

[COMMITTEE PRINT]

ANALYSIS OF ENERGY SUPPLY,  
CONSERVATION, AND CONVERSION

HOUSE BILL (H.R. 6860) AND  
POSSIBLE ALTERNATIVES

ENERGY INVESTMENT CREDIT

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PREPARED FOR THE USE OF THE  
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## ANALYSIS OF ENERGY SUPPLY, CONSERVATION, AND CONVERSION—ENERGY INVESTMENT CREDIT

### Introduction

The House bill contained a series of provisions, most of them providing for 5-year amortization although in some cases relating to the investment credit, designed either to aid in the conservation of oil and gas or to encourage the conversion of facilities using oil and gas to other forms of energy. The committee may prefer greater use of the investment credit for these purposes than did the House bill. Also, the committee may desire not only to aid in conservation and conversion but also to provide some specific incentives to encourage the increased production of oil and gas in the United States. For these reasons the staff has consolidated in this pamphlet a group of provisions which the committee may want to consider as an "energy investment credit." The purpose of the credit would be three-fold: to increase supplies of energy, to encourage conversion from oil and gas to other forms of energy, or to conserve energy. In some cases the incentives may encourage more than one of these effects.

Basically, the form set forth below is that of a 10-percent investment credit making use of the regular rules relating to the investment credit under present law (this means that unless otherwise specified the credit would decrease to 7 percent at the end of 1976 unless Congress were to change the general investment credit as of that time). In some cases, however, possibilities for a larger credit are set forth. In addition, it appears that considerations vary in some cases as to the period of time over which the committee might want to make provision for the investment credit.

Other conservation and conversion measures which do not appear to fit into the pattern of a business-related energy investment credit will be set out in subsequent pamphlets.

### A. INTANGIBLE DRILLING COSTS, GEOLOGICAL AND GEOPHYSICAL COSTS

#### *Present law*

Under present law, an investment tax credit is allowed for tangible personal property which is used in the taxpayer's trade or business and which meets certain other requirements as to useful life, etc. Currently the credit is allowed at a 10-percent rate, but under present law this rate is scheduled to be reduced to 7 percent beginning in 1977. The amount of the credit which may be taken in any year is generally limited to \$25,000 plus 50 percent of the taxpayer's income tax liability over this amount. (As a result of the Tax Reduction Act, higher percentage limits apply to public utilities for the next 5 years.)

No investment tax credit is allowed, however, for intangible drilling

and development costs incurred in connection with oil and gas exploration, nor for geological and geophysical costs, since neither of these costs represents investments in tangible personal property. For the same reason, no investment credit is allowed for intangible drilling and development costs incurred in connection with drilling for geothermal wells. However, depreciation charged on equipment used in drilling operations is included in intangible drilling costs. Also labor costs incurred in connection with the installation of certain physical property are treated as intangible drilling costs.

*House bill and administration proposal*

The House bill contained no provision in this area, and the administration has made no proposal for energy legislation in this area during this Congress. However, S. 2057, introduced by Senator Tower, is essentially similar on this point to proposals made by the administration in 1973. That bill provides the investment credit at a 10-percent rate to exploratory oil and gas wells, geological and geophysical costs, lease acquisition costs, and secondary and tertiary recovery costs. In addition, the bill establishes a supplemental credit equal to 5 percent of these costs attributable to an exploratory well, which can be applied against the tax on the first income from the property on which the exploratory well was drilled.

*Staff analysis*

Even if major energy conservation programs are adopted for future years, the United States will still be dependent on imported oil for much of its needed supplies in the near future. However, as discussed in the "Overview" pamphlet these foreign sources of oil and gas may not be dependable in times of emergency, and in any event the current world price of oil (about \$13.50 per barrel) is sufficiently high that the cost of imports creates economic problems of sizeable magnitude. While the substantial increases in price which have occurred present a significant incentive to explore for oil, still it would appear that there are advantages in including in a comprehensive energy bill some incentives to discover new domestic reserves as rapidly as possible. To the extent these incentives result in increased domestic supplies of oil and gas, they can lessen our dependency on foreign oil imports until other forms of energy resources (such as solar energy and nuclear power) are fully developed.

One approach which may be considered is to make the investment credit available for intangible drilling costs incurred in connection with an exploratory oil or gas well, and for geological and geophysical costs of oil and gas exploration. This approach would provide substantial encouragement for the discovery of new energy reserves by utilizing a mechanism which is already in the tax law (i.e., the investment tax credit) to provide an incentive for other forms of needed investment.

For this purpose, exploratory wells which would be eligible for the credit might include nonproducing wells (i.e., wells which, by the nature of the method and equipment used for drilling, are not capable of producing oil or gas in commercial quantities), and wells drilled more than 2 miles from any producing well in existence at the time the exploratory well is completed. A credit might also be allowed for a

well which is drilled within two miles of a producing well, but which taps a separate reservoir.

Geological and geophysical costs, in general, would be costs incurred in connection with geological and geophysical methods of ascertaining the existence, location, extent, or quality of any deposit of domestic oil or gas. These could include (but need not be limited to) aerial photography, geological mapping, airborne magnetometer surveys, gravity meter surveys, and seismograph surveys.

The person entitled to the credit would be the person entitled to the deduction for intangible drilling costs, and the person to whose capital account the geological and geophysical costs would be credited. In addition, it could be provided that the amount of the credit base would be limited to the taxpayer's investment in the exploration project (plus the amount of project-related borrowings for which he was at risk). This would help ensure that the benefits of the credit are made available to those who actually risk their capital in connection with oil and gas exploration (and would limit the possibility that the credit might be used in connection with leveraged tax shelters). As a further safeguard in this area, it might be provided that there would be a recapture of any credit allowed with respect to property which was sold (or otherwise disposed of), before it was fully developed by the taxpayers who had claimed the credit.<sup>1</sup> The recapture would limit the benefit of the credit to those independent drilling operators who normally sell their successful wells to major oil companies.

In order to maximize the effectiveness of the credit in terms of helping to meet the nation's immediate energy needs, it might be provided that the credit would be allowed only with respect to intangible drilling costs and geological and geophysical exploratory costs which are incurred within a limited period of perhaps 5 years up to possibly 8 years. Thus, it could be provided that the credit would be allowed only with respect to such costs which were paid or incurred after the date of enactment (or the date of the committee's decision on this point), and prior to the termination date. At that time, Congress could review whether it was desirable for the economy to further extend this credit.

It it were thought desirable to limit the credit to non-integrated independent producers (who do much of the onshore exploratory drilling in the United States), the committee could limit the credit to producers who have no retail outlets and no substantial refining capacity (in a manner generally similar to the provisions which were adopted in connection with the small producer exemption from the repeal of percentage depletion in the Tax Reduction Act).

The committee may also wish to consider extending the credit to expenses incurred with respect to secondary and tertiary recovery methods. In this connection, it is to be noted that testimony presented to the committee indicates that in the short term secondary and tertiary recovery methods offer the possibility of substantial increases in domestic

<sup>1</sup>This is somewhat analogous to the rule, which exists under present law in connection with the investment tax credit, that the credit is subject to recapture if the taxpayer's actual useful life of property for which the credit is claimed proves to be less than the estimated useful life of that property to the taxpayer.

production of oil and gas. However, adding these costs would increase the revenue costs from about \$210 million in 1976 to close to \$800 million.

*Geothermal drilling costs*

The committee might also wish to consider allowing the credit in connection with intangible drilling costs incurred in connection with geothermal wells. For this purpose, geothermal wells might include wells which develop geothermal resources such as indigenous steam, hot water and hot brines, steam and other gases, hot water and hot brines produced by injecting water, gas or other fluids artificially into geothermal formations, as well as heat or other associated energy found in geothermal formations, and any "byproducts" derived from geothermal formations (within the meaning of the Geothermal Steam Act of 1970, 30 U.S.C. 1001).

