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## **ANALYSIS OF THE CONSERVATION AND ENERGY EFFICIENCY TAX PROVISIONS IN THE ENERGY POLICY ACT OF 2005**

Culminating a six year effort, Congress passed comprehensive energy legislation – “The Energy Policy Act of 2005” (EPACT 2005) – at the end of July, 2005, and the President signed it into law on August 8, 2005 (P.L.109-58, Energy Policy Act of 2005, 119 Stat. 594, Aug. 8, 2005). This final action by the Congress marks the conclusion of a bi-partisan process that addresses a wide span of issue areas in current and future U.S. energy policy.

The \$14 billion tax title includes several significant tax incentives for conservation and energy efficiency programs. Provisions include:

- Energy efficient commercial buildings deduction,
- Credit for construction of new energy efficient homes,
- Credit for certain non-business energy property,
- Credit for energy efficient appliances,
- Credit for residential energy efficient property,
- Credit for business installation of qualified fuel cells and stationary microturbine power plants, and
- Business solar investment tax credit.

The Alliance to Save Energy estimates that all of the law’s energy-efficiency provisions will save about 2 quads a year by 2020, reducing the anticipated growth in energy use by that time by about 8 percent.

Now that the measure has been enacted into law, the focus on energy policy has shifted to the various agencies responsible for implementing these new laws. EPACT 2005 directs the agencies to conduct a significant number of studies on various sectors of the energy industry. In addition, many of the provisions are not self implementing and will require agencies to develop rules and procedures for their application. The Treasury Department is responsible for providing tax incentives for energy efficiency products, including retrofits and equipment replacements, as well as for building new efficient homes, all of which are to become available in 2006. The Energy Department must set the criteria, but Treasury must develop the regulations and guidelines for providing these credits.

It has been reported that there is widespread concern on Capitol Hill that the Administration will fail to meet many of the more than 600 deadlines the energy law specifies. On the Senate side, committee staffers are scheduling meetings with agency officials to discuss these deadlines. The concern has been amplified by the necessity of the Department of Energy’s focus on promulgating necessary regulations and criteria setting as directed by the law having been diverted by the devastation caused by recent hurricanes and the Department of Energy’s role in rebuilding the impacted energy infrastructure. Senate Energy and Natural Resources Committee Ranking Member Jeff Bingaman (D-NM) has asked the Treasury Department to make developing the regulations and guidelines for providing these energy efficiency credits a top priority, particularly in light of the necessary rebuild of the Gulf Coast area and the opportunity presented by this to build energy efficient homes. Perhaps bowing to pressure, the Energy Department announced earlier this month that, as a means of helping Americans fight skyrocketing energy prices, the agency has agreed to quickly develop the necessary regulations and guidelines required to implement the series of energy efficiency tax provisions for commercial buildings and homes that were included in EPACT 2005.

## ENERGY EFFICIENT COMMERCIAL BUILDINGS DEDUCTION (Sec. 1331)

### *SUMMMARY*

*This provision provides a new individual and corporate tax deduction to the owner of a commercial property for the expenditure of energy efficient systems such as (1) the interior lighting system, (2) the heating, cooling, ventilation and hot water systems, and (3) the building envelope. In the case of energy efficient expenditures in public buildings, the deduction is allocated to the building's planner/architect.*

**Energy Efficient Commercial Building** – Energy-efficient commercial building property expenditure is defined as property (1) which is installed on or in any building located in the United States that is within the scope of Standard 90.1-2001 of the American Society of Heating, Refrigerating, and Air Conditioning Engineers and the Illuminating Engineering Society of North America (“ASHRAE/IESNA”), (2) which is installed as part of (i) the interior lighting systems, (ii) the heating, cooling, ventilation, and hot water systems, or (iii) the building envelope, and (3) which is certified as being installed as part of a plan designed to reduce the total annual energy and power costs with respect to the interior lighting systems, heating, cooling, ventilation, and hot water systems of the building by 50 percent or more in comparison to a reference building which meets the minimum requirements of Standard 90.1-2001 (as in effect on April 2, 2003).

**Deduction** – A maximum deduction of \$1.80 per square foot of property for which expenditures are made is allowed. Certain certification requirements must be met in order to qualify for the deduction.

- **Partial Deduction** – In the case of a building that does not meet the overall building requirement of a 50 percent energy savings, a partial deduction of \$0.60 per square foot of property for which expenditures are made is allowed with respect to each separate building system that comprises energy efficient property and which is certified by a qualified professional as meeting or exceeding the applicable system-specific savings targets established by the Secretary of the Treasury. The applicable system-specific savings targets to be established by the Secretary are those that would result in a total annual energy savings, with respect to the whole building, of 50 percent, if each of the separate systems met the system specific target. The separate building systems are (1) the interior lighting system, (2) the heating, cooling, ventilation and hot water systems, and (3) the building envelope.
  - **Exception** – In the case of lighting system retrofits, (1) until such time as the Secretary issues final regulations, the system-specific energy savings target for the lighting system is deemed to be met by a reduction in Lighting Power Density of 40 percent (50 percent in the case of a warehouse) of the minimum requirements in Table 9.3.1.1 or Table 9.3.1.2 of ASHRAE/IESNA Standard 90.1-2001; (2) in the case of a lighting system that reduces lighting power density by 25 percent, a partial deduction of \$0.375 cents per square foot is allowed. A pro-rated partial deduction is allowed in the case of a lighting system that reduces lighting power density between 25 percent and 40 percent. Certain lighting level and lighting control requirements must also be met in order to qualify for the partial lighting deductions.

**Treatment and Uses of the Deduction** – Deductions are allowed in the tax year during which the property is placed in service. The taxpayer's basis in the property is reduced by the amount of the deduction allowed.

- **Allocation of Deduction for Public Property** – For energy-efficient commercial building property expenditures owned by Federal, State, or local government, including public schools, the Secretary of Treasury shall promulgate regulations that allow the deduction to be allocated to the person primarily responsible for designing the property, such as the architect, in lieu of the public entity.

***Certification*** – The Secretary of the Treasury, in consultation with the Secretary of Energy, will promulgate regulations that describe methods of calculating and verifying energy and power costs using qualified computer software based on the provisions of the 2005 California Nonresidential Alternative Calculation Method Approval Manual or, in the case of residential property, the 2005 California Residential Alternative Calculation Method Approval Manual.

***Effective Date*** – The provision is effective for property placed in service after December 31, 2005 and prior to January 1, 2008.

## **CREDIT FOR CONSTRUCTION OF NEW ENERGY EFFICIENT HOMES** (Sec. 1332)

### **SUMMMARY**

*This provision provides a new business-related credit for the construction of new energy efficient homes. It provides a \$1000 or \$2000 credit for the construction of a qualified new energy-efficient home by an eligible contractor or the purchase of a qualified new energy-efficient home from an eligible contractor for use as a residence.*

**Home Qualifications** – To qualify as an energy-efficient new home, the home must be: (1) a dwelling located in the United States, (2) substantially completed after August 8, 2005, and (3) certified in accordance with guidance prescribed by the Secretary to have a projected level of annual heating and cooling energy consumption that meets the standards for either a 30-percent or 50-percent reduction in energy usage, compared to a comparable dwelling constructed in accordance with the standards of chapter 4 of the 2003 International Energy Conservation Code as in effect (including supplements) on August 8, 2005, and any applicable Federal minimum efficiency standards for equipment.

**\$1000 Credit** – With respect to homes that meet the 30-percent standard, one-third of such 30 percent savings must come from the building envelope.<sup>1</sup> The \$1000 credit only applies to manufactured homes that meet the 30-percent standard *or* are certified by a method prescribed by the Administrator of the Environmental Protection Agency under the Energy Star Labeled Homes program, and that meet the above home qualifications.

