Tax Incentive Opportunities for Alternative Energy and Energy Efficiency

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White Paper

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On Feb 17, 2009, President Obama signed The American Recovery and Reinvestment Act of 2009 (ARRA 2009). This stimulus bill provides new tax incentives for a number of renewable energy and energy efficiency measures. This update to the Energy Policy Act of 2005 incentivizes American homeowners and businesses by providing:

- