne, following my testimony, will share with you some of the experiences that States have had in this matter of distributing revenues to local governments.

The States have been perhaps a little bit more expansive in their innovations than the Federal Government in these certain areas.

Now, onto the first thing I would like to touch on, perhaps concentrate on, the proposal that has been made to the committee that some inflation neutralizing system would modify State sales taxes. As I understand that system, very briefly for review, the States would be given the option, on a 1-year contract basis, of receiving something like a $50 per capita credit and in exchange for receipt of federally directed moneys, would agree to modify in an equal amount their sales tax collections.

This would be based upon some good-faith arrangement between Governors and mayors not to increase those taxes during a period of 1 year. Then, as the taxes come in from the various energy tax sources, the wellhead equalization tax, gasoline tax, industrial uses tax, and so forth, there would be a renegotiation with the States or the local units of government to further modify their sales tax bases or the sales tax rates.

One of the things that I think was stressed by the principal author of that proposal is the need for a contemporary basis of getting this money back, with a counterinflationary effect, to the various communities across the land. I have several cautions and objections to the proposal that have been made by the author of this sales tax proposal.

There are five States—Alaska, Montana, Oregon, Delaware, and New Hampshire—which do not have sales taxes. He sort of brushes this aside and says you can use some other mechanism in these States.

If this program were instituted and you take a look at the taxes that are in effect in those particular States, they would only have several places to go—their own income tax, which all but one of those States has, or you would turn to other excise taxes, such as the taxes on cigarettes, liquor, or on gasoline.

I am not so sure that this kind of per capita credit that would be funneled back to the States would have an equal effect, say in Alaska, if it were used to abate gasoline or cigarette taxes there, as it would in Wisconsin or New York or Colorado to abate or ameliorate the effect of sales taxes. That is a problem I do not think can be brushed aside easily.

There are differences in bases and rates. In our State, for example, we do not impose a sales tax on groceries, which takes a great deal of

the regressiveness out of the sales tax. In other States, in many other States, there is a tax on groceries.

In our State, our rate is 4 percent. In California, there is a combined rate of 5 percent. In certain States in the East, it is as high as 7 percent and there are different bases subject to tax.

A further complicating factor in administering such a system is that there are a number of States that have a local option or a locally mandated tax—in California, it is known as the Bradley-Burns Act, which adds a percentage point to the effective State rate. Around the San Francisco Bay area, they have the Bay Area Rapid Transit tax for certain counties there where there is an additional half percentage point in the rate.

In New York State there is a local option tax at different rates and on different bases. Automobile tires, for example, may be a tax subject to sales tax in Binghamton—I use this as a hypothetical example—and may not be in Albany or New York City.

And the rates that are imposed locally within New York—and Alabama has a similar system—are not uniform. This would further complicate any sort of distribution back to the States and localities. This will have to be taken into consideration.

By way of example, I figured the following on the plane coming in last night. If a recommended $50 per capita credit would go to Wisconsin, with a 4-percent sales tax, that would mean, we would wind up with a sales tax rate of 2.44 percent.

Now, clerks in retail establishments have a heck of a time handling 4 percent. I do not know what they would do with this odd percent. To modify this, you would have to make that sort of an adjustment. Then you would go to the legislature and say you want to get it up to 3 percent, but live up to a commitment to lower the taxes.

Senator HASKELL. Think what this will do for sales of pocket calculators.

Mr. SMITH. It could have a beneficial effect there, Senator.

What you would then have to do is to raise it to the next highest full point. You would go to the legislature and say, OK, here is the plethora of the items that we now tax. To meet our commitment we made to the Federal Government that we are going to reduce our sales taxes, we will go to 3 percent tax, but we now need about another half-point. That we will offer up in the way of exemptions to the business community, the farming community, and so forth. The public interest groups would argue vociferously for their own pet projects. I do not think State legislatures would welcome the opportunity to react to these entreaties.

The other matter is the technical detail. Many States, ours is one of them, we are on a biennial budget. I guess fully half the States must be budgeted on a biennial basis, so it would be very difficult for us to negotiate a quid pro quo proposition with the Federal Government on a yearly basis in this matter.

Mr. Chairman, I would recommend reference to a recent issue of the U.S. Department of Commerce/Bureau of Census preliminary report on State tax revenues. It shows for the quarter ending March 1977 State sales tax collections for that quarter for a number of States, being 42 in number, with the quarter that ended March 1976. With very

few exceptions, the increases shown over the prior year period run from 15 to 16 percent.

In a State like Wisconsin, we collect roughly $600 million in sales tax. Inflation has had an effect on our sales tax collections. Additional moneys are coming in to the State treasuries. And, if a Governor of our State, or a Governor of another State asks a tax administrator, what do you think of this proposition that we accept from the Federal Government this flat amount, I think he would be remiss if he did not say, Governor, one of the things you may be giving up is this 10- to 15- to 16-percent growth rate that the State has been experiencing in additional State revenues, badly needed revenues.

I do not think that Mr. Okun's proposal addresses itself to that problem. I do not think it would be politically desirable, or realistic.

Senator HASKELL. Let me ask you this. Is there any particular option that you feel would be viable where the State tax system would be used to recycle energy revenues?

Is there any system at all that occurs to you?

Mr. SMITH. May I defer to Mr. Milbourne? He will give you some ideas in this area.

I will not spend much time—there is one other issue I would like to address, and Donald Alexander has already talked about it. This is the proposal to somehow ameliorate or modify property tax burdens.

As you know, one of the major criticisms of property taxes is their uneven administration and uneven use of that kind of revenues across the country. We can attempt to do something with those at the State level because State revenue departments have some power of management over the local officials with respect to the assessment of property. I am not so sure you are going to get the Federal Government, through the States down to local units of Government, being sure that you are making distributions on an equalized basis. That would be a horrendously difficult and unmanageable thing to achieve.

One thing that Mr. Okun did point out, there has to be sort of a contemporary payback. This is one of the disadvantages of using the property tax system for recycling Federal energy taxes. Usually there is a date chosen when we value property. Between then and the time tax bills are mailed, all kinds of things happen at the local level. You would funnel back today's dollars for tomorrow's needs. Sometimes there are long timelags, which I think can depress the effects of any such rebate system on the inflationary impact of Federal taxes proposed.

In conclusion, I would think that any kind of system for recycling energy taxes has to be one that is simple. The tax system is already much too complex. People do not understand. They have difficulty complying with it. It has to be efficient and cannot have substantial burdens in administration. And it needs to be equitable.

Thank you.

Senator HASKELL. Thank you very much, Mr. Smith. I would like to hear from you, Mr. Milbourne.

Mr. MILBOURNE. Thank you, Mr. Chairman.

I would like to talk about some options that you might wish to consider and some options that I think are now working in the various States that have some hope for this type of a redistribution of Federal

money or State money. In our case, of course, our experience has been mainly with State-collected revenue and returning that money to the local units of Government or individuals directly.

The various States have had a great deal of experience since the mid-60's or so when some new, innovative ideas have popped up in the various States to try to return money, either directly to taxpayers or to local units of government to offset income taxes or property taxes. The one best example, of course, is the so-called circuit breaker which was pioneered in Wisconsin in 1964 and has been picked up by 25 other States since that time.

There really are——

Senator HASKELL. I heard the word "circuit breaker." I hate to confess my ignorance. Tell me, what is this circuit breaker concept that everybody talks about.

Mr. MILBOURNE. The circuit breaker concept is one that takes a look at two different types of taxes—in our case and most other cases, it's income tax and the property tax. Through the income tax system we provide a circuit breaker to rising property taxes by doing something like this. If a property-tax payer has a property tax bill of a certain amount of money and an income of a certain amount, we will provide some percentage relief against that person's property taxes by the income tax.

For example, in our State, we now have a program that allows recipients to about $10,000 of Wisconsin's definition of income, a little broader than the Federal definition, and allows property taxes up to $900 to be credited to the taxpayer.

He fills out a little part of our form and he writes down his property taxes, as long as they do not exceed $900, and then looks at a schedule which we compute for him and according to his income he is given a certain percentage cut against that property tax amount.

The reason it is called the circuit breaker, the effect of it, or intention of it, is to offset increasing property tax rates, and they are inversely related, so you get a progressive credit at the end that helps lower income people rather than higher income people.

The circuit breaker has gone a great distance since the mid-60's. In the Wisconsin Legislature this session, we have gone a major step in overcoming what had been some complaints about the circuit breaker, that they do not direct enough money to the right people; middle-income people, for example, have traditionally been left out of these programs because the States could not afford such an expensive program to get to higher and middle income people, so it is basically lower income people.

The elements of the current circuit breaker in Wisconsin which I think is going to be as catchy a program as the original program was in 1964, is one, it gets after nonfilers to allowing people who would otherwise not have to fill out a tax return. What we call in our State, our circuit breaker is called a homestead program. They are permitted to fill out a homestead return in lieu of an individual income tax return.

Out of approximately 200,000 recipients in our State, there may be, out of a total 200,000 homestead recipients we have, approximately one-half of them are nonfilers. That goes a long way towards getting at the nonfiler problem, of course, and gives tax relief to many low

income people you do not get out through the normal income tax system, because they do not file in the first place.

The second thing about the circuit breaker accounts that is helpful, it gets at both homeowners and renters. We compute in our circuit breaker program a percentage of rent that constitutes property taxes, in our case, 25 percent of rent will constitute property taxes, and we use that number instead of the property tax number that we use for homeowners. It gets at not only homeowners, but renters.

The good thing is that it now has a family-sized factor which we have been hoping for in our State for a long time and finally our legislature has enacted one in this session where you permit additional credit as family size increases to the size of four members. We do not provide additional relief after the family is four members or larger, but up to four members there is an additional factor in the formula that allows families that have one, two, three dependents to get additional credit, so the size of the family is taken into consideration. It is a refundable credit. The people who do not have a tax liability in the first place will continue to get the credit.

The program has been expanded in a new area in the case of farm tax relief. Many mid-Western States, I would think, and other Western States, the problem of rising property tax for farmers have been a very concern of State legislators.

In our case, it has been addressed with a new circuit breaker, some of the elements of which I would like to see in our own circuit breaker program. The way this one works—there is a threshold by which you become eligible for the program. That threshold increases as your income increases. The richer you are, the more tax effort you have to put out to become eligible for the program.

At the bottom end, if 3 percent of your income goes towards property taxes, you become eligible for the program. As your income rises, a higher percent of that income is required to go to property taxes before you are eligible.

A person over $20,000 in our State must have 10 percent of his income going towards property taxes before they are eligible. Once you meet the threshold, there is another factor in the formula that says we will provide relief on the excessive property taxes that you have over the threshold in a progressive fashion. Lower income people receive, for example, an 80 percent tax credit on anything exceeding 3 percent going to property taxes. As income rises, that percentage will fall.

The amount of credit will be 60 percent or 50 percent at the higher income levels.

Senator HASKELL. How are we going to relate this to rebates of energy taxes?

Mr. MILBOURNE. The suggestion is that it may be time for the Federal Government to consider its own circuit breaker. The States now, I think 25 or so have them; several States are fairly close to adopting them. Personally I think the Congress should consider some type of Federal circuit breaker that may, in lieu of the State circuit breakers that now exist or have its own circuit breaker some how connected with some tax, for example, the energy proposals now before you. A circuit breaker now has many things going for it.

It is now the type of innovation in taxes that retains simplicity and also gets at many of the problems related to later nonfilers and that sort of problem. It may be time for the Congress to consider going towards some sort of circuit breaker.

Senator HASKELL. It would be pretty tough to have a circuit breaker when the relationship is between Federal income tax and local income tax. Where would we put the circuit breaker? What factors would you suggest?

Mr. MILBOURNE. For example, an experience that the State took the property taxes and income tax, the Federal income tax could certainly promote a circuit breaker based against property taxes that individuals pay.

Senator HASKELL. To me, that would present a real problem. Some States, as Mr. Smith mentioned, five States do not have a sales tax. Obviously they have very high property taxes, or we assume they do.

You see my point, do you not?

Mr. MILBOURNE. That is a definite concern, no question about it. You do have very different types of property tax assessments locally. That would create a problem as well.

You need not necessarily pick the property tax. You could create a circuit breaker against some measure of all State and local taxes, which might be another way to handle it since most State and local taxes are deductible for Federal income tax purposes. You could use a measure of a total of State and local income taxes and use that kind of concept.

That may make more sense for the Federal Government than the State government.

Senator HASKELL. That does have a good deal of merit. Then those people who live in the high tax States would take care of their citizens by giving them a break—I assume Wisconsin is one of them. However, some States do not take care of their citizens and would not give them a break.

Mr. MILBOURNE. That has a great deal of appeal to Wisconsin as well. There is one concept that, it seems to me, has a little bit more innovative thought behind it than the per capita on the tax system as proposed by the Carter administration.

I have found the per capita rebate a viable option. It is one that does have some progressive elements and is fairly simple to administer. I think there are some problems with it that have been pointed out earlier, particularly the nonfiler problem and who do you give relief to.

But another area I wanted to mention briefly, if the Congress decided not to send the money back to individuals, but rather to units of government, I think there is a great deal of experience at the State level throughout the country in using money from the Federal sources and State sources to relieve local units of government through tax aid systems.

In Wisconsin, for example, we have two major property tax relief programs. I hesitate to call them property tax relief programs. In essence, they are not just property tax relief programs.

For example, we distribute tax collected money back to local units of government on a basis of tax effort including not only property tax but any locally raised tax. The formula is relatively simple. It takes all of the revenues that are collected at each municipal level or county

level and we total that amount of revenue for each person and each local unit and county and total that for the State as a whole and provide relief back for local units of government in proportion to their proportion of the total revenues that are collected by local units of government.

There are some other factors, including a per capita factor, and some mill rate factors, high mill rate areas, get additional relief. These programs are developing all over the country, and in Wisconsin, I think in particular, have done an awful lot to try to equalize the tax burden among the local units of government.

In our case, we have had an equalized formula of this kind for about 7 years. We are now at the point where our local units of government are moving very close to the same mill rate on a full value basis. In 1970, for example, we had a situation where the disparity between local mill rates for municipality to municipality were so gigantic that our State legislatiure stepped in and adopted an equalized formula.

Today, 7 years later, we are in a situation where 1,800 municipalities have mill rates within 5 percent of each other, and that is great progress from a period of 7 years ago when property tax rates would vary as much as over 100 percent among municipalities.

If the Congress decides to use some source of money for the increased energy taxes to distribute back to units of government, I think the States could use that money very effectively in distributing back to local units of government to offset local tax burdens which I think in the States is the No. 1 priority you will find among most State governments. And that might be another area that the committee might wish to consider.

The choice is really between local units of government or to individuals. If you go the route of individuals, I think the circuit breaker kind of concept is worth looking into. It is time for the Federal Government to consider it anyway, and if not, if you decide to send that money back to local units of government and have them distribute money back to localities, I think there are very fine equalizing formulas that realize tax efforts and local needs that can do a lot to eliminate the disparity in property taxes and other local taxes that exist around the country.

Senator HASKELL. Thank you, Mr. Milbourne and Mr. Smith. I asked the questions I had in mind as you went along.

I appreciate your coming here very much. I am sorry our postal system operated in a snail-like manner. Thank you for being here.

Our next witness will be the Honorable Jerome Kurtz, Commissioner of Internal Revenue.

STATEMENT OF JEROME KURTZ, COMMISSIONER OF INTERNAL REVENUE

Mr. KURTZ. I am accompanied by Edmund St. Jean, with the Coordination and Design Branch of our Data Services and Russell Dyke, Director, Returns, Processing, and Accounting Division. They have the expertise in this area.

Mr. Chairman, I apologize for not having a statement in form for distribution. I had a family emergency that took me to Philadelphia

for a few days and it was not possible to have my statement reproduced.

I am pleased to be here this morning. This is my first appearance before a congressional committee since assuming office, and I hope it will mark the beginning of a beneficial relationship, one in which we at the Service, will be of continuing assistance to this committee on matters concerning its mandate.

In that spirit, I am happy to present my views of the administrative aspects of refunding the taxes involved in the National Energy Act now being considered by the House Ways and Means Committee.

The wellhead tax portions of that act would provide that the revenues from this tax be refunded to the public. There are, of course, a variety of possible methods of refunding this tax to the public. I would like to put aside the economic effects of various patterns of refund and discuss only the administrative aspects, which are the primary concern of the Internal Revenue Service.

If the income tax system is to be used to refund all or part of the energy taxes, I would strongly urge that a method of computing these refunds be used that does not necessarily complicate the tax forms and the preparation of those forms by the public.

I would also urge that the method adopted be one easily understood by the average taxpayer and one which will not impose substantial additional burdens on the already-stretched resources of the Internal Revenue Service.

The Ways and Means Committee has tentatively decided that the well head tax will be refunded through a tax credit in a fixed amount generally for each taxpayer. That is, there would be one credit for a single person's return, two for a married couple, and this would be so regardless of the number of dependents.

An exception would provide two credits for head of household returns.

The administration's original proposal would in most instances have provided a credit for each exemption claimed on the return. While one may debate the relative equities of these two proposals, it should be recognized that the Ways and Means proposal would increase the complexity of the tax system where the administration's proposal would not.

Senator HASKELL. The Ways and Means committee proposal?

Mr. KURTZ. It would increase the complexity of the tax system.

The reason for this is that the Internal Revenue Code now provides a credit generally of $35 per exemption, so if we use the same standard for the wellhead tax refund it would simply alter the amount of that credit, but the criteria would be the same. There would be no additional line on the tax form and no additional instructional material would be required.

The Ways and Means Committee formulation would require an additional computation on the return, because the credit would be available on a different basis from the existing credit.

I believe, unless there is some very substantial gain in equity to be achieved, that we should not add to the already considerable burden on taxpayers in preparing the returns.

Senator HASKELL. Let me see. You have to put something on the form.

I thought the idea was that this money got scooped up and then checks happily got written to citizens in specified amounts. You do this annually on your 1040.

Mr. KURTZ. Yes.

If it followed the existing pattern of the personal credit, which is now basically $35 per exemption claimed on the return, it would be built into the withholding tables in estimating the amount of tax due on a particular return at a particular wage level in that particular year. The existing credit, instead of being $35, would simply be increased to, let us say, $55. It would be computed in the same way and therefore would add no complexity.

Senator HASKELL. What is the difference, from the administrative cost viewpoint, between building this additional credit in your withholding tables and providing for just a line, I guess, on the return as opposed to just sending checks?

Mr. DYKE. The difference results from processing additional data through the system as opposed to using existing data. Additional data means additional cost. Use of existing data, in this case increasing a dollar amount for the current exemption credit, requires no added processing steps to be performed. The cost of processing a new field of data through the system could be in the neighborhood of about $2 to $2.5 million.

Senator HASKELL. You are talking to a layman. Let us try to do it at a grammar school level.

Each person, or each dependent, is entitled to a certain amount back. The suggestion is that that amount be a credit to the individual filing the return and claiming dependence, is that right? Is that the suggestion made now?

Mr. KURTZ. Yes.

Senator HASKELL. So, if I have three dependents, I get four of these amounts, whatever these amounts are. Since I do not get them by check, apparently. How do I get them?

Mr. KURTZ. If I may interrupt, Mr. Chairman, right now on the tax return there is a credit of $35, generally $35 per exemption. If you filed a return with four exemptions on it, after you compute everything else you multiply four by $35 and deduct that from the tax liability. That is the situation now and people do that on their returns.

The amount of that credit will be built into the tables, the tax tables, for those who use the tax tables starting next year.

Senator HASKELL. $35?

Mr. KURTZ. Yes.

That simply reduces tax liability, it would also reduce withholding amounts.

Mr. Chairman, I believe you asked another question, if I understood you correctly—What the cost would be of ignoring the tax return in itself and simply writing checks.

Let me preface all estimates by saying they are estimates and subject to wide variations.

The estimate to process the additional information from a claim form, to run it through the master file, to develop a list of eligibles, write the checks and mail them out could range from $3 to $6 per check depending on the need for reference to a previously filed return. If

a special claim form is not used, we are able to stay within the present structure of the tax system requiring no additional information. In this case the per item cost is significantly reduced to a 7 cent per item processing cost for the Service, plus 13 cents postage and some small additional administrative costs to Treasury disbursing.

Senator HASKELL. Now, I think I am beginning to follow you. If you do it as suggested by the administration, you build that into your tax tables. In addition to those tax tables, you are going to have to have a little more complicated tables, you are going to have to have tables that say: one exemption, two exemptions, three exemptions, et cetera?

Mr. KURTZ. The existing tables do provide that.

Senator HASKELL. I am thinking of the long form.

Mr. KURTZ. The tables that will be used for 1977 purposes will take into account the individual exemptions, the $750, the $35 credit and the standard deduction. As a matter of fact, under the new tables, the taxpayer, if he is eligible—and there are income limits—and if he is a standard deductor—will simply determine the amount of his income and go right to the tables. The tables will take care of the standard deduction, the personal exemption, and the credit.

Senator HASKELL. It would appear to me that administratively, the simplest way is to just give this per capita per exemption flat amount. If you start talking about all people under an adjusted gross income of such and such get x; between $10,000 and $15,000 get y; and between $15,000 and $20,000 get z, I assume you are running up your administrative costs.

Mr. KURTZ. Yes. It runs up the administrative costs somewhat, although the data transcribed would permit that calculation. The problem is that it adds to the complexity of the return. Once the number is written on the return, our processing costs do not rise substantially within those limits, but it puts a burden on the taxpayer in preparing the return, if he is in that phase-out amount, to compute.

It is simply a more complicated computation and the instructions are more complicated. It creates a burden on taxpayers. Once the return comes in with the information on it—a number is a number—we can handle it. The error rate, though, will surely be higher and will generate additional correspondence where the taxpayer's computation does not agree with our computation, and certainly will generate substantial telephone and in-person inquiries, which are expensive to handle.

Senator HASKELL. From general processing, it does not make a lot of difference?

Mr. KURTZ. It adds to internal processing, when you put another line on the return—another bit of information that must be keypunched, must be computer stored, and each keypunch operation applied to 85 million returns, each time that key has to be pressed one more time it is an expensive operation, plus computer capacity to store more information.

Senator HASKELL. I have interrupted you.

Mr. KURTZ. Unless there is some substantial gain in equity, I would strongly recommend the simplest system possible. This is particularly so in light of the fact that the energy bill would already have added

a new item to the tax return in the form of the home insulation or solar heat credits.

To the degree that persons benefiting from the refund program are selected from sources other than the tax rolls—for example, the social security system, the railroad retirement system, the AFDC program—the probability exists that these persons will receive multiple benefits to the extent that they qualify under more than one set of criteria.

It may be that such result is consistent with the intent of the program. However, if the intent is to preclude such double dipping, the use of criteria outside of the tax system greatly increases the administrative complexities.

Senator HASKELL. Mr. Kurtz, I do not think anybody is going to want to have double dipping. I would assume we are just trying to get a certain amount of money back to each individual citizen.

Mr. Alexander said that once you, the Internal Revenue Service, have to give money back to people who do not normally come through your files, returns or otherwise, it increases your administrative burden. I would like to have you comment on that, and also his further suggestion that another agency which deals with persons listed in your files be responsible for getting the money back in some kind of way to prevent double dipping.

Would you comment on that?

Mr. KURTZ. Part of the problem is in matching tapes—for example, in matching our tapes with social security tapes and seeking to eliminate double dipping in those two systems. Depending on the criteria, it may be we have recipients who are not identified the same way in the two systems.

For example, if we have a social security recipient who is a taxpayer who files a return, that type of duplication is easily picked up. We have the taxpayer's name and social security number and the tapes apparently will talk to each other and identify those cases.

Where, however, the credit is made available to a taxpayer who is a social security recipient but who appears as a dependent on the return, then we have no way of identifying that person because we do not require social security numbers of dependents.

Senator HASKELL. How is that going to be picked up.

Mr. KURTZ. That is one of the very difficult problems, and it runs throughout any of the double dipping provisions. It is possible to eliminate large blocks of double dipping, but virtually impossible—let me say at least that the costs would be astronomical—to eliminate it entirely.

Senator HASKELL. Really, somebody could be a dependent and probably getting social security—maybe an elderly person—but you would not be able to pick up this type of person?

Mr. KURTZ. That is right.

Senator HASKELL. What is this?

Mr. KURTZ. When you go into more systems, as the bill goes into the task of defining the group receiving the distribution, the problem becomes more intense. This is especially so when AFDC is part of the picture.

Senator HASKELL. I wonder if you could submit this for the record because I think it is vitally important. Let us assume that eventually the Congress decides to give it to every citizen in the United States, making it as broad as possible. Then, could you give us for the record

a listing of the categories that you people would not automatically be able to pick up?

Mr. KURTZ. In other words, if you took the tax system as the primary method to make as broad a distribution as we could through the tax system, who is left out?

Senator HASKELL. That is a good way of saying it. I suppose somebody can put some numbers together to show how many people are in the who-is-left-out category. I will not put the burden on you.

Mr. KURTZ. That is probably not a very difficult burden. We know how many tax returns are involved. If we assume we are covering exemptions on tax returns, we would have that number. If you are trying to do it universally, that would be a comparison by population.

Senator HASKELL. There will be people who do not even file a tax return.

Mr. KURTZ. That is a large number.

Senator HASKELL. We need to know how many folks you will pick up and then that will tell us what fields this does not cover. I would like to ask you to do that.

Mr. KURTZ. We can tell you the total number of exemptions claimed on all tax returns filed and that would be fairly close to a per capita count of those whom we can account for. There may be some duplication but not many, because of people who are claimed as dependents and who also file returns. We could probably estimate that number, too.

From that data you could determine a percentage of the universe that we would cover. Then, of course, the problem becomes what other systems are there that would include these people. It may be possible, in the end, get to some group, the size of which I do not know—it perhaps could be estimated—of people who are in no system. They are not taxpayers, not Social Security recipients, not welfare recipients, simply not in any of the broad systems that exist in this country.

Senator HASKELL. People who are not in the system, I do not know how we will get to them. I think we are talking about the same thing. What I am trying to figure out is how many people and in what categories are these potential double dippers. That is really what I am trying to get at.

Mr. KURTZ. Yes.

[The following was subsequently supplied for the record:]

It is estimated that in 1975 approximately 15 million people were not covered by tax system records. This estimate was based on data from statistics of income—1975, individual income tax returns and population data prepared by the Bureau of the Census. The derivation is presented below:

	(In millions)
1. Resident population, United States December 1975	213.9
2. Exemptions, other than age and blindness:	
a. Primary	82.2
b. Spouse	44.3
c. Other rependents	75.5
d. Adjustment for duplicate dependents	−3.0
e. Total	199.0
3. Total population not under tax system (1–2e)	14.9

NOTE.—Adjustment for duplicate dependents is a rough estimate based on the response to the "revenue sharing exemptions adjustment" question on the 1972 tax returns as tabulated in statistics of income—1972, Individual Income Tax Returns.

The conditions under which "double dippers," or recipients of two or more rebates, would not be identified are centered around names and social security numbers (SSN). The Service must have each qualifying individual name and validated SSN recorded on the tax files and secure the same from other paying agencies to fully eliminate "double dippers." The Service does not record dependent names nor require dependent SSN's. Most agencies, Federal and State, either do not use the SSN in their filing systems or do not validate the SSNs' when used.

Some conditions under which double payments could not be detected under current Internal Revenue Service systems are:

(*a*) Children filing separate returns and who were claimed as exemptions on their parents' returns.

(*b*) Dependents claimed as exemptions on a return and who also received benefits from some Federal program.

(*c*) Coordinated programs involving any agency that does not have computerized records, i.e., programs of aid to families with dependent children, state administered black lung programs, etc.

(*d*) Coordinated programs involving any agency that does not use SSN's as a primary means of identification or does not validate the SSN's with the Social Security Administration.

(*e*) Delinquent tax return filers.

(*f*) Fiscal year filers (July–December) whose returns would not be on the tax files for cross-checking.

Senator HASKELL. Thank you.

Mr. KURTZ. I would just like to make a few more points.

If the Service is to be responsible for minimizing multiple payments, and this goes to the question that we were just talking about, it is important that any refund proposal be based on payee identification which is common to all participating systems.

By this, I mean the ways in which individuals are computer-identified in one agency are usable by the computers of the second agency. For example, even though some of our computerized information is compatible with the Social Security Administration, some is not. This would be so, for example, with respect to dependents who are not identified as a number.

Senator HASKELL. If we use this per capita rebate system, this may be a one-shot thing. If we are going to use this, it is conceivable that we would have social security numbers of dependents.

Mr. KURTZ. It is expensive to put in the system, a nine-digit number for each exemption. That is nine key strokes for each exemption. This amounts to a very substantial amount of money for putting the information into the system and storing it.

It is possible to do it, but it is a significant item, and would demand significant additional keypunching processing personnel to do it.

Senator HASKELL. Could you submit a cost estimate for the record?

Mr. KURTZ. Yes.

[The following was subsequently supplied for the record:]

The estimated cost to the Internal Revenue Service for requiring dependents social security numbers and the validation and other related processing is $48.9 million for the first year. The additional cost to update the information annually cannot accurately be estimated from our current data.

Mr. DYKE. There is another problem. Recording social security numbers into our system requires a validation process. Validating social security numbers is important as individuals may insert an incorrect number on their return either through a transposition error, or simply becaused they believed the number to be correct. To prevent

recording numbers in the system that are not the numbers of the taxpayers, we communicate with the Social Security Administration for identification of any erroneous numbers. We then correspond with the taxpayers involved to resolve the problem.

Injecting social security numbers for dependents is therefore much more of a process than just recording that number. There would be some correspondence with the filers.

Mr. KURTZ. We have all been involved in that correspondence at one time or another and we know how expensive it is.

Another problem is that in many cases the IRS computerized records cannot be interfaced with the related State records of recipients of the various Federal benefit programs, such as AFDC. In some States, there are not computerized records at all.

To the extent Congress should use AFDC as a class, the matching and elimination of double dipping becomes extremely difficult, in some cases impossible. Even if the program is administered entirely within the framework of a Federal tax, the possibility of double dipping would not be fully eliminated. If a rebate were paid to each taxpayer in an amount based upon the number of personal exemptions, duplicate rebates would be made in the case of a dependent child that also filed tax returns on his or her own behalf. This is probably not a very substantial problem, but it exists.

If a program is developed to include individuals who are not either in the tax or any other data system, such as social security, AFDC, the principal problem becomes how do you reach those individuals—those outside of any major system.

If such individuals are expected to apply for this benefit, I strongly urge that such application not be made to the Internal Revenue Service. Such an additional burden would seriously interfere with the service's basic mission of administering the tax system.

That is the end of my remarks. We would be happy to answer any questions.

Senator HASKELL. I think, Mr. Kurtz, at some later date, I would like to discuss with you the suggestion of Mr. Milbourne of Wisconsin as to the pros and cons of what he calls circuit breaker based upon a total of taxes paid by State and local governments. It has surface appeal to me; I would like to see what some of the experts say.

I do not think it is particularly germane to this hearing.

I have asked my questions as we went along, I thank you, Mr. Kurtz and gentlemen, for coming and look forward to getting that information.

Mr. KURTZ. Thank you, Mr. Chairman.

Senator HASKELL. Next, Mr. Robert J. Mullins of the National Farmers Union.

Mr. Mullins, it is nice to have you here.

STATEMENT OF ROBERT J. MULLINS, LEGISLATIVE ASSISTANT, NATIONAL FARMERS UNION

Mr. MULLINS. Thank you, Mr. Chairman. With your permission, Mr. Chairman, I will summarize my statement.

We do have some concerns. I particularly appreciate the opportunity to come before this committee to discuss the energy tax proposals and rebate procedures as they will affect the agricultural sector of the country.

In reading and briefing the legislation, I think it leaves a lot to be desired as far as agriculture goes in its impacts.

There are some questions I do have about the entire program. First of all, it is a tax bill. Is it a national energy policy or an attempt to rewrite the nation's tax laws and transfer payments systems?

These are fundamental questions that we have to try to answer before we can take a really good look at the program.

Of course, I will admit our views of this are somewhat colored by the fact that the approach that this legislation takes, conservation through pricing, is totally unacceptable. We think there are alternative means, but that is subject to other hearings that we have been to.

Relating to agriculture, even if the increases of fuel prices were totally and fully rebated to farmers and ranchers, I guess at income tax time, such increases would dramatically—such increased costs would dramatically entail increased farm borrowing at a time where there is a severe credit gap in agriculture, as you know from your own State.

In addition to the credit problems, the increased cost of agriculture generated by the higher fuel and energy costs would further diminish the already low nationwide farm income.

To put the whole agriculture energy-related problems in perspective, I have attached to my statement a table showing projected 1977 energy use by source and anticipated costs for 1977. It comes somewhere in the neighborhood of $5.8 billion for nonfarm production use alone. That was taking an 8 percent increase over the 1976 price.

Although for the first 4 months of the year, energy prices in agriculture have been running 10 percent over last year and I tried in vain to calculate the cost if all of the tax proposals and the implications of the legislation were passed, I just could not come up with a figure.

Senator HASKELL. It is pretty clear now that the gasoline tax is not going to get passed. How about the wellhead tax? Have you been able to separate that?

Mr. MULLINS. Not totally, no, sir. Although I look at the breakdown of different categories, I could just project generally 8 percent. I really could not project what those other costs would be.

I have also included in my statement for the committee's information a table showing the breakdown of energy use in the U.S. food system and it does point out there, of total energy use on farm production, it only accounts for about 3 percent of the Nation's use. It is a vital 3 percent.

I guess, to summarize our entire position, our problems with this—we could simply answer one of the questions in your letter of last week. You asked there, would these methods—talking about the per capita rebates—provide maximum equity in the distribution of energy tax revenues.

Again, to answer the question, we have to go back to what is the intent of the law. Is it a redistribution of income or is it to rebate to end users the additional costs of energy supplies?

In our view, if the purpose is to rebate the end users the additional costs, then an across-the-board per capita rebate is not an equitable system. The Congressional Budget Office in its analysis points out that certain segments of the population will benefit proportionately more so than others; farmers and ranchers particularly would not benefit as greatly since their increased costs of production cannot be passed on, and a per capita rebate to this segment would not return the increased costs in total.

If it is going to be on a dependent type basis, as we heard earlier today, if we look at the makeup of the average farm family, there is no way that they could get their increased costs back through a per capita rebate system.

If energy tax rebates are to be made then they should go to the end user who pays the increased costs in energy supplies. This is not quite as limiting as it sounds. Some method particularly relating to agriculture, some method showing from petroleum suppliers or other energy suppliers the increased costs because of the tax provisions, consumers at that point can make an application for refunds or rebates of the actual increased costs, and we think this type of an effort would be more equitable if the goal was to rebate to end users the increased costs.

Also, in the Congressional Budget Office report, under the legislation as it is written now, all of the increased costs, even through a per capita basis would not be rebated. This is what they analyzed. They predict nearly $12 billion would be paid in higher energy prices by 1980 and anticipate only $9 billion being returned to the economy. This is a net loss of $3 billion in actual spending power which, we would think, across the board would have an effect on the economy, particularly have an effect on the agriculture sector.

We did look at the elements of the program, some investment tax credits for agricultural and residential alternative energy systems. We find those very acceptable. I would recommend when that comes around, that tax credits for alternative systems for agriculture and residential users should be increased to some percentage of the total cost of that alternative energy system.

There are some major areas in agriculture that could use alternative systems if it were economically feasible for them to install.

I know I do not address all the questions. I am simply a layman. I am trying to look at it from the economic impact that this is going to have on the budget. We are quite disappointed about the whole program relying on taxing powers for national energy policy. We think there are other ways this can be done.

For the committee's information, I have attached to the statement a copy of our national energy policy adopted by the delegates of our most recent convention.

Mr. Chairman, that ends my prepared statement. I appreciate the opportunity to be here.

Senator HASKELL. Thank you, Mr. Mullins. I think we have discussed the various aspects.

What is the basic thrust of the suggestions made by your delegates as to alternate systems? I will read it, but briefly, what is it?

Mr. MULLINS. Two points. An allocation system, one that we think is an equitable allocation system that can be worked out and some continued price controls.

Senator HASKELL. I look forward to reading it. I appreciate your being here, Mr. Mullins.

Mr. MULLINS. Thank you, Senator.

[The prepared statement of Mr. Mullins follows:]

STATEMENT OF ROBERT J. MULLINS, LEGISLATIVE ASSISTANT, NATIONAL FARMERS UNION

Mr. Chairman and members of the subcommittee: I am Robert J. Mullins, Legislative Assistant for National Farmers Union, 1012—14th Street, N.W., Washington, D.C. I am pleased to have the opportunity to appear before this Committee on behalf of the family farmer and rancher members of the Farmers Union and express our views and concerns relating to the implications for agriculture of recycling energy tax revenues as proposed in the Administration's National Energy Policy.

I realize that this Committee must take into consideration the effects upon the entire population of the country of proposals such as presented in this energy legislation. I would like to confine my remarks to the impact, as we view it, on the agricultural sector of the economy. To do otherwise would be presumptuous on my part.

Initially, I have a question. Exactly what is the intent and purpose of this energy legislation as recommended by the Administration? It is a tax bill of course, but is it really an energy policy, or an attempt to revise the Nation's tax laws? If it is the former, then it falls far short of meeting the goals as outlined by the President or of being equitable. If it is the latter, it also falls short.

Conservation of energy through pricing, in our opinion, is totally unacceptable. There are more equitable and acceptable methods available to the Congress and the Administration for achieving substantial conservation of energy. The economic burdens imposed on various sub-groups of the economy are unjustified. Specifically relating to agriculture, even if the increases in fuel prices were fully rebated to farmers and ranchers at income tax time such increases would entail additional farm borrowing at a time when there is already a severe credit gap in agriculture.

In addition to the credit problem, the increased cost of production to agriculture generated by higher fuel and related energy cost would further diminish the already disastrously low income of the Nation's farmers. (70 percent of parity as of May 15, 1977.)

In assessing the effects of higher energy prices and the proposed rebate provisions of the energy proposal on agriculture it would be helpful to review the use of fuel for on-farm production use and its cost.

TABLE I.—PROJECTED 1977 ONFARM PRODUCTION USE OF ENERGY

Source	Amount	1976 unit cost	Projected 1977 cost (millions)
Gasoline	3,800,000,000 gal	53.2 cents per gallon	$2,185
Diesel	2,750,000,000 gal	44 cents per gallon	1,306
Fuel oil	306,000,000 gal	44 cents per gallon	145
Natural gas	206,000,000,000 ft	$1.25 per million cubic feet	303
Liquified petroleum gas	1,600,000,000 gal	33 cents per gallon	569
Electricity	34,000,000,000 kWh	0.0355 per kilowatt-hour	1,302

Although the above 1977 cost estimates are based on an eight percent increase in prices over the year, fuel costs as of May 15, 1977, were running ten percent over a year ago. If this trend were to continue the cost to farmers for energy would be approximately $6.0 billion plus.

For the Committee's information the following table shows a breakdown of energy use in the food system; production, processing, marketing and consumption (excluding energy used by forestry and natural fibers).

TABLE II.—ENERGY USED BY U.S. FOOD SYSTEM

Use	Percent of food system	Percent of national use
Processing	29.0	4.79
In-home food preparation	26.0	4.29
Production	17.5	2.89
Away from home food preparation	16.9	2.79
Distribution, transportation, equipment manufacturing, etc	1.06	1.74

Note.—100 percent of energy used by system equals 16.5 percent of total national energy use.

On farm energy costs average $3.75 per million BTU's compared to a national energy cost of $2.50 per million BTU's. The difference is accounted for by greater dependence upon higher priced gasoline and diesel fuel.

As is shown in Table II, agricultural production uses about 3 percent of the Nation's energy supply. It is a vital 3 percent. In agriculture it is imperative that farmers have fuel and fertilizer available at the critical times of planting, cultivating, harvesting, drying and transporting that Nation's food and fiber supplies.

The Administration's proposals to raise the price of domestic oil to the artificially created world price of the OPEC nations will be costly to all segments of the consuming public. As a rule of thumb, in gasoline for example, a 1-cent per gallon increase costs American consumers an additional $1 billion. Increasing this price by 5 cents a gallon would drain the economy of about $5 billion. In addition to the already estimated cost of farmers for gasoline this year, an additional one cent per gallon would raise their production costs by approximately $38 million a year. Increases in other petroleum based products for agricultural use will only add pressure to the already tight cost-price squeeze.

We believe it is necessary to exempt from the proposed price increase for natural gas such gas as is used for fertilizer production, irrigation and crop drying.

To specifically address some of the questions in your letter, Mr. Chairman, of June 20, I must say I am responding as I perveive them to affect agriculture.

"Would these methods (per capita rebates) provide maximum equity in the distribution of energy tax revenues?"

To answer this question, one must know what is the desired end result of such a distribution; redistribution of income, or, rebating to end-users the additional cost of energy supplies?

If the purpose is to rebate to end-users the additional costs, then an across-the-board per capita rebate is not equitable. Certain segments of the population would benefit proportionately more so than others. Farmers and ranchers, particularly, would not benefit as greatly, since their increased costs of production brought about by increased energy costs can not be passed along, and would not receive their total additional costs in the form of a per capita rebate. As I have already stated, the increased costs of energy for agriculture has a two-fold impact. One, the necessity for increased farm borrowing and, two, increased cost of production.

If energy tax rebates are to be made, they should go to the end-users who pay the increased cost of energy supplies. This is not as limiting as it sounds. Petroleum supplies and utility suppliers should be required to demonstrate on their billings the additional cost brought on by the energy taxes. Customers could then make application for refunds or rebates of the actual increased costs they have been required to pay. Such a method would be most equitable. It would protect all consumers, including farmers and ranchers and particularly those on low-incomes and fixed incomes.

However, according to a report by the Congressional Budget Office, under the current proposals, all of the increased costs would not be returned to consumers. CBO predicts nearly $12 billion will be spent for higher energy prices by consumers by 1980. Of this amount the CBO estimates that some $9 billion would be rebated leaving a net reduction in real purchasing power of approximately $3 billion.

The most acceptable and productive of the tax measures proposed by the Administration is the investment credit for the installation of alternative energy utilization systems for both residential and industrial users.

Encouraging the development and installation of equipment which would promote the use of alternative energy sources over petroleum based products is practical and greatly needed. Taxation of those users who fail to convert is needed. The tax investment credit for industrial users, as proposed, is fair. The investment tax credit for agricultural and residential users for installation of solar or other alternative energy systems should be increased to some percentage of the entire cost of the system.

From the National Farmers Union's view, the Administration's proposals for a National Energy Policy, relying almost exclusively on the taxing power of the Federal Government to discourage consumption is disappointing. The proposals tend to place a disproportionate burden on a segment of the economy that can ill afford another cost of production increase, American agriculture.

Rather than utilizing the taxing power and conservation through increased prices, Farmers Union urges the Congress to adopt alternative approaches to solving our energy problems. For the Committee's information I am appending to this statement the energy policy recommendations adopted by the farmer and rancher members of the National Farmers Union.

I hope I have answered some of your questions Mr. Chairman. This concludes my statement, and I will try to answer any questions which you or other Members of the Committee may have.

Thank you.

EXCERPTS FROM 1977 POLICY STATEMENT OF NATIONAL FARMERS UNION PERTAINING TO NATIONAL ENERGY POLICY

IV. ENERGY POLICY

A. Defining the Problem

Energy policy must serve the nation's needs for food and fiber. To that end energy policy must be consistent with our system of family agriculture.

Elements of a national energy policy include: (1) Research into the causes and remedies of the crisis; (2) reducing control of giant corporations of the sources, production, and distribution of energy; (3) equitable distribution and efficient development of energy to assure adequate production of food and fiber; (4) pricing policy which will prevent economic hardship; (5) balancing energy needs with the necessity to maintain a safe and ever-renewing environment; and (6) a massive program to develop renewable sources of energy to reduce our dependence on fossil fuels, including economic assistance for family farmers and ranchers to make agriculture more self-sufficient through increased application of alternative forms of energy.

1. Department of Energy

We support the efforts of the Administration to establish a Cabinet-level Department of Energy to coordinate a national energy policy.

We call upon this department to implement policies which will support research and development of alternative sources of energy to fuel our homes, farms, and factories.

Any research and development of fossil fuel resources must take into account the effect upon agricultural land.

We recommend that all federal regulatory authority over utilities, pipelines, and rates remain in independent Congressionally mandated commissions.

2. Net Energy

We urge the Energy Research and Devolpment Administration and other agencies to use net energy standards in evaluating energy sources so that accurate comparisons can be made. Net energy is the energy delivered to consumer. Net energy standards would weigh the final product against the total energy required in the mining, processing, and transforming of energy into its final forms.

3. Total Resource Recovery

Pressures on farmland for energy, metals and other substances are increasing. To insure complete reclamation we urge that the concept of total resource recovery be required on all mining operations. This means that land would be disturbed only once and that reclamation programs would be permanent.

B. Corporate Control

1. Control of Energy Resources

We strongly encourage efforts at the local, state, and regional levels to increase and strengthen publicly and cooperatively owned utilities.

We urge the limitation of foreign involvement in our energy resources. Controls should be set by the United States Energy Committee as to amount of buying power permissible by foreign countries to insure our country that our energy isn't being bought and controlled by foreign interests.

2. Antitrust

We support antitrust action to increase competition in the private sector of energy industries where combinations result in unwarranted charges to consumers.

All corporations or companies that have acquired interest in the production, development, or distribution of competing sources of energy, such as oil, natural gas, uranium, solar, wind, or geothermal, should be required to divest all holdings in more than one such energy resource.

