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Global Climate Change: The Energy Tax Incentives In the President's FY1999 Budget

Salvatore Lazzari
Specialist in Public Finance
Economics Division

Summary

The President's FY1999 budget includes several energy tax incentives designed to help the United States reduce greenhouse gases that are linked to possible global warming. These incentives subsidize energy conservation, energy efficiency, and substitution toward alternative fuels such as solar power and electricity produced from biomass and wind. The conservation and efficiency tax incentives are in the form of nonrefundable tax credits for energy-saving capital goods, and they target each of the energy end-use sectors: transportation, industry, residential and commercial. In addition, some of the tax credits are intended to directly reduce the amount of harmful greenhouse gases that would otherwise be released into the atmosphere. Most of the incentives are new, some resembling versions of energy tax incentives that were enacted under President Carter's Energy Tax Act of 1978 (as amended), but have since expired. Two of the provisions constitute a liberalization of existing energy tax subsidies.

Residential and Commercial Buildings

Three tax credits are proposed in the FY1999 budget to reduce the use of conventional energy — electricity from fossil fuels, natural gas, heating oil, etc. — in residential and commercial buildings: (1) tax credits for equipment that uses solar energy; (2) a tax credit for the purchase of energy-efficient, new homes; and (3) a tax credit for purchases of energy efficiency equipment, and materials.

Tax Credits for Solar Energy Equipment. The Administration proposes a tax credit for two types of solar energy using equipment: (1) a 15% tax credit for up to $13,334 in investments in rooftop solar equipment that uses photovoltaic cells to generate electricity, for a maximum tax credit of $2,000; and (2) a 15% tax credit for up to $6,667 in investments in solar water heating equipment (other than swimming pools), for a maximum tax credit of $1,000. Solar equipment installed in either a personal residence or a business would qualify for this tax credit, which would be "nonrefundable," i.e., limited by the amount of tax otherwise owed.

The credit for photovoltaic systems would last for 7 years, beginning in 1999; the credit for water heating systems would last for 5 years, also beginning in 1999. Photovoltaics are solar cells made of semiconductor material capable of converting sunlight directly into electricity. A photovoltaic solar system combines individual cells into a panel, which can be interconnected and used as part of a sunlight-absorbing roof or as separate self-contained electricity generating system on the ground.

Current law provides for a 10% tax credit for investment in solar photovoltaic systems or for solar equipment used to heat or cool a structure or for solar process heat. Only businesses qualify for this credit, which also applies to geothermal systems. The equivalent credit for residential solar systems expired at the end of 1985. The business solar credit is the remnant of the more extensive system of residential and business tax credits for conservation and renewable energy that were part of President Carter's National Energy Plan of 1978, but which largely expired at the end of 1985. Only the business energy tax credits were extended several times beyond 1985, and for gradually fewer and fewer types of energy equipment. Under President Clinton's FY1999 proposal, businesses that invest in qualifying solar equipment would have to choose between the current 10% tax credit and the proposed 15% tax credit.

Tax Credit for New Energy Efficient Homes. Some federal laws and certain states require energy-using home appliances, heating and cooling equipment, and insulation to meet certain energy efficiency standards. But there are otherwise no special tax incentives to encourage the supply of energy efficient homes. The President's FY1999 budget proposes a tax credit for the cost of a new home that would meet certain specified and stringent energy efficiency standards. The tax credit would equal to 1% of the home's purchase price up to a maximum credit of $2,000 for homes purchased between 1999 and 2003,and $1,000 for homes purchased during either 2004 or 2005. Qualifying new homes would have to be at least 50% more energy efficient than the standard for single family homes specified in the Model Energy Code.

Tax Credit for Energy-Efficient Building Equipment. The last of the three tax credits to reduce the use of conventional energy in residential and commercial buildings is a 20% tax credit for the cost of six types of advanced energy-efficient equipment and technologies for space heating and cooling and hot water heaters, as follows:

- More efficient air conditioners
- High energy-efficiency advanced natural gas water heaters
- More energy efficient natural gas heat pumps
- Energy efficient electric heat pumps
- Energy efficient electric heat pump water heaters
- Fuel cells.

Each of these six types of qualifying equipment would have to satisfy stringent energy efficiency standards, as compared with current types of equivalent non-energy efficient equipment. Only costs up to a maximum ceiling — as yet unspecified — would qualify for the tax credit. The credit would be available for the costs of qualifying equipment purchased during the 5-year period from January 1, 1999, to December 3, 2004.

Under current law, no tax credits or other tax incentives are provided for equipment to make business stuctures more energy efficient. The 1978 Energy Tax Act provided for

a system of business energy investment tax credits for several categories of energy conservation property — called "specially defined energy property," — but these were essentially equipment used in manufacturing or industrial processes rather than in buildings. As with the 1978 solar energy tax credits, these energy equipment tax credits also expired at the end of 1985.[1]

Industrial Energy Use

Under the President's proposal, three types of industrial energy equipment would qualify for a 10% investment tax credit: (1) combined heat and power systems ; (2) certain circuitbreaker equipment; and (3) certain recycling equipment.

Tax Credit for Combined Heat and Power Systems. A 10% investment tax credit would be provided for businesses that invest in combined heat and power systems that meet certain energy efficiency standards. Combined heat and power systems capture the thermal energy (for either heating or cooling) or the mechanical power — whatever the case may be — that would otherwise be wasted when industrial manufacturing processes generate electricity. Thus, they are essentially a type of cogeneration equipment: with one source of energy, a company can simultaneously power its turbines to generate electricity and either heat and cool its building or provide mechanical power needed in some manufacturing process. Fuel inputs are conserved by making an energy-using process — the generation of electrical power — more efficient: the otherwise wasted energy would be harnessed and would be used in the same process.

Current tax law provides no tax credit for this type of industrial energy equipment. Cogeneration equipment was added in 1980 to the list of property qualifying for the 10% business energy investment tax credits under the original Energy Tax Act of 1978. These expired at the end of 1982, 3 years before the expiration of the residential energy tax credits and the other business energy tax credits.

Tax Credit for New Types of Circuitbreakers. Some large circuit breakers used by public power companies (electric utilities) in the transmission and distribution of electricity use a gas (sulfur hexafloride) that leaks into the atmosphere when the breakers age. Under the President's proposal, a 10% tax credit would be available for the replacement of these leaky, older (pre-1985) circuit breakers with new power circuitbreaker equipment. The Administration believes that sulfur hexafloride is an extremely harmful greenhouse gas. No similar tax credit or other tax incentive has ever been provided.

Tax Credit for Certain Recycling Equipment. A 10% investment tax credit would be provided to producers of semiconductors for investments in equipment used to recycle two harmful greenhouse gases used in the production of semiconductors: perfluorocarbon (PFC) and hydrofluorocarbon (HFC). The tax credit would apply to new equipment placed in service in the 5-year period beginning January 1, 1999, and ending December 31, 2003. Under current law no special tax credit is provided for this type of recycling

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[1]U.S. Library of Congress. Congressional Research Service. *An Explanation of the Business Energy Investment Tax Credits.* CRS Report 85-25 E by Salvatore Lazzari. January 24, 1985. Washington.

equipment, although such equipment may be depreciated over 5 years. The 1978 business energy tax credit provided for a 10% tax credit for businesses that recycled solid wastes. This tax credit expired at the end of 1982.

Transportation Energy Use

Two tax incentives are proposed to conserve petroleum in the transportation sector: (1) a tax credit for fuel efficient vehicles; and (2) a higher income tax exemption for mass transit fringe benefits.

Tax Credit for Fuel Efficient Vehicles. A new tax credit would be available for the purchase of cars and light trucks (including minivans, sport utility vehicles, and pickups) that are at least twice as economical as current vehicles in their class. For vehicles rated at least twice the base fuel economy, the credit would be as follows: $3,000 if purchased between January 1, 2000, and January 1, 2004; $2,000 if purchased during 2004; and $1,000 if purchased in either 2005 or 2006. If the vehicle is rated at least 3-times the base fuel economy, the tax credit would be as follows: $4,000 if purchased between January 1, 2002, and January 1, 2007; $3,000 if purchased during 2007; $2,000 if purchased during 2008; and $1,000 if purchased during either 2009 or 2010.

Current tax law contains several tax incentives — and some nontax disincentives — to conserve conventional, petroleum based motor fuels, particularly gasoline and diesel fuel. First, gasoline and diesel fuel are taxed at the rates of 18.4¢ and 24.4¢ per gallon. Second, an excise tax is imposed on the sale of domestically produced or imported "gas guzzlers" that do not meet the fuel economy standards (the CAFE standards) established by the Environmental Protection Agency. The tax rate is graduated, ranging from $1,000 for vehicles rated between 21.5 and 22.5 miles per gallon (MPG) and $7,700 for vehicles rated at less than 12.5 MPG.

In addition to taxes on conventional fuels and "guzzlers" of conventional fuels, federal tax law provides a deduction for clean-fuel vehicles and a tax credit for electric vehicles. Since 1992, a federal tax deduction has been available for individuals or businesses that purchase vehicles that run on alternative fuels.[2] Taxpayers can deduct from adjusted gross income a portion of the costs associated with the purchase of dedicated alternative fuel vehicles (AFVs), or the costs of converting vehicles so that they can operate on clean-burning alternative fuels (dual fuel AFVs) in addition to gasoline. Dedicated AFV's are new vehicles designed to run on an alternative fuel only.

For dedicated AFVs, costs up to $2,000 for qualified property can be deducted for a vehicle up to 10,000 lbs., up to $5,000 for a truck or van of 10,000 to 26,000 lbs., and up to $50,000 for a truck or van over 26,000 lbs. Qualified property for a dedicated AFV includes the full cost of the engine, the fuel delivery system, and the exhaust system. For a dual-fuel vehicle, the qualified cost is limited to the incremental cost of the same components compared with the systems for conventional fuels. Alternative fuels are defined as compressed natural gas, liquefied petroleum gas, liquefied natural gas,

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[2]For a more detailed discussion of these provisions see: U.S. Library of Congress. Congressional Research Service. *Energy Tax Provisions of the Energy Policy Act of 1992.* CRS Report 94-525E, by Salvatore Lazzari. Washington, 1994.

hydrogen, electricity, and any other fuel that includes 85% alcohol fuels, ether, or any combination of these. In addition, all of the property that qualifies for the deduction — the new vehicle, or the conversions equipment — must be new. Qualifying vehicles must meet any applicable federal and state environmental standards. For business taxpayers, the basis of the property for purposes of the depreciation deduction is reduced by the amount of clean-fuel-vehicle deduction. In general, each of these deductions terminates at the end of 2004. But there is a phase-out provision in the case of new clean-fuel burning vehicles or retrofit equipment. The deduction is phased-out evenly over a 3-year period beginning in January 2002.

In lieu of a tax deduction, consumers that purchase an electric vehicle can claim a 10% nonrefundable tax credit for the cost of the vehicle placed in service prior to 2005. The maximum credit is $4,000.[3] Also, for businesses that purchase electric vehicles, the maximum amount that may be deducted annually for depreciation is three times larger than the depreciation limit for other types of automobiles. In general, the amount that businesses may deduct annually for depreciation of an automobile is limited to $2,560 the 1st year, $4,100 the 2nd year, $2,450 the 3rd year, and $1,475 each subsequent year in the recovery period. Each of these amounts are adjusted annually for inflation that has occurred since 1987 so that the amounts for 1997 (for most cars) were $3,160, $5,000, $3,050, and $1,775. For electric vehicles, however, the base amounts are $7,680, $12,300, $7,350, and $4,425, respectively. These annual limits are also adjusted for inflation after 1997. The higher depreciation limits for electric vehicles was a provision of the Taxpayer Relief Act of 1997.

Higher Tax Exemption for Mass Transit Fringe Benefits. The President's budget proposal includes a provision to increase the income tax exemption for employer payment or reimbursement for the costs of mass transit (bus fares, subway or train fares) or van pools costs to the level of tax exemption for employer provided parking benefits. Currently, federal income tax law stipulates that mass transit or van pool payments above $65 per month must be reported as income — i.e., up to $65 per month is exempt from taxation. Current tax law also taxes employer provided parking or reimbursements for parking expenses above $175 per month — i.e., the exemption for such expenses is $175 per month. The President's proposal would raise the exemption for mass transit and van pool passes to $175 per month, thus equalizing the two transportation fringe benefits..

Tax Credit for Electricity Produced from Wind and Biomass

The President's FY1999 budget would extend by 5 years the current tax credit for electricity produced from wind and biomass. Under current law, an income tax credit is provided, as part of a tax code section, in the amount of 1.5¢ /kWh. (in real, 1992 dollars) for electricity generated from wind or from closed-loop biomass systems. The credit for 1997 was 1.6¢ /kWh. Closed loop biomass systems use plants grown exclusively for electricity production. Thus, the credit is not available for the use of waste and most other biomass to generate electricity. Any plant used exclusively for electrical generation, except standing timber, which is specifically disqualified, qualifies for the credit. The

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[3]The Taxpayer Relief Act of 1997 amended the excise tax treatment of luxury vehicles to make it more difficult for clean-fuel and electric vehicles to be designated as luxuries subject to that tax.

credit is available to facilities that begin service after 1992 (for biomass) and 1993 (for wind) but before July 1, 1999. Any qualified facility that opens during that period can then earn the tax credit for its first 10 years of operation. The President's proposal would extend this to July 1, 2004.

This tax credit is phased out, proportionately, as the reference price — the average price of renewable electricity sold by qualified wind and biomass facilities — rises from 8 ¢ /kWh to 11¢ / kWh. Both the credit amount and the phase-out limit is adjusted annually for inflation. The credit is also to be reduced during any taxable year for which the project has received grants, proceeds from tax-exempt bonds, subsidized energy financing, and any other credit allowable for property that is part of the project.

For 1994, the reference prices were 5.4¢ / kWh for facilities producing electricity from wind, and 0.0¢ / kWh for facilities producing electricity from closed-loop biomass systems. For 1997, the reference prices were 6.4¢ and 0.0¢, respectively. Since both reference prices were less than the threshold prices for the credit phase-out, the renewable electricity credit was not phased-out and remained at 1.5¢ / kWh. In calender year 1996, there were no sales of electricity produced from closed-loop biomass energy resources under contracts signed after December 31, 1989.