**\$2000 Credit** – With respect to homes that meet the 50-percent standard, one-fifth of such 50 percent savings must come from the building envelope. The \$2000 credit applies to both manufactured homes and traditional homes that meet the 50-percent standard, and that meet the above home qualifications.

**Energy Savings Certification** – The Secretary of Treasury, in consultation with the Secretary of Energy, will prescribe guidance that will specify procedures and methods for calculating energy and cost savings. This certification shall be made in writing in a manner which specifies in readily verifiable fashion the energy efficient building envelope components and energy efficient heating or cooling equipment installed and their respective rated energy efficiency performance.

**Treatment and Uses of the Credit** – The credit is part of the general business credit. No credits attributable to energy efficient homes can be carried back to any taxable year ending on or before the effective date of the credit. The taxpayer's basis in the property is reduced by the amount of the credit claimed.

**Effective Date** – The credit applies to homes whose construction is substantially completed after December 31, 2005, and which are purchased after December 31, 2005 and prior to January 1, 2008.

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<sup>1</sup> Congress intended that the building envelope component means insulation materials or system specifically and primarily designed to reduce heat loss or gain, exterior windows (including skylights), doors, and any duct sealing and infiltration reduction measures.

## CREDIT FOR CERTAIN NON-BUSINESS ENERGY PROPERTY (Sec. 1333)

### *SUMMARY*

*This provision provides a nonrefundable, 10-percent personal credit for the purchase of qualified energy efficiency improvements to existing homes and a full but lifetime limited credit for qualified residential energy property expenditures, such as water boilers and air circulating fans.*

***Qualified Energy Efficiency Improvements*** – A qualified energy efficiency improvement is any energy efficiency *building envelope component* that meets or exceeds the prescriptive criteria for such a component established by the 2000 International Energy Conservation Code as supplemented and as in effect on the date of enactment (or, in the case of metal roofs with appropriate pigmented coatings, meets the Energy Star program requirements), and (1) that is installed in or on a *dwelling unit* located in the United States; (2) owned and used by the taxpayer as the taxpayer’s principal residence; (3) the original use of which commences with the taxpayer; and (4) such component reasonably can be expected to remain in use for at least five years.

- ***Definition of Building Envelope Components*** – Building envelope components are: (1) insulation materials or systems which are specifically and primarily designed to reduce the heat loss or gain for a dwelling; (2) exterior windows (including skylights) and doors; and (3) metal roofs with appropriate pigmented coatings which are specifically and primarily designed to reduce the heat loss or gain for a dwelling.
- ***Definition of Dwelling Unit*** – The term ‘dwelling unit’ includes a manufactured home which conforms to Federal Manufactured Home Construction and Safety Standards (section 3280 of title 24, Code of Federal Regulations).

***Qualified Residential Energy Property Expenditures*** – Residential energy property expenditures are allowed for property installed on or in connection with a dwelling unit located in the United States and owned and used by the taxpayer as the taxpayer’s principal residence. This includes expenditures for labor costs properly allocable to the onsite preparation, assembly, or original installation of the property.

- ***Definition of Qualified Energy Property*** – Qualified energy properties are (1) energy-efficient building property, (2) a qualified natural gas, propane, or oil furnace or hot water boiler, or (3) an advanced main air circulating fan. Energy property must meet performance and quality standards, as well as possible certification requirements, set forth in regulation by the Secretary of Treasury in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency. The provision provides a guideline for those standards.
1. ***Energy Efficient Building Property*** –
    - ***Definition of qualified energy-efficient property*** –
      - an electric heat pump water heater which yields an energy factor of at least 2.0 in the standard Department of Energy test procedure,
      - an electric heat pump which has a heating seasonal performance factor (HSPF) of at least 9, a seasonal energy efficiency ratio (SEER) of at least 15, and an energy efficiency ratio (EER) of at least 13,