3. Leasing Policy

We must halt the leasing of public energy resources to the same private corporations that already monopolize our energy supplies. Public resources should, to the greatest extent possible, be public developed on a not-for-profit basis. First preference should be given to publicly and cooperatively owned utilities. Second preference should go to private independent companies that do not engage in anti-competitive practices.

4. Competitive Bidding

The federal government should establish import quotas for crude oil to be filled only through competitive bidding by oil-producing nations in order to assure the lowest price obtainable.

C. Distribution and Development

1. Distribution

We urge legislation of give the Federal Power Commission authority to supervise public and private power grids and interties which would prevent blackouts and failure of power facilities. Such a system should be operated as a common carrier with service available at cost in order to insure that the economies resulting will be passed on to consumers.

We urge the use of the withdrawal clause to protect the rights of preference customers. We favor a policy of utility responsibility by the federal government which would assure non-profit power groups the necessary credit and financial support to set up needed generating and transmitting facilities.

2. Fuel for Farming

Regulations must be established by the Federal Energy Authority to assure that farmers and ranchers receive adequate supplies of gasoline, diesel, propane, and other forms of energy necessary to carry on full-scale production despite any breakdown in the distributive system. Such regulations must also assure that the allocation of the total U.S. crude oil supply is equitably made between oil refineries insuring that cooperatives and independents receive a fair share.

Strong civil and criminal penalties and enforcement authority must be provided in the mandatory fuels allocation programs to assure an effective deterrent against non-compliance by the major integrated oil companies.

We support legislation to provide for the mandatory allocation of natural gas to fertilizer manufacturing plants in order that no nitrogen manufacturing plant will be forced to operate at less than full capacity due to inadequate supplies of natural gas as a feedstock.

3. Water Policy

Water policy is inseparable from energy and agricultural policy. We urge adoption of the following order of preference in the use of water:

a. Domestic and municipal consumption;
b. Farming and ranching including ground water recharge;
c. Hydroelectric uses;
d. Navigation;
e. Industrial consumption;
f. Wildlife and recreation.

We favor a federal water policy that would minimize disposal and encourage recycling. Methane gas and fertilizer would be benefits of such a policy.

We urge Congress to amend the 1902 Reclamation Act to allow family-farm units that are not entirely Class One lands to be increased in size. Additional acreage allowed should depend on soil quality, crop adaptability, cost of production, and the length of growing season.

Determination of additional acreage should be made by the Secretary of Interior with Congressional oversight to insure the original intent of the 1902 Reclamation Act.

We urge the strict application of the preference clause for consumer-owned utilities. This provision of the law, based on the constitutional authority of federal management of water resources of this nation, must not be weakened by legislative or administrative action.

We oppose the movement of any water for the purpose of a coal-slurry pipeline or similar venture, unless a method can be developed to return equal quality and equal quantity of water to the original area from which it is taken.

Prior to the exportation of any water, an environmental impact statement must be made to determine the effect on agriculture.

D. Pricing Policy

1. Price Controls on Oil and Gas

Until there is a national energy policy which meets the guidelines spelled out earlier in this section, Farmers Union:

a. Continues to oppose any relaxation of the regulation of natural gas at the wellhead by the Federal Power Commission, and supports reform of natural gas regulated by the FPC to extend FPC's authority intrastate;

b. Supports extension of effective price controls on oil, gas, and refined petroleum products.

An excess profits tax on oil companies, which would be essential in the event that price controls are ineffective, should be structured to prevent the oil companies from avoiding the tax through reinvestments of revenues in other energy sources that would result in more integrated control by the oil companies over the whole range of energy sources.

To the extent necessary to provide oil, refined petroleum products, and natural gas to the people of the United States on a fair and equitable basis, we support a federal rationing system for such products.

2. Electric Rates

We favor legislation designed to reduce electric rates in states where regulatory commissions have been negligent, or have cooperated with power companies in establishing exorbitant rates.

E. The Environment

We realize the need for enormous amounts of energy in all forms. We believe that this energy should be generated without polluting the earth, air, and water. Pollution standards should be set at levels to prevent damage to health, and energy-producing corporations must be required to meet those standards.

1. Coal Policy

A strong federal statute on strip mining is need so that any land stripped to recover underground resources must be returned to its original use so the land can be put back into production.

To accomplish this, we recommend that the topsoil (a minimum of 18 inches), be removed, stored, and returned to the top. Suitable vegetation should be established within one year after the spoil banks are graded.

Any land not fully restorable to its original agricultural use should be banned to strip mining. All land already subjected to strip mining must be returned to its original use.

We believe that strip mining should be forbidden in alluvial valley floors because such land is needed more for agricultural production.

Emphasis should be placed on making underground mining as safe, economically attractive, and technologically feasible as possible.

Coal companies should be required to post bond for the restoration of agricultural land damaged by strip mining or mine sinks. The Abandoned Mine

Reclamation Fund pending in the Surface Mining Control and Reclamation Act of 1977 should be amended to provide assistance to farmers and ranchers to reclaim land when damage occurs following mine abandonment.

With this protection, energy would be provided without damaging the nation's most important non-renewable resource—agricultural land.

For privately owned agricultural lands where the federal government retains the subsurface mineral rights, we support legislation requiring the written consent of the landowner prior to any lease of such lands for strip mining.

2. Oil Shale

Our shale development poses serious problems for the western region of the United States. This development will disturb large areas of land to recover a small percentage of oil. The debris from these operations expands in volume, causing massive disposal problems. Salts present in shale and associated soil material are dissolved in surface water. This can lead to saline contamination.

It is imperative that no commercial development of these resources, either by heat or nuclear explosions, be conducted until all environmental effects are assessed and assurance is provided that all liabilities will be assumed. Burden of proof should rest with the energy companies.

Any subsidies granted by the federal government to the synthetic fuels demonstration program should be directed specifically to large-scale prototypes simulating actual commercial operation, and all data collected should be made available to the public, including studies showing the economic and social impacts on citizens of the affected area.

Consideration should be given to the social and economic impact on local communities where synthetic fuels might be developed. Federal appropriations should include moneys for housing, schools, and other services when communities are impacted by new coal and oil shale development.

3. Hydroelectric Sites

We urge the cautious development of hydroelectric power sites in order to assure that the ecological balance will not be threatened.

4. Nuclear Energy

When nuclear wastes can be stored without being harmful to humanity and the environment, nuclear power should be given the same priority in resolving our energy shortage as hydroelectric, coal, solar, wind, methane, Gasahol, and geothermal.

We urge acceleration of development of fusion energy technology, which is relatively free of polluting effects.

F. Alternate Energy Resources

1. Development

Crash programs for the development of solar, geothermal, wind, methane gas, Gasahol, and other non-polluting renewable energy sources should be conducted, with emphasis on solar energy research directed toward developing self-sufficient units suitable for farm, home, small industry, and business use.

2. Cooperative Demonstrations

We urge consumer-owned utilities to unite to develop, demonstrate, and increase the economic feasibility of the use of renewable and other alternative energy systems.

3. Economic Assistance

Our public policy should be designed to enhance the economic feasibility of the uses of renewable and other alternative energy systems by such means as government-sponsored research, and low-interest, long-term credit to consumer-owned utilities, and to individual energy consumers.

Government loans under the Small Business Administration should be made available to family farmers to establish self-sufficient energy systems, such as solar, wind, or methane, in order to limit their growing dependence on centralized energy systems.

We urge the utilization and funding of the Section 5 program of the Rural Electrification Administration to provide low-interest loans to REC members to carry out energy conservation measures on their farms and rural residences.

4. Conservation

One immediately available alternative source of energy lies in the adoption of all methods to conserve present-day supplies of energy. Future use based on austerity and wise application must be encouraged and, when necessary, mandated.

Senator HASKELL. The next, and last, witness is Ms. Betty Duskin, director of research, National Council of Senior Citizens.

It is very nice to have you here.

STATEMENT OF BETTY DUSKIN, DIRECTOR OF RESEARCH, NATIONAL COUNCIL OF SENIOR CITIZENS

Ms. DUSKIN. I will summarize parts of my testimony. I gather that I am here today in defense of the per capita rebate.

Of course, the manner in which this rebate takes effect is of particular importance to us. In general, the low income population is the most heavily impacted. Of course, the elderly are disproportionately represented in that group. I noticed in reading through the transcript of prior testimony and listening to the testimony today that there are conflicting opinions regarding the fairness of the redistributive effect of the per capita rebate and the appropriateness of income redistribution in the context of the energy proposals. There are several points that I would like to make.

Some of the reasoning is a little torturous. I hope you will bear with me.

First of all, in order to preserve the incentive to conserve on energy consumption, it is of critical importance that the rebate not be directly related to the amount of post tax energy consumed by an individual or family. If this direct relationship existed, the rebate would neutralize the effects of the tax; the pretax and posttax price to the consumer would be equal and consumption behavior would not change. Clearly, this is not what is intended.

The effect of the tax and the consequent higher prices may be explained by two analytically distinct occurrences. First, the purchasing power of money income is reduced with the expected result that less of all customary purchases are made. This is known by economists as the income effect.

Second, the taxed item becomes more expensive relative to other goods and services and there is an incentive to shift consumption away from the relatively more expensive taxed commodity towards relatively less expensive items. The impact of the second effect—the substitution effect—is generally thought to be the larger, and hence, the more important of the two effects described.

The flat per capita rebate is related only to the amount of tax moneys to be rebated and the total number of individuals to whom the money is to be distributed. Therefore, it offsets—in whole or in part—the income effect, but does not disturb the new relationship between higher priced energy consumption and other forms of consumption. Thus, energy consumption is less attractive than in the pretax situation, but average purchasing power is roughly preserved.

It is important that we understand the distinction between those two things. That difference is the validation for the use of a per capita

tax not related to income and not related to purchases per se and increased costs.

Another effect of the per capita rebate is that it does redistribute income to the poor relative to higher income groups.

This is a result of the fact that although the poor, on average, spend a greater proportion of their income on energy consumption, they spend less in actual dollar amounts than higher income families. The important point here is that the redistribution is only a by-product of the necessity to avoid rebating in a manner that directly relates the size of the rebate to actual dollars spent on posttax energy consumption.

It is not an attempt to inject welfare transfers into an energy policy; it is an attempt to retain the conservation incentive effects of the tax that as a side effect, has the socially desirable result of favoring the poor. Only if the bias were against the poor would we have legitimate cause for concern. The poor have always conserved energy; their inadequate incomes do not permit them to do otherwise.

Senator HASKELL. I gather, then, that, by and large, the people who testified on June 6, on the per capita rebate system, if there is a bias, there is a bias in favor of the poor. Apparently you do not show it here, but a gentleman named Thurow, from MIT, testified to the contrary.

I gather you would side with the majority that the bias, if there is a bias, is in favor of the poor?

Ms. DUSKIN. There are two things occurring simultaneously. The impact of the price rise will disproportionately impact the poor harshly. They will be far worse off than other income groups by the result of the tax alone, but the rebate, on the other hand, because it rebates a flat amount that is independent of the actual expenditures, favors the poor. The two are very consistent.

On the one hand, we are saying that, proportionately, they consume more relative to their income situation, but we are also saying they get back more because their actual expenditures, even though the proportion may be larger, the absolute expenditure is lower.

Senator HASKELL. Do you think it is a trade-off?

Ms. DUSKIN. I do not know. There is so much unknown about what the energy situation is going to be. There is a lot we do not know, and we will have to learn the hard way.

As the testimony goes on, the next point was, of course, the relatively favorable treatment of lower income groups does not in any way mean that they are gaining in absolute terms. They may still, in fact, be losing because of all the things we do not know. All of the moneys, in fact, will not be rebated. Estimates are very tentative by their very nature. Also, there is a great deal of variation in energy usage, even among the poor. Some poor may be better off, some poor may be worse off. It is not an even-steven affair at all.