*Revenue and energy effect*

It is estimated that a 10-percent investment credit for intangible drilling costs for exploratory oil and gas wells, and for geological and geophysical costs, would result in a revenue loss of \$210 million for 1976, and increasing to an estimated \$370 million for 1980.

Estimates of the response of oil and gas supplies are unreliable, but this proposal could be expected to increase oil production by 0.25 mbd by 1985.

**B. ENERGY USE PROPERTY**

*Present law:*

Five-year straight-line amortization is permitted for the capital costs of several different types of special-purpose business machinery, equipment, and facilities. Rapid writeoffs are not now available, however, for equipment designed specifically to expand the nation's use of energy sources other than oil and gas.

*House bill*

The House bill permits five-year amortization (in lieu of regular depreciation) for the capital cost of the following depreciable items:

- (1) machinery or equipment required to be added to an existing facility (or placed in a new facility) to permit waste to be burned as a fuel, to process waste into a fuel, or to recycle solid waste or prepare solid waste material for recycling;
- (2) machinery or equipment necessary to reach or extract oil shale, or convert oil shale into oil or gas;
- (3) machinery or equipment used to derive synthetic oil or gas from coal, and to remove pollutants from coal by in-factory processes;
- (4) coal slurry pipelines or other coal-transporting pipelines;
- (5) solar energy equipment (but only if the taxpayer elects to forego the investment credit on this property); and
- (6) machinery, equipment, and structural components of underground coal mines.

These rapid writeoffs are to be available for a limited period in order to give Congress an opportunity to review the effectiveness of this incentive and to decide whether it should be continued. The provision applies to property placed in service after March 17, 1975, and before January 1, 1981.

For all but one of the above six eligible types of equipment, the owner is to be entitled both to the rapid writeoff of costs and to the investment credit. However, since the property is, in effect, treated as having a useful life of only 5 years for writeoff purposes, it is also treated as five-year property for investment credit purposes. As a result, the investment credit is available for only two-thirds of the cost of the property. Moreover, in the case of solar energy equipment, the owner must choose between a rapid writeoff and any investment credit; if he elects the 5-year amortization for any solar energy equipment, he must forego the entire investment credit for that item of equipment.

*Administration proposal*

The Administration has not proposed tax measures to expand the availability of alternate energy sources. Instead, the administration has called for nontax legislation relating to the surface mining of coal; it has sought to increase production under existing coal leases on public lands and to encourage new coal leases; it has proposed legislation to increase the number of nuclear power plants; and it has proposed attaining commercial production of synthetic fuels from coal and oil shale by incentives such as price guarantees, purchase agreements, capital subsidies, and leasing programs.

The administration specifically opposes the 5-year amortization and investment credit proposals of the bill.

*Staff analysis*

Under the House bill, taxpayers would generally be faced with a choice, as to property eligible for the new rapid amortization rules, of (1) 5-year straight line amortization and two-thirds of an investment credit, or (2) double-declining balance depreciation over the period of the property's guideline life (or the shorter asset depreciation range—ADR—life) plus full investment credit. Under present conditions, regular depreciation under ADR lives plus a full investment credit is more advantageous than the choice offered by the House bill for property with guideline lives of less than 14 years. Relatively small amounts of the type of property discussed above have guideline lives as long as 14 years. Consequently, it is expected that rapid amortization would not be elected for most of the property eligible for such treatment under the House bill. That is the major reason why the revenue losses shown for these House bill provisions are so low.

If the committee wishes to provide tax incentives for such types of property, it may wish to consider replacing the amortization provisions with either (1) an extension of the 10-percent investment credit for such property beyond the current scheduled expiration date (thereby permitting more effective planning for construction or acquisition of long-lead-time property), (2) increasing the investment credit (by perhaps 2 percentage points) for such property or, (3) speeding up the phase-in of the provision (adopted in the Tax Reduction Act of 1975) allowing taxpayers in certain cases to claim the investment credit as progress payments on the investment property are made.

It may be appropriate, also, to examine the type of property for which such an additional incentive would be allowed. The first of the categories in the bill deals with machinery or equipment necessary to permit waste alone or a combination of waste and oil to be used as a fuel. The benefit is to be available only for so much of the property

as is necessary to facilitate the use of waste as fuel or the addition of waste to fuels. This benefit probably should be available not only when the waste is used by itself or in combination with oil as in the bill, but also when it is used in combination with other fuels, such as coal. Such property might be given a 12-percent investment credit for the next 5 years.

Consideration might be given to providing a 12-percent investment credit for the next 10 years for oil shale equipment, and that a similar provision be made for coal slurry pipelines, coal liquefaction and coal gasification property. The structures involved in this case are large and complex. As a result, they often require time in developing and constructing, and it was for this reason that it was believed that the longer lead-time of 10 years might be desired by the committee in this case.

Solar energy equipment would be made eligible for the regular investment credit business situations (and as noted in a subsequent pamphlet, a special credit would be available in the case of residences). In addition, the House bill would make trust fund monies available for basic and applied research programs (sec. 312(a)(1)(A)) and for loans and subsidies for development and demonstration of solar energy systems (sec. 312(a)(2)(H)). A question arises, then, whether the five-year amortization option provided in this part of the House bill is appropriate, and the committee may want to delete it.

Similar concerns may be raised with regard to coal mining. The present failure to increase the use of coal relates to the problems of transportation and, especially, demand, not supply. Consequently, it may be appropriate to provide incentives for coal pipelines and coal gasification without providing similar incentives for coal mining. The current high price for coal (as well as the availability of percentage depletion and capital gain treatment) may be sufficient incentives for coal mining. The committee, therefore, may want to delete the provision giving five-year amortization for deep-mining coal equipment.

#### C. ELECTRIC GENERATORS

##### *Present law*

Businesses are entitled under present law to investment credits for investments in depreciable equipment, including equipment used to generate electricity. For purposes of the credit it is not material whether such generators are fueled by oil, natural gas, coal, nuclear power, or any other type of fuel.

##### *House bill*

The House bill repeals the investment credit for electrical generating property which uses oil or other petroleum products (including natural gas) as its fuel and which is placed in service after April 17, 1975. However, a number of exceptions are provided (similar to those which have been made to suspension or termination of the investment credit in previous years) to deal with situations where the taxpayer may have incurred substantial legal or economic obligations committing it to go forward with construction or acquisition of oil- or gas-fired electrical generating equipment after that date. One exception is made for electrical generating property acquired, constructed, reconstructed, or erected pursuant to a contract which was binding on the taxpayer on

and at all times after April 17, 1975. A second exception is made under the so-called plant facility rule for facilities under construction or largely paid for under a plan by April 17, 1975. A third exception is made for situations where the taxpayer had on hand on April 17, 1975, over 50 percent of the parts and components for an item of electrical generating property. A fourth exception is made for certain sale-leaseback transactions where a company which intends to use electrical generating equipment (fueled by petroleum) acquires it pursuant to a contract which was binding on it on April 17, 1975, but then sells the equipment to another person and leases back the use of the equipment.

*Administration proposal*

The administration has proposed increasing the investment credit permanently to 12 percent for all electrical utility property except generating facilities fueled by oil and gas. It opposes lowering the investment credit on electric power plants fired by oil or gas, below the rates generally applicable. The administration proposes to achieve conversion to the use of domestic coal by relying on the authority given to the Federal Energy Administration in the Energy Supply and Environmental Coordination Act of 1974 to order power plants to burn coal rather than oil or natural gas. (FEA recently issued conversion orders to several utility companies and also ordered several other companies building new power plants to make these plants capable of burning coal). The administration has also proposed various amendments to strengthen and extend the FEA's authority under the above act, so that, for example, FEA could issue conversion orders to any major fuel-burning installation as well as to power plants. The administration has also proposed amendments to the Clean Air Act to strengthen the authority of the Environmental Protection Agency in reviewing the environmental effects of conversion to coal at the generating stations. The administration has estimated that its program would reduce the need for oil imports by 60,000 barrels per day in 1975 and 200,000 barrels in 1977.

*Staff analysis*

The House provision removes an incentive to build electrical generating facilities that use oil and gas as a fuel. Unlike the administration proposal, it is not limited to public utility power plants, but also affects electrical generating equipment which an industrial or commercial manufacturer maintains for its own use. The House provisions, however, contains no exception from the repeal of the investment credit for generating equipment which continues to be powered by oil or natural gas because of difficulty in obtaining alternate fuels or because the burning of coal would violate local anti-pollution laws. The committee may want to add such a provision. Also, the committee could consider an alternative of guaranteeing a 10-percent investment credit for five years for electrical generating facilities that do not use oil or gas.

In addition, the committee may wish to consider the use of a combination of incentives and disincentives to deal with electric generators and utility rate structures. This combined approach is discussed more fully below, under D. Utility rate structures.

## D. UTILITY RATE STRUCTURES

*Present law*

There is no provision dealing with utility rate structures under the Internal Revenue Code (apart from those provisions relating to the rate at which the tax benefits of the investment credit and accelerated depreciation may be passed on to a utility's customers).

*House bill*

The House-passed bill does not contain any such provision.

*Administration proposal*

The administration has recently made a number of proposals for aiding public utilities, although none of these proposals specifically deal with the question of whether rate structures encourage unnecessary energy use. However, the FEA is actively involved in encouraging reform of rate structures and has frequently intervened in local rate-making proceedings toward that end.

*Staff analysis*

There are two aspects of gas and electric utility pricing structures which could be modified in a way that would save energy and, to some extent, make more efficient use of the existing utility capital stock. Changes in these aspects of the utility pricing system could contribute to energy conservation and at the same time help alleviate the shortage of capital in the utility area. The first aspect of the utility pricing structure that could be modified is the quantity discount feature. Under this pricing method, the more units of energy (gas or electricity) that a customer uses, the lower the price per unit. This is usually accomplished through a bracket price structure, i.e., so much for the first thousand units, a lesser amount for the next one thousand, etc. This applies both to industrial and to residential users and was adopted to encourage greater use of the product provided by the utilities. In the past, these discounts have taken the form of minimum charges and lower overall rates for those who purchase "all-electric" homes, as well as ordinary discounted rates for higher levels of use. While there is some basis for this practice in the tendency of unit cost to decrease as larger amounts are supplied, in the present context of an energy shortage, this pricing structure designed to increase the use of energy by reducing the price as larger amounts are consumed, seems to be a questionable practice.

A second feature of the utility price structure that might be changed is the adoption of "peak-load pricing." This would impose a higher unit charge on service used during periods of peak use in order to encourage the users to shift their demand to offpeak hours. The principal effect of such a change in the price structure would be to reduce the demand for additional utility investment and reduce the capital needs of utilities to some extent. This would be achieved because a substantial part of the additional investment required by utilities is to meet peak-load demand. If peak-load demand could be reduced by spreading it more uniformly throughout the day, then the amount of necessary utility capacity could be significantly reduced. Also, the capacity used at peak hours tends to be the least fuel efficient.

The FEA staff has suggested that an appropriate policy might be to combine end-use conservation with load management. As they

have indicated, the former relates to the level of electricity usage and the latter deals with the rate structure to obtain such usage.

The load management, as they refer to it, means influencing the demand for electricity so that it does not increase the cost of service. A load management program as the FEA staff outlined it generally consists of:

(1) structural rate reform to ensure that consumers receive in accordance with their individual responsibility for the costs of service; The elements of restructured rates include:

pricing that relates to a consumer's responsibility for a utility system's peak

time varying rates which vary both by season and by time of day

block structures that reflect the true cost implications of alternative levels of usage

The rate basis which produces maximum economic efficiency is marginal cost or long run incremental cost. That system is not in place today and the implication of that fault is that:

consumers are not provided with correct price signals that track the cost implications of their usage

consumers who do contribute to true utility costs are subsidized by consumers who do not.

Marginal cost based rates would promote economic and energy efficiencies, improve plant utilization, favor baseload coal and nuclear generation over peaking generation, and effect fairness in cost allocation among consumers. Rate forms embodying marginal cost principles can be designed and are being implemented in several utility systems now in the country.

(2) load management practices and technologies

simple deferrals of discretionary loads to off-peak periods stimulated by incentives in the rates;

space conditioning (both heating and cooling) constrained to off-peak periods. Great Britain, France, and Germany now have installed space heating systems that depend upon off-peak power. These are being demonstrated in the U.S.

water heating off peak

ripple load control systems that depend upon a radio signal being sent out over transmission lines to interrupt certain loads for certain specified periods (15 minutes, typically) in ways that do not inconvenience the consumer but which do substantially improve utility operating characteristics

temperature sensing interrupts for air-conditioning

automatic temperature thermometer thermostat set-back devices programmable to accommodate individual living habits

remote automatic meter reading capability in combination with interrupt signalling.

The institution, nationally, a load management program combining structural rate reform with load management practices and technologies could net the following according to FEA estimates:

an improvement of capacity factor from 49 to 57%

a reduction in capital requirements by 1985 of \$48 billion (\$226 billion for a 5½%/year growth rate without load management vs. \$178 billion for a 5½%/year growth rate WITH load management, which would reduce peak growth rate to about 4%/year.) Offsetting these capacity expansion savings, of course, would be the yet unidentified costs to install the load management technologies and metering to carry out the program

a savings by 1985 of 1.3 million barrels of oil per day by shifting demands to baseload coal and nuclear. (Coal and nuclear generation would expand from the present 50% of kilowatt-hour output to 62%.)

#### *Alternative proposals*

The committee might wish to consider ways in which State public service commissions could be induced to change the utility pricing structure to eliminate quantity discounts and institute peak-load pricing procedures.

There are several methods that the committee might consider to induce the State commissions to adopt these pricing changes. One approach would be to provide a tax incentive to the utilities, such as an expanded investment credit or more rapid write-offs only in such cases where the commission required the indicated changes in pricing practices.

A second approach would be to make the incentive a negative rather than a positive one, such as imposing an excise tax on the utilities' customers if the utilities fail to adopt either or both of these pricing changes. The excise tax could be some percentage of the utility bill initially, for example, 10 or 20 percent, and graduated upwards if the pricing change was not made over a period of years.

A third approach would be to provide an incentive to the State governments to induce the public service commissions to adopt these pricing rules. This could take the form of additional amounts of revenue sharing money paid to those State governments which require their State commissions to adopt these pricing rules. The amount of revenue sharing money could be, for example, some portion of the total utility bills in the particular State or a flat amount per capita, or based on some combination of these factors.

If any of the above ways are to be used to induce policy changes in quantity discounts and peak-load pricing, the committee may want to provide for the adoption of specific plans by State utility commissions which meet the specified guidelines and which adopt plans approved by the Federal Energy Administration. Under this proposal, the State public service commission could be required to provide to the Federal Energy Administration plans by which the utilities under their jurisdiction would:

- (1) adopt structural rate reform embodying innovative rate structures including such schedules as peak-load pricing, rate flattening, rates which vary with the time of day and season of the year, lifeline rates, and any other similar regulatory practices and activities which may be of utility in the development of rates that track correct costs and which more fairly allocate those costs among consumers;

(2) adopt load management practices and technologies including ripple load control systems, space conditioning systems constrained to off-peak times, hot water systems constrained to off-peak times, interruptible industrial tariffs in conjunction with specific industrial loads, and any other practices and technologies which the Federal Energy Administration certifies as adequate in promoting load management.

Upon certification by the FEA that the plans will achieve the energy goals, the utilities under the jurisdiction of the public utility commission in question would be entitled to receive the increase in investment credit provided for in these cases; or, if an excise tax would otherwise be imposed, the utilities in this area would not be subject to this tax; or, if all utilities in a State complied, the State could become eligible for additional revenue sharing funds. If the additional investment credit is the technique used in this case to achieve the results desired, the additional credit could (although would not necessarily be) limited to the type of equipment acquired by the utilities to achieve the objectives specified. In addition, utilities complying with the requirements could be made eligible for an investment credit which offsets up to 100 percent of their tax liability for a 5-year period rather than a percentage which declines to 50 percent under this same period.

As indicated above, in C. Electric Generators, the committee may wish to combine its treatment of electric generators and utility rate structures. One possible arrangement might be as follows:

(1) If the electric generating equipment is oil- or gas-fired, then the investment credit would be disallowed unless the following requirements were met:

(a) the FEA certifies that it is not feasible, because of technological or legal restrictions, for the facility to use energy sources other than oil or gas, and

(b) if the taxpayer generating the electricity is a public utility or other seller of electric power, then the taxpayer operates under a rate structure that provides no volume discounts and that gives adequate recognition (at least in the case of business customers) to peak-load pricing.

(2) If the electric generating equipment is not oil- or gas-fired, then the investment credit would be at the rate of 12 percent for the next 10 years, in those cases where the taxpayer's pricing system satisfies the no-volume-discount standards and also the peak-load pricing standards.

(3) If the electric generating equipment is not oil- or gas-fired, but the taxpayer fails to satisfy any of the pricing standards, then the investment credit would be at the rate of 10 percent for the next 10 years.

#### E. INSULATION

##### *Present law*

Under present law, an investment tax credit temporarily set at 10 percent of the cost is available for certain depreciable property that has a useful life of at least three years. However, property such as insulation, storm windows and doors, etc., that is attached to or becomes a structural component of a building generally does not qualify for the credit.

*House bill*

The investment credit of present law is extended to insulation installed after March 17, 1975, and before January 1, 1978, if the costs are paid (or accrued) between those dates. The installations must be in a structure existing on March 17, 1975, and which was used on that date in a trade or business.

Qualified insulation includes regular insulation, storm (or thermal) windows and doors, and similar items (such as weatherstripping or caulking) designed specifically and primarily to reduce heat gain or loss of a building. The material installed must be first used by the taxpayer claiming the credit, have a useful life (to that taxpayer) of at least three years, and meet those performance standards that may be prescribed in Treasury regulations.

*Revenue effect of the House bill*

The House bill provision is expected to result in revenue losses of approximately \$20 million for 1975, \$25 million for 1976, and \$25 million for 1977.

*Administration proposal*

Although the administration proposed a tax credit for insulation of homes, it did not propose extending the investment credit to insulation used in business.

*Staff analysis*

This provision appears to have particular merit as a recognition of the value of insulating business and industrial structures, especially since it has not been as traditional to insulate businesses as is true in the case of residences. Yet the energy-saving effect of insulating a commercial structure is commensurate with the effect of insulating a home. Also, providing a credit for businesses benefits rental units, as well as owner-occupied houses.

If the committee wishes to provide an incentive for the use of insulation equipment for business purposes (in addition to the incentive that arises from the saving in fuel bills), then it may wish to adopt the approach of the House bill in making available the investment credit to such equipment. The committee may wish to provide that the regular investment credit would be available for 10 years, however, rather than for the three years provided by the House bill.

**F. SOLAR ENERGY EQUIPMENT***Present law*

Under present law, property which is attached to or becomes a structural component of a building generally does not qualify for the investment credit. As a result, solar energy equipment presently does not qualify for the investment credit although it is eligible for depreciation where it is business property or is used in the production of income.

*House bill*

The investment credit (now 10 percent, but scheduled to return to 7 percent in 1977) is made available for the costs (including installation) of solar energy equipment installed on business or commercial

property after March 17, 1975, and before January 1, 1981, where the equipment is used in a trade or business or as part of a facility for the production of income. To qualify for the credit, the taxpayer's cost for solar energy equipment must have been paid or incurred before January 1, 1981. Also, the equipment must be new in the hands of the taxpayer and the equipment must have a useful life of at least three years. Unlike the investment credit for insulation, this credit is available not only for solar energy equipment installed in structures already in existence on March 17, 1975, but also for installations in new structures.

The investment credit under this provision is also extended to solar energy equipment installed in business properties which furnish lodgings, such as apartments and hotels.

Solar energy equipment is defined as equipment which meets criteria established by the Secretary of the Treasury and which uses solar energy to heat or cool the building to which it is attached or to provide hot water for use within the building. The credit would not be available, however, for "back-up" equipment which provides conventional heating or cooling during periods when the solar system is unable to function because of lack of sufficient sunlight.

The House bill also contains a provision which allows the costs of solar energy equipment to be amortized over a 60-month period. (See B, Energy use property, above). However, businesses would not be permitted to claim both rapid amortization and the investment credit for the same solar energy equipment. A business could elect either the investment credit or rapid amortization, but not both.

#### *Revenue effect of House bill*

These provisions are expected to result in revenue losses of less than \$5 million per year.

#### *Administration proposal*

The administration has made no specific tax proposals concerning solar energy equipment.

#### *Staff analysis*

Solar energy has the advantage of being an inexhaustible energy source. If efficient methods can be devised for general (and relatively direct) use of solar energy, this could substantially relieve world energy problems. However, some argue that it will take several decades for this source of energy to be used broadly enough to have a substantial effect on our energy needs. They question the extent to which it is useful at this time to provide tax incentives (in addition to funds for research, development, etc., in the trust fund) to further the development of solar energy equipment.

If the committee wishes to provide an incentive for the use of solar energy equipment for business purposes (in addition to the incentive that arises from the saving in fuel bills), then it may wish to adopt the approach of the House bill in making available the investment credit for such equipment and to provide in addition, that the regular investment credit would be available for the next 10 years. Other alternatives are set forth below.

*Alternative proposals*

S. 1379, introduced by Senator Fannin, would provide tax credits for solar energy equipment installed in residences and in commercial structures. (The residential aspects will be described in a subsequent pamphlet.) Where a taxpayer purchases a new commercial building with solar equipment already installed, the credit is to be determined according to the portion of the purchase price allocable to the solar equipment. Where a taxpayer installs solar equipment in or on an existing commercial building, or purchases a new commercial building with solar equipment already installed, the credit would be limited to 12 percent of the qualifying expense if the equipment is installed between 1975 and 1979. The credit would be limited to 10 percent of the qualifying expense if the commercial equipment is installed between 1980 and 1984.

In addition to the credit, S. 1379 would also permit rapid five-year amortization of the costs of solar energy equipment on commercial buildings.

Another proposal (introduced by Senator Domenici) which was added on the Senate floor to the Tax Reduction Act of 1975, but deleted in conference, would have provided a credit for solar energy equipment expenditures for new and old residences, and for commercial buildings, of 40 percent of the first \$1,000 of expenditures and 20 percent of any excess up to \$2,000. Unused credits could be carried back to prior years and carried over to future years. This provision would have been effective for taxable years beginning after December 31, 1974, and ending before January 1, 1980.

The committee may also wish to consider providing some sort of incentive for the purchase of heat pumps either as an alternative to or an addition to any incentives for solar energy equipment.