- a geothermal heat pump which, (i) in the case of a closed loop product, has an energy efficiency ratio (EER) of at least 14.1 and a heating coefficient of performance (COP) of at least 3.3, (ii) in the case of an open loop product, has an energy efficiency ratio (EER) of at least 16.2 and a heating coefficient of performance (COP) of at least 3.6, and (iii) in the case of a direct expansion (DX) product, has an energy efficiency ratio (EER) of at least 15 and a heating coefficient of performance (COP) of at least 3.5,
    - a central air conditioner which has a seasonal energy efficiency ratio (SEER) of at least 15 and an energy efficiency ratio (EER) of at least 13, and
    - a natural gas, propane, or oil water heater which has an energy factor of at least 0.80.
  - *Credit* – The allowable credit for the purchase of certain property is \$300 for each item of qualified energy efficient property.
2. *Natural Gas, Propane, or Oil Furnace or Hot Water Boiler* –
- *Definition of Natural Gas, Propane, or Oil Furnace or Hot Water Boiler* – A qualified natural gas, propane, or oil furnace or hot water boiler is a natural gas, propane, or oil furnace or hot water boiler with an annual fuel utilization efficiency rate of at least 95.
  - *Credit* – The allowable credit for the purchase of certain property is \$150 for each qualified natural gas, propane, or oil furnace or hot water boiler.
3. *Advanced Main Air Circulating Fan* –
- *Definition of Advanced Main Air Circulating Fan* – An advanced main air circulating fan is a fan used in a natural gas, propane, or oil furnace originally placed in service by the taxpayer during the taxable year, and which has an annual electricity use of no more than two percent of the total annual energy use of the furnace (as determined in the standard Department of Energy test procedures).
  - *Credit* – The allowable credit for the purchase of certain property is \$50 for each advanced main air circulating fan.

***Allowance of Credit*** – Provides a 10-percent credit for the purchase of qualified energy efficiency improvements to existing homes and a full credit for qualified residential energy property expenditures. The credit may not exceed \$500 in total across all taxable years, and no more than \$200 dollars of such credit may be attributable to expenditures on windows. There is no requirement for certification of expenditures.

***Treatment and Uses of the Credit*** – The credit is a nonrefundable personal credit. The taxpayer’s basis in the property is reduced by the amount of the credit claimed.

***Effective Date*** – The credit applies to property placed in service after December 31, 2005 and prior to January 1, 2008.

**CREDIT FOR ENERGY EFFICIENT APPLIANCES**  
**(Sec. 1334)**

**SUMMARY**

*The provision provides a new business-related credit for the eligible production of certain energy-efficient dishwashers, clothes washers and refrigerators. The credit is part of the general business credit.*

***Dishwashers –***

- *Types of Energy Efficient Product* – A dishwasher is any residential dishwasher subject to the energy conservation standards established by the Department of Energy.
- *Credit* – The credit for dishwashers applies to dishwashers produced in 2006 and 2007 that meet the Energy Star standards for 2007. The credit amount equals \$3 multiplied by the percentage by which the efficiency of the 2007 standards (not yet known) exceeds that of the 2005 standards. The credit may not exceed \$100 per dishwasher.

***Clothes Washers –***

- *Types of Energy Efficient Product* – A clothes washer is any residential clothes washer (including a residential style coin operated washer) that satisfies the relevant efficiency standard.
- *Credit* – The credit for clothes washers applies to clothes washers produced in 2006 and 2007 that meet the Energy Star standards for 2007. The credit amount equals \$100.

***Refrigerators –***

- *Types of Energy Efficient Product* – A refrigerator must be an automatic defrost refrigerator-freezer with an internal volume of at least 16.5 cubic feet to qualify for the credit.
- *Credit* – The credit for refrigerators is based on energy savings and year of manufacture. The energy savings are determined relative to the energy conservation standards promulgated by the Department of Energy that took effect on July 1, 2001.
  - 15 percent savings – Refrigerators that achieve at least 15 percent energy saving and that are manufactured 2006 receive a \$75 credit.
  - 20 percent savings – Refrigerators that achieve at least 20 percent energy saving and that are manufactured 2006 or 2007 receive a \$125 credit.

***Treatment and Uses of the Credit*** – The taxpayer may not claim credits in excess of \$75 million for all taxable years, and may not claim credits in excess of \$20 million with respect to refrigerators for the 15 percent (\$75) credit. Additionally, the credit allowed in a taxable year for all appliances may not exceed two percent of the average annual gross receipts of the taxpayer for the three taxable years preceding the taxable year in which the credit is determined.

***Eligible Production*** – Appliances eligible for the credit include only those that exceed the average amount of production from the 3 prior calendar years for each category of appliance. In the case of refrigerators, eligible production is production that exceeds 110 percent of the average amount of production from the 3 prior calendar years.

***Effective Date*** – The credit applies to appliances produced after December 31, 2005 and prior to January 1, 2008.

**CREDIT FOR RESIDENTIAL ENERGY EFFICIENT PROPERTY**  
**(Sec. 1335)**

**SUMMARY**

*This provision provides a new nonrefundable personal tax credit for the purchase of qualified photovoltaic property and qualified solar water heating property. The credit is equal to 30 percent of qualifying expenditures, with a maximum credit for each of these systems of property of \$2,000. The provision also provides a 30 percent credit for the purchase of qualified fuel cell power property.*

***Photovoltaic Property –***

- *Qualified Expenditures* – Qualifying solar water heating property means an expenditure for property to heat water for use in a dwelling unit located in the United States and used as a residence if at least half of the energy used by such property for such purpose is derived from the sun.
- *Allowance of Credit* – The credit is equal to 30 percent of qualifying expenditures, with a maximum credit of \$2,000.

***Solar Water Heating Property –***

- *Qualified Expenditures* – Qualified photovoltaic property is property that uses solar energy to generate electricity for use in a dwelling unit. Property that is used in the heating swimming pools and hot tubs is ineligible.
- *Allowance of Credit* – The credit is equal to 30 percent of qualifying expenditures, with a maximum credit of \$2,000. Credit is only given if the solar water heating property is certified by the non-profit Solar Rating Certification Corporation or a comparable entity endorsed by the government of the State in which such property is installed.

***Fuel Cell Power Property –***

- *Qualified Expenditures* – A qualified fuel cell power plant is an integrated system comprised of a fuel cell stack assembly and associated balance of plant components that (1) converts a fuel into electricity using electrochemical means, (2) has an electricity-only generation efficiency of greater than 30 percent, and (3) generates at least 0.5 kilowatts of electricity. The qualified fuel cell power plant must be installed on or in connection with a dwelling unit located in the United States and used by the taxpayer as a principal residence.
- *Allowance of Credit* – The credit is equal to 30 percent of qualifying expenditures, with a maximum credit of \$500 for each 0.5 kilowatt of capacity.

***Treatment and Uses of the Credit*** – The credit is nonrefundable. The depreciable basis of the property is reduced by the amount of the credit. Expenditures for labor costs allocable to onsite preparation, assembly, or original installation of property eligible for the credit are eligible expenditures. EPACT 2205 prescribes how excess credit<sup>2</sup> may be carried forward to the succeeding taxable year and added to the credit allowable under this program for that year.

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<sup>2</sup> The business energy tax credits, when combined with all other components of the general business credit, generally may not exceed for any taxable year the excess of the taxpayer's net income tax over the greater of (1) 25 percent of so much of the net regular tax liability as exceeds \$25,000 or (2) the tentative minimum tax.

***Special Rules*** – Certain equipment safety requirements need to be met to qualify for the credit. Special proration rules apply in the case of jointly owned property, condominiums, and tenant stockholders in cooperative housing corporations. If less than 80 percent of the property is used for non-business purposes, only that portion of expenditures that is used for non-business purposes is taken into account.