Another concern that has been discussed today too was the concern about double dipping. One aspect of double dipping I do not believe was discussed today. It concerns the poor and others who receive transfer income that is adjusted for changes in cost of living. It is claimed that the energy price increases will be reflected in the Consumer Price Index which is the instrument used to calculate adjust-

ments in transfer payments, and, therefore, those who receive the adjustment and the rebate will be doubly compensated. I strongly disagree.

The CPI reflects an average market basket of goods and services; it does not reflect the expenditure patterns of the elderly or the poor. The make-up of their expenditures is disproportionately heavy on shelter items, on food and medical expenses and transportation and energy-related usage.

The average family, of average means, has a budget composition which is quite different. The CPI refers to an average, hypothetical figure; it does not do justice to the poor on most occasions.

Therefore, because, in general, the CPI may undercompensate the poor and the elderly, it will undercompensate them also for energy price increases, I really think that not only taxpayers but the transfer program recipients, Social Security, AFDC, SSI, should be included as well. It is far from double dipping.

There are means that have been proposed other than the per capita rebate. They were discussed earlier by the gentlemen from Wisconsin, and in general, I agree. The use of the sales tax as a rebate mechanism would be a catastrophe. However, I also feel the use of property taxes would be even a greater catastrophe, not only because of the administrative difficulties and the different ways in which the State imposes the taxes, but in the case of the property taxes, also because we know very little about that tax.

In general, when a tax is imposed there are various adjustment processes that take place, and who actually pays the tax in terms of having their real income changed ends up as a different story than that resulting from the initial liability for the tax.

In the case of the property tax, we do not know what the final incidence of the tax is. If it is individuals in their role as consumers of housing services and other owners and plant owners who pay the tax, were wearing a hat of goods and services who pay the tax, then the tax is quite regressive.

If, on the other hand, it turns out that it is a wealth tax, paid by individuals in their role as real property owners, it may be the progressive tax we have. The controversy is still in process and has not been resolved.

Therefore, whatever the result of using property tax relief mechanisms, we are not sure what those results are going to be. That is a difficult situation that has plagued economists in recent years. We do not have the answers to that.

Senator HASKELL. That is very interesting. In New York City it may be a wealth tax.

Ms. DUSKIN. It varies between jurisdictions. It is not something we have been able to empirically measure and we do not have an answer to the particular question. I would avoid the property tax.

However, if one wants to assume that it is regressive, and that has been the conventional wisdom for many years, the State that I think does the most interesting job of dealing with property and States sales tax relief is New Mexico. I believe one of the difficulties in property tax relief is that it does not necessarily treat people who have the

same income in an equal manner. People's tastes may differ. They may have considerably different living arrangements. One may have an extraordinarily palation home, the other quite modest. In terms of their actual money income, they may be equivalent but obviously the one with the more expensive house is going to have a larger tax bill. He, in fact, may be eligible for some kind of tax rebate. The other person, not as well off, because he has an asset that is worth less, may not receive the same rebate.

It works very unfairly in other circumstances as well. What New Mexico has done is avoid using individual property tax liabilities in their calculations altogether. What they do is take the average tax liability, including both taxes, property and sales taxes, for a family of a given size and composition and income level and provide a table of calculations that is very simple to administer. They will rebate, based upon income level and family size according to some average of what residents of that State pay at that income level and family size.

Therefore. the difference in treatment of people because they have different lifestyles and expenditure patterns, even though their incomes are similar, is avoided. That is perhaps the best system I have seen so far.

Another caveat is in order. If the Federal Government were to get involved in financially supporting circuit breakers of any variety—and there are many varieties of them—because there are large variations among local jurisdictions in the degree of reliance placed on property taxes, we may well find that an area such as the South, which traditionally has not leaned heavily on property taxes as a revenue source, would now do so because the Federal Government was subsidizing increased reliance on the property tax. The end result may be perverse.

If we want to minimize reliance on the tax, we may find we are providing an incentive for States and regions to rely more heavily on it. The Federal Government involvement in State tax relief efforts should be considered with great caution.

I will not go through all of the other objections. They have been adequately covered today.

As far as the proposal to consider rebating through a change or overhaul in the tax system, I really think that the question of tax reform deserves consideration on its own merit. It should not be hastily conceived just to accommodate the energy tax rebate to the economy, particularly when the is a direct and sound and simple way of affecting that rebate.

That does not mean that the per capita rebate is not without its problems. The Commissioner discussed some and there are others that are quite interesting.

We did have an experience earlier this year when a $50 per capita rebate was proposed as an economic stimulus to the economy. It was not enacted but nevertheless, it did generate some work at Treasury to see how they were going to accomplish this, if it were enacted.

I have some of the simulation results they developed.

In regard to the $50 rebate, the considerations were more or less the same as we are now considering. That is, to rebate to taxpayers,

those eligible for the earned income credit, Social Security recipients, SSI recipients, railroad retirement pensioners; and AFDC recipients.

The results were as follows. They included the entirety of the population in their eligibility criteria. They did not actually, in the simulation, use the program files. What they did was use the income tax files matched with the current population survey and drew that up to represent the entire population and tested the characteristics of the various people and put them into categories depending on what programs they would or would not be eligible for.

What came out of this, out of the 212-odd million people deemed eligible, almost 36 million persons received multiple payments; almost 8 million persons received no payment.

Of those who received no payment, the overwhelming majority, 67 percent, were rural residents.

Of the remaining 33 percent who received no payment, almost all were inner-city residents.

Of the rural residents without any payment, more than 50 percent had family incomes of less than $5,000; 78 percent had family incomes of less than $10,000; higher income levels were also represented.

Of inner-city residents without any payment, 64 percent had family incomes of less than $5,000; 83 percent had family incomes of less than $10,000; higher income levels were also represented.

The age distribution of nonrecipients cut across all age categories but was concentrated in the prime years of 20 to 60 years of age, 52 percent; under 14 years, 20 percent; 14 to 21 years, 20 percent; and 61 years and older, 8 percent.

Senator HASKELL. Where do these figures come from?

Ms. DUSKIN. The Department of the Treasury. As a matter of fact, I have some computer printouts with me that you may be interested in taking a look at.

The racial composition of nonrecipients was 81 percent white, 19 percent nonwhite.

The composition by sex of nonrecipients was 53 percent female, 47 percent male.

By and large, it tells me a great deal, because largely it tells me nothing. There does not appear to be a unique problem area that explains the case of the nonrecipients. I am told, though, that probably the largest source of difficulty in the multiple rebate situation is speculated to be on the AFDC rolls. There is a great deal of overlapping between AFDC and other categories.

I am told that approximately two-thirds of AFDC recipients pay taxes. A number of them are also on other rolls, SSI in particular, or the disability element of Social Security and so forth.

A large proportion of them do work and are eligible for the earned income credit. They overlap in every program that is considered.

It is awfully difficult, if not impossible, to screen out multiple recipients from a program that does not have a federally centralized records system that is compatible with the other program records.

AFDC would be a severe problem.

Let me speculate a moment on what kinds of individuals might have fallen through the cracks. Just giving the age compositions, income

levels and so forth—this is not exhaustive, but I would say that probably the long-term unemployed, many of whom are heads of families, may have been missed; workers with incomes below the taxable threshold who are not eligible for the earned income credit because it requires minor dependents in the household and also because of their working or other categorical characteristics are not eligible for other transfer programs.

To a very small extent I suspect there are some older workers who are 65 or 62 or older, but not yet 72, may have exceeded the dollar amount of the retirement test in social security, yet may still be below the taxable threshold, but may have forfeited social security benefit payments. They, too, may be missed.

Again, students who are not dependents of tax filing units but who do not have taxable income may also be missed, and so forth. There are probably a number of other groups.

Although there appears to be no single problem, there is a single solution to the problems of both multiple rebates and no rebate: Have everyone file a tax return, regardless of whether or not they have a tax liability or are eligible for the refundable earned-income credit.

A less than perfect effort which allows people to fall between the cracks unless they request the rebate that is due them, makes nontaxpayers wait a year for their rebate, and provides multiple payments in some cases; may be understandable when you have a single year program. But a program that may well be repeated over several years really demands much better timing and better efficiency.

The only resolution I see, and one that probably would have a one-time cost that would be significant but we would not have that cost repeated would be to start setting up a complete tax filing system that was not dependent on having taxable income.

Senator HASKELL. That is an interesting suggestion. I think we will ask Mr. Kurtz to comment on that.

[The following was subsequently supplied for the record by Mr. Kurtz:]

Service comments on Mrs. Betty Duskin's proposal to solve the problem of multiple rebates (and no rebates) by having everyone file a tax return, regardless of whether or not they have a tax liability.

From time to time, certain public spirited individuals and groups, believing in a need for some sort of national register of all people residing in the United States, have suggested that the Federal Government solve the problem by having all adults file a form, or tax return, with the Internal Revenue Service. It has been argued that such expansion of our tax system to embrace a universal filing process would eliminate the need for the decennial census, and, at the same time, provide the information necessary to the Government for various programs and activities beyond that of revenue collection.

It is the position of the Internal Revenue Service that the expansion of our tax system for such purposes is not in the best interest of efficient tax collection and is, therefore, not the direction we would like to take. Aside from the apprehension of a large number of citizens about the "big brother" aspects of a universal filing, we believe that the Service's accumulation of tax data would suffer from an increased lack of candor in reporting, that the problems of improper disclosure of information would intensify, and that the general dilution of the agency's energies would result in weakened tax enforcement, with a corresponding reduction in revenue.

We would prefer, therefore, not to be the agency responsible for gathering information to be used for other than tax collection purposes.

Senator HASKELL. Well, thank you, Ms. Duskin, for a very interesting testimony. I appreciate your being here.

[The prepared statement of Ms. Duskin follows:]

STATEMENT BY BETTY DUSKIN, DIRECTOR OF RESEARCH NATIONAL COUNCIL OF SENIOR CITIZENS

Mr. Chairman, members of the Committee, my name is Betty Duskin, and I am the Director of Research for the National Council of Senior Citizens. The National Council is a nonprofit, nonpartisan organization with 3,800 affiliated senior citizens' clubs in all fifty states, representing over three million older Americans.

I sincerely appreciate this opportunity, on behalf of the National Council, to comment on the issue of recycling energy tax revenues. The Administrations' plan would result in higher prices, moving towards replacement cost, with the concurrent return of the tax revenues into the economy to preserve overall purchasing power while maintaining the incentive to conserve on energy consumption. The manner in which the revenues are rebated and the efficiency and equity with which this is done is of particular concern to us since the poor, among whom the elderly are disproportionately represented, will be most heavily impacted by rising energy prices.

In previous testimony before this Committee, there were conflicting opinions regarding the fairness of the redistributive impact of the per capita rebate and the appropriateness of income redistribution in the context of the energy proposals. There are several points in this regard that may be helpful.

First, in order to preserve the incentive to conserve on energy consumption, it is of critical importance that the rebate not be directly related to the amount of post-tax energy consumed by an individual or family. If this direct relationship existed, the rebate would neutralize the effects of the tax; the pre-tax and post-tax price to the consumer would be equal and consumption behavior would not change. Clearly, this is not what is intended.

The effect of the tax and the consequent higher prices may be explained by two analytically distinct occurrences. First, the purchasing power of money income is reduced with the expected result that less of all customary purchases are made. This is known by economists as the "income" effect. Second, the taxed item becomes more expensive relative to other goods and services and there is an incentive to shift consumption away from the relatively more expensive taxed commodity towards relatively less expensive items. The impact of the second effect—the "substitution" effect—is generally thought to be the larger, and hence, the more important of the two effects described.