***Effective Date*** – The credit applies to property placed in service after December 31, 2005 and prior to January 1, 2008.

# **CREDIT FOR BUSINESS INSTALLATION OF QUALIFIED FUEL CELLS AND STATIONARY MICROTURBINE POWER PLANTS**

**(Sec. 1336)**

## **SUMMARY**

*This provision expands an existing business energy investment credit to permit a 30 percent business energy credit for the purchase of qualified fuel cell power plants for businesses and a 10 percent credit for the purchase of qualifying stationary microturbine power plants.*

### ***Qualified Fuel Cell Property –***

- *Definition* – An integrated system composed of a fuel cell stack assembly and associated balance of plant components that (1) converts a fuel into electricity using electrochemical means, (2) has an electricity-only generation efficiency of greater than 30 percent, and (3) generates at least 0.5 kilowatts of electricity.
- *Energy Percentage and Credit* – 30 percent business energy credit for the purchase of qualified fuel cell power plants for businesses. The credit for any fuel cell may not exceed \$500 for each 0.5 kilowatts of capacity.

### ***Qualified Microturbine Property –***

- *Definition* – An integrated system comprised of a gas turbine engine, a combustor, a recuperator or regenerator, a generator or alternator, and associated balance of plant components that converts a fuel into electricity and thermal energy. Such system also includes all secondary components located between the existing infrastructure for fuel delivery and the existing infrastructure for power distribution, including equipment and controls for meeting relevant power standards, such as voltage, frequency and power factors. Such system must have an electricity-only generation efficiency of not less than 26 percent at International Standard Organization conditions and a capacity of less than 2,000 kilowatts.
- *Energy Percentage and Credit* – 10 percent business energy credit for the purchase of qualified fuel cell power plants for businesses. The credit may not exceed \$200 for each kilowatt of capacity

***Treatment and Uses of the Credit*** – The credit is nonrefundable. The taxpayer's basis in the property is reduced by the amount of the credit claimed. For purposes of the fuel cell and microturbine credits, and only in the case of telecommunications companies, the present-law section 48 restriction, which would prevent telecommunication companies from claiming the new credit due to their status as public utilities, are removed.

***Effective Date*** – The credit applies to periods after December 31, 2005 and before January 1, 2008, for property placed in service in taxable years ending after December 31, 2005, under rules similar to rules of section 48(m) of the Internal Revenue Code of 1986 (as in effect on the day before the date of enactment of the Revenue Reconciliation Act of 1990).

**BUSINESS SOLAR INVESTMENT TAX CREDIT**  
**(Sec. 1337)**

**SUMMARY**

*This provision expands a current business energy credit that allows for the cost of new property that has equipment that (1) uses solar energy to generate electricity, to heat or cool a structure, or to provide solar process heat, or (2) is used to produce, distribute, or use energy derived from a geothermal deposit, but only, in the case of electricity generated by geothermal power, up to the electric transmission stage. The provision increases the 10-percent credit to 30 percent in the case of solar energy property.*

***Solar Energy Property*** – Increases the 10-percent credit to 30 percent in the case of solar energy property.

***Hybrid Solar Energy Lighting Systems*** – Equipment that uses fiber-optic distributed sunlight to illuminate the inside of a structure is solar energy property eligible for the 30-percent credit.

***Limitation*** – Makes permanent the limitation that property used to generate energy for the purposes of heating a swimming pool is not eligible solar energy property.

***Treatment and Uses of the Credit*** – This is a nonrefundable business energy credit.

***Effective Date*** – The provision with respect to the heating of swimming pools applies to periods after December 31, 2005. The increase in the credit rate and the provision related to fiber-optic distributed sunlight applies to periods after December 31, 2005 and before January 1, 2008 for property placed in service in taxable years ending after December 31, 2005, under rules similar to rules of section 48(m) of the Internal Revenue Code of 1986 (as in effect on the day before the date of enactment of the Revenue Reconciliation Act of 1990).