The flat per capita rebate is related only to the amount of tax monies to be rebated and the total number of individuals to whom the money is to be distributed. Therefore, it offsets—in whole or in part—the "income" effect, but does not disturb the new relationship between higher priced energy consumption and other forms of consumption. Thus, energy consumption is less attractive than in the pre-tax situation, but average purchasing power is roughly preserved.

Another effect of the per capita rebate is that it does redistribute income to the poor relative to higher income groups. This is a result of the fact that although the poor, on average, spend a greater proportion of their income on energy consumption, they spend less in actual dollar amounts than higher income families. The important point here is that the redistribution is only a by-product of the necessity to avoid rebating in a manner that directly relates the size of the rebate to actual dollars spent on post-tax energy consumption. It is not an attempt to inject "welfare" transfers into an energy policy; it is an attempt to retain the conservation incentive effects of the tax that, as a side effect, has the socially desirable result of favoring the poor. Only if the bias were against the poor would we have legitimate cause for concern. The poor have always conserved energy; their inadequate incomes do not permit them to do otherwise.

However, the relatively favorable treatment of lower income groups does not imply that all lower income units will necessarily be getting back more than their additional costs: (1) The impact of both direct and indirect price increases is uncertain and, therefore, current estimates are tentative; (2) part of the revenues will be used as an indirect subsidy to prevent home heating fuel from increasing in price, and will therefore not be available for the individual rebates and, (3) there is a great deal of variation in energy usage, not only between income classes, but also within income classes. The variation appear to be largest at the lowest end of the income distribution and barely discernible at the upper end of the income distribution.

Another concern involved potential "double-dipping" by the poor and others who receive transfer income that is adjusted for changes in the cost-of-living. It is claimed that the energy price increases will be reflected in the Consumer Price Index (CPI), which is the instrument used to calculate adjustments in transfer payments, and, therefore, those who receive the adjustment and the rebate will be doubly compensated. I strongly disagree.

The CPI reflects an average market basket of goods and services; it does not reflect the expenditure patterns of the elderly or the poor. Housing costs, food, medical care and transportation costs which make up the bulk of the elderly budget have all experienced unusually high rates of inflation in recent years. All of these items represent a much larger share of the elderly market basket—even with the existence of Medicare—than is represented in the CPI. Similar deviations from the average expenditure pattern exist for all the poor. Therefore, these groups have been seriously undercompensated for changes in the cost-of-living in recent years, and usually after a time lag of more than a year. The projected changes in energy prices as reflected in the CPI will continue to undercompensate them. Certainly, none of the burden of induced higher prices should be shifted to the low income population, particularly since other groups may successfully hedge against inflation through wage adjustment, higher interest rates, or other means without penalty. Therefore, taxpayers and transfer program recipients, including Social Security, SSI, Railroad Retirement, AFDC and recipients of the Earned Income Credit, all should receive equal rebates or grants.

In addition to the proposed per capita rebate, other means of returning the tax revenues to the economy have been suggested: (1) rebating state and local property taxes; (2) reducing state sales taxes; and (3) overhauling or indexing the personal income tax system. I consider these options seriously inferior to the proposed direct per capita rebate.

The first two options, I understand, were suggested because they are purported to be counter-inflationary since the reduced taxes would be directly picked up in the CPI and offset the increase in energy taxes. This point of view confuses a statistical representation of an event with the event itself.

In the case of offsetting a tax increase by an equal tax reduction, this might well be reflected as a standoff in the CPI, but only because of the concurrent timing. Paying a tax liability for an individual also frees income for discretionary purposes in the same way that a direct cash rebate does. Unless the distribution of the proceeds differs significantly in the two cases, I see no reason to assume that the direction of the result will be different; only the timing of the result may be different.

However, there are more serious objections to using the property tax or sales tax as a rebate vehicle. In the case of the property tax:

1. We don't know the final incidence of the tax. We don't know whether individuals pay this tax in their role as consumers of housing services and as consumers of other goods and services or whether individuals pay the tax in their role as owners of capital (wealth). In the first case, the tax would be considered extremely regressive; in the second case, the tax would be considered strongly progressive. This issue is at present unresolved.

2. Since the property tax is usually levied at the sub-state level, we are talking about thousands of jurisdictions.

3. Tax rates and assessment practices differ among jurisdictions.

4. States differ in their proerty tax relief programs: some have none; some target aid to the elderly only; some include all age groups; some limit eligibility to homeowners; some include homeowners and renters, there are variations in income eligibility and maximum relief, and so forth.

5. Jurisdictions that are fiscally hard pressed would have an incentive to raise property tax rates given that the increase would be financed largely through the federal rebates. The Federal government could not intervene in the matter of the local taxing authority, and the rebate might never reach the consumer.

In sum, rebating through the property tax mechanism would be an administrative nightmare with haphazard, inequitable and in part, unknown results.

The sales tax falls prey to much of the same criticism, with the exception that the tax is known to be regressive.

1. Tax rates and items subject to the sales tax differ among states, not to mention the fact that not all states have a sales tax.

2. Administrative complexity and inequities based on the accident of geographic location would result.

3. Again, there is no guarantee that the state would not take advantage of a potential federal subsidy and thwart the expectations of consumers by raising tax rates or expanding the taxable base.

The other major proposal involves recycling the energy tax revenues through a major overhaul of our tax system which would effectively "index" the system. I believe the question of tax reform deserves consideration on its own merits and should not be hastily conceived to accommodate an energy tax rebate to the economy, particularly when there is a direct, sound and simple alternative in the flat per capita rebate.

Although I favor the per capita rebate approach, it, too, is not without difficulties. The problems involve the incidence of multiple rebates and no rebates.

Earlier this year, a $50 per capita rebate was proposed as an economic stimulus to the economy. Although never enacted into law, it did generate some estimates of the difficulties that might be encountered in implementing the rebate. A simulation, done by the U.S. Department of the Treasury, assumed the entire United States population as eligible. The proposal provided rebates or grants to several categories of individuals equivalent to those now under consideration: (1) taxpayers; (2) earned income credit recipients; (3) social security recipients; (4) SSI recipients; (5) railroad retirement pensioners; and (6) AFDC recipients.

The results were as follows:

Almost 86 million persons received multiple payments;

Almost 8 million persons received no payment;

Of those who received no payment, the overwhelming majority, 67 percent, were rural residents;

Of the remaining 33 percent who received no payment, almost all were inner city residents;

Of the rural residents without any payment, more than 50 percent had family incomes of less than $5,000; 78 percent had family incomes of less than $10,000; higher income levels were also represented;

Of inner city residents without any payment, 64 percent had family incomes of less than $5,000; 83 percent had family incomes of less than $10,000. higher income levels were also represented.

The age distribution of nonrecipients cut across all age categories but was concentrated in the prime years of 20 to 60 years of age. 52 percent; under 14 years, 20 percent; 14 to 21 years, 20 percent; and 61 years and over, 8 percent.

The racial composition of nonrecipients was 81 percent white, 19 percent nonwhite;

The composition by sex of nonrecipients was 53 percent female, 47 percent male.

The largest source of difficulty in multiple rebates is speculated to be in the AFDC roles, since there is a great deal of overlapping between AFDC recipients and all of the other categories. Additionally, it is more difficult if not impossible to screen out multiple recipients from a program which does not have federally centralized records that are compatible with the other federal program sources.

By simple inspection, there does not appear to be a unique problem area to the case of nonrecipients. There are several speculations as to what categories of individuals and families are falling through the cracks; (1) the long-term unemployed, many of whom may be heads of families; (2) workers with incomes below the taxable threshold who are not eligible for the EIC or other transfer programs considered; (3) older workers, under age 72, who are below the taxable threshold, but who have significantly exceeded the dollar amount of the retirement test so that they have forfeited benefit payments; (4) students who are not dependents of tax filing units, but who do not have taxable income, and so forth.

Although there appears to be no single problem, there is a single solution to the problems of both multiple rebates and no rebates: have everyone file a tax return, regardless of whether or not they have a tax liability or are eligible for the refundable earned income credit. A less than perfect effort which allows people to fall between the cracks unless they request the rebate that is due them, makes non-taxpayers wait a year for their rebate, and provides multiple payments for some may be understandable for a single year program. But one that will be repeated over several years demands better timing and greater efficiency.

Senator HASKELL. The hearing is now adjourned. The record will stay open to receive additional material.

[Thereupon, at 11:40 a.m. the subcommittee recessed to reconvene at the call of the Chair.]

[By direction of the chairman the following communications were made a part of the record:]

UAW COMMENTS ON ADMINISTRATIVE PROBLEMS IN RECYCLING ENERGY TAXES

These comments on the oil wellhead tax are related to the June 6 and 27, 1977 hearings of Senator Haskell's Subcommittee of the Senate Finance Committee. In particular, we would like to comment on the question of whether recycling can be designed to minimize the inflationary impact of the tax.

As we in the UAW envision the ideal form of energy taxes and rebates, it would produce results very much like a modified system of rationing. Each family would be able to continue to use a certain basic amount of petroleum or petroleum products without penalty, but any use above that level would be subject to a tax penalty. The Administration's proposal for the wellhead tax and rebates comes close to this objective. The wellhead tax would increase the cost of oil in most uses, and the revenues would be recycled with an equal amount rebated to each person. The House Ways and Means Committee has modified this proposal by providing that the revenues be recycled in an equal amount to each adult.[1] Under either approach, each family could consume a certain amount of petroleum without experiencing any net loss from the program—but additional consumption beyond that amount would impose a net penalty. This seems to us to be the fairest way to share the burdens of conservation with a minimum of administrative cost.[2]

When the two elements of this program—petroleum tax and rebate—are taken together, the impact on income distribution will be generally progressive. The petroleum tax alone would be somewhat regressive, probably taking a larger share of income from low and middle income families than from upper income families. At best it might take an approximately equal proportion of income from families at each income level. But the rebate feature would render the program progressive, because equal rebates for families of the same size would represent a larger share of income for low and middle income families than for upper income families.

Comments were requested on the statement of Arthur Okun of the Brookings Institution that the Administration's method of recycling would be unnecessarily inflationary.[3] Dr. Okun is concerned that petroleum tax would be reflected in a higher price of goods—and hence a higher level for the Consumer Price Index (CPI)—while the rebate would not produce a corresponding decline in prices or the price index. It is well to keep in mind, however, that this is largely an "optical illusion." To the extent that the tax in oil still used is passed on to the consumer in the marketplace, but the revenues are rebated through the tax system, the average family is no worse off after the tax than it was before. The real purchasing power of that family will not be reduced.[4]

We see two difficulties with Dr. Okun's proposal that the federal government use the rebate money to induce the states to reduce their sales taxes. First of all, there could be considerable delay in getting a substantial number of state legislatures to respond to the inducements. On the one hand, if the per capita rebates are held up in the meantime, the revenues would not be recycled quickly enough. On the other hand, if the rebates are already flowing to the residents of the state,

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[1] Since children increase a family's need for petroleum products—but probably not as much as adults do—the fairest rebate system probably lies somewhere between the two approaches, taking the form of a rebate for children that is smaller than that for adults.

[2] Perhaps a large administrative system could be designed to attempt to make finer distinctions among families—based on their habits, life situations, places of residence, and particular needs—but the structures could be cumbersome and the increased equity would be dubious.

[3] Statement before Joint Economic Committee hearing on the National Energy Plan, May 20, 1977.

[4] However, to the extent that the tax induces conservation measures that were too costly to be undertaken before the tax, and the cost of those measures is borne by—or passed on to—the consumer, there will be no corresponding tax revenues to be used for rebates. Thus, the wellhead tax would produce some real cost for American consumers, but we feel that would be worth bearing to help reduce our dependence on imported oil.

the voters will be well aware that they will be losing a federal rebate in order to gain a state tax reduction, and the political pressures could well operate against tax reduction.

Second, state sales taxes—especially those that cover such necessities as food and drugs—are quite regressive, but eliminating a per capita federal rebate would be even more regressive. Sales tax payments increase as one goes up the income scale (though not in proportion to the additional income) but the rebates do not increase at all at higher income levels. Thus low income families would lose more from the loss of the rebates than they would gain from the reduction of the sales tax.

As Okun argues, a recorded increase on the CPI can have real effects. For example, it may invoke greater worries about "overheating" the economy and hence discourage efforts to move toward full employment. Perhaps the best approach here would be a direct one of requiring the Labor Department to calculate each month what portion of any increase in the CPI was attributable to energy taxes and the extent to which the impact of that increase on family purchasing power was offset by direct rebates of those taxes. It is, after all, paradoxical to say that a particular urban family of four experiences an increase in its cost of living because it has to pay, say, $50 a year more for petroleum products, if that same family is receiving a $50 rebate from the government directly paid for out of the taxes that induced the price rise.

The Okun proposal raises some valid questions. But our own reaction remains that a per capita rebate provided directly by the federal government represents the quickest, least costly and fairest way to recycle energy tax revenues to the public.

We are concerned, however, that many members of Congress seem reluctant to rebate the revenues to the public. Specifically, we are concerned that the House Ways and Means Committee has only provided for recycling wellhead tax revenues during 1978 even though the tax would continue after that. We are also concerned by the many proposals to spend the tax revenues for other projects—worthy though many of them may be—such as solar energy, mass transit, or research and development. Insofar as these projects are worth supporting, we would prefer to see them financed out of progressive income taxes rather than from reduced per capita rebates.

We would like to see the petroleum tax revenues rebated to each person in the country through the Internal Revenue and Social Security Systems. We would like each taxpayer to know that he or she was receiving such a rebate—for example, through a clear indication on the tax form that the tax liability was being reduced (or the refund being increased) as the taxpayer's share of the petroleum tax revenues. We think that this is the best way to build long-run public support for the changes that will be necessary if we are to meet the energy challenge of our times.

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PRESIDENT CARTER'S ENERGY TAX PROPOSALS

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SUMMARY

Our present policies regulating energy, especially price controls on natural gas and petroleum, are the basic cause of the energy problem. Eliminating them and

allowing the market to work is the most efficient and effective means of solving the energy problem. Apparently this solution is politically unacceptable. President Carter's proposals are a great improvement over present policies. The key policy is the tax on oil which amounts to freeing its price and imposing a 100 percent excess profits tax. Other aspects of the energy proposals are redundant unless there are special reasons for encouraging greater reliance on particular forms of energy. In these cases the use of taxes or taxes and subsidies is more efficient than direct regulation.

STATEMENT

An Optimal Solution

This is composed as I sprawl my materials over four of the nine seats available to me on an airliner. No one on the plane has to confine himself to fewer than four seats. The stewardess offers me wine or champagne before, during, and after lunch. I settle for 24 oz. of U.S. Government certified rat poison (diet cola). There are almost as many stewardesses as passengers. Mine is wearing an SOS button. She says it stands for "Save Our Service." It seems that Senator Kennedy has introduced a bill which President Carter supports to reduce regulation of the airlines. If it passes, flights like this might have to be cancelled. Here is exactly the type of policy President Carter should adopt to end the energy problem. If the Carter program followed this example, there would be no doubt of success.

In the T.V. presentation of his New Energy Program (NEP) President Carter insisted that we are running out of oil and face serious and growing shortages. This is his justification for government programs to restrain demand. Many well educated and intelligent, but economically illiterate, believe this.

No doubt the amount of petroleum in the world is finite. This is, however, irrelevant. The poor old CIA, as if it were not discredited enough already, has been pushed forward to assure us that a monstrous shortage of oil will be upon us in a few years. The quantity demanded will far exceed the quantity supplied. The only reason there is ever a shortage of anything is that price is too low. This is a mathematical fact on the order of the square of the hypotenuse equals the sum of the squares of the opposite two sides. If there is a shortage of oil, it has nothing to do with the amount of oil being finite; rather the shortage exists because the price is too low. The solution is to let the price rise to whatever level the market sets.

A competitive economy uses resources as efficiently as possible to satisfy the wants of consumers. Lest there be any doubt about the competitiveness of the American economy, I have searched the literature. I find no study which claims a loss to society due to monopoly of more than 8 percent. This strongly suggests that the best thing the government can do to insure the most efficient possible use of energy is to define property rights correctly, remove its restrictions, and let the market work. Once this is accomplished, anything further the government does must make things worse, not better.

The Present Policy

Few people know what our present policy is. It is to tax domestically produced oil about $2 a barrel and to use this money to subsidize the importation of foreign oil by $3 a barrel. As less oil is produced in this country and more oil is imported, the tax becomes greater in order to provide the subsidy which makes it attractive to import even more foreign oil.

A study by members of the Policy Study Group of the MIT Energy Laboratory published in "The Public Interest" estimates that 71 percent of our oil imports are caused by this policy. Simply eliminating the subsidy would reduce our imports 71 percent and do more for our military preparedness than any other conceivable energy policy. RAND study No. R-1951-RC published this January claims to show that the current policy does not even reduce the prices of petroleum products at the consumer level. Rather it merely taxes the (mostly small, independent) domestic producers and gives the money to (mostly large, multinational) international oil companies. Eliminating our current system of pseudo price controls on oil might actually reduce consumer prices according to the RAND study. In any event it is clear that ending the existing policy is the most efficient single policy change to reduce our dependence on foreign oil.

Evaluation of the Carter Plan

I take it as given that neither of the above plans is politically acceptable. The purpose of the Carter plan is to modify the economy's incentive system to reduce the use of energy below what it would be in the absence of the new policy.

1. Price controls will be continued on oil, but a tax will be imposed on domestic oil to bring it up to OPEC prices. This should eliminate the subsidy to oil importers and thus reduce the present program's encouragement of ever more imports. The tax will reduce the use of petroleum in all of its uses and is probably the most important portion of the plan. This policy amounts to freezing oil prices and imposing a 100 percent excess profits tax. It is an efficient means of achieving the goal of reduced oil use. It causes oil users to value oil at world prices. It passes the test of improving the current situation with flying colors.

It causes oil producers to value oil at a lower price than users. This leads to inefficiently low production of oil. Whether we are better off with the government or the oil companies getting the money depends on what each will do with it. President Carter says the money will be rebated to consumers. This will increase consumption at the expense of investment and will make future generations worse off than if it were invested by the oil companies. If it were invested by the government in (say) solar energy research, the rate of return on this investment would have to be compared with that earned by the oil companies' use of the resources commanded by this money.

2. New oil is to sell at world prices. The strict definition of new oil insures that this incentive for investment will be weak. Moreover, the profits on old oil if decontrolled would not only provide the incentive for developing new oil, they would also provide the financial resources to do so. The higher prices for both old and new oil would provide both an incentive and the capital required for the development of alternative energy sources. The rebates, however, will be dispersed over all types of consumer goods thus weakening the effect of this incentive at the same time that they reduce the resources, both financial and real, available for investment of all types. Nonetheless, compared to possible alternative policies this, too, passes our test for reasonable efficiency.

3. A tax on gasoline which will increase at 5 cents per year to a maximum of perhaps 50 cents. It is fair to say that a big gasoline tax is the liberal economists' solution to the energy problem. The gasoline tax is viewed with special favor because more than most other policies it reduces energy use rather than primarily substituting one form of energy for another. In principle this is an effective means of reducing the public's use of petroleum, but the small amount makes its impact questionable. Revenue from such a tax should be used in whatever manner maximizes its return to society. The frequently followed policy of tying revenues to uses. However, suggests a rebate to the States for the maintenance of highways. Highway construction is often largely funded by the Federal Government. Maintaining them is an increasing burden on State Governments.

4. A tax on big cars and a rebate on smaller ones is clearly less efficient than a bigger gasoline tax. Apparently it is a compromise because a large enough gasoline tax was deemed politically unacceptable. It would have greater effect if it were an annual tax applicable to old as well as new cars. Moreover, it applies to big cars even if they are driven very little and, therefore, use little gasoline. Will a large family really use less gasoline by going in two small cars instead of one LTD stationwagon? Using this tax to fund a rebate on small cars would tend to reinforce its effects. Such a tax and subsidy scheme is, however, an inferior substitute for a gasoline tax which is high enough to reduce the use of gasoline to whatever amount the President desires.

5. The price for new natural gas would be increased in interstate markets but controlled and reduced in intrastate markets. This will spread shortages to all parts of the country. It will probably reduce the amount of new natural gas since it reduces its price below the existing intrastate price. The proposal is contrary to the principles of scientific economic planning. It requires people to act contrary to the incentives inherent in our (or any other modern) economic system. This will encourage people to want to use more gas, not less. It encourages suppliers to supply less gas, not more. If the price of natural gas cannot be freed for political reasons, a tax similar to the Carter proposal on petroleum would be preferable to this proposal.

6. Tax credits would be granted to people to insulate their homes. If the price of energy accurately reflects its value, people will choose the optical amount of insulation for their homes. There is no need for a tax credit. This, like the gasoline tax, would tend to reduce energy use, not largely shift demand from one type of energy to another. Iti s the liberal economists' housing analog to the energy for transportation solution.

7. A tax on firms which have not converted from natural gas and oil to coal as quickly as government feels they should. This, like the gasoline tax, suggests that even at the OPEC price oil is not priced high enough to meet the value the Carter administration places on it. A more efficient solution is to raise the tax on oil (or to free its price and then tax it too). Moreover, this proposal does not save energy. It merely shifts demand from one form to another. Such a policy implicitly assumes that coal is less valuable than other energy sources.

This is a borderline case. It seems to achieve the goal of reduced petroleum use, but at greater cost than a higher tax on gas and oil would inflict.

8. A tax credit for solar heating. Again, assuming the price of other sources of energy accurately reflects the government's valuation of them, there is no reason for this. It requires the inefficient use of resources. It can be justified only if the government places an especially low value on solar energy. Perhaps some case could be made that this subsidizes learning how to use solar energy which will have external benefits for future users of the unpatentable techniques developer. Moreover, there is no consideration of the environmental problems associated with solar energy which have resulted in solar heating/cooling being banned in some places.

9. Energy efficiency standards will be set for appliances. This is an inefficient means of achieving the goal of reduced energy use. If the price of energy (through market price plus taxes) reflects the value which government places on energy, no further action is required. Perhaps requiring manufacturers to give consumers information on energy use could be justified, but certainly nothing more. Even if reduced energy use by appliances is specifically desired, the use of standards is contrary to the incentive system.

The preferred system is a tax or tax and subsidy system. The problem with standards is not that they will fail to reduce energy use but they are an excessively costly means of doing so. This policy should be eliminated or replaced with a tax on energy inefficient appliances, possibly coupled with a subsidy on highly efficient appliances.

CONCLUSION

President Carter's energy plans meet the requirements for scientific economic planning about as well as they could given the political nature of the decision making process. They should be effective and reasonably efficient in reducing energy use. Taxes or taxes and subsidies are particularly efficient means of achieving the administration's goals and should, therefore, be used more extensively than the President proposes. All of this assumes that the most efficient and effective means of solving the energy problem, ending the government policies which cause it and letting the market work, is politically unacceptable.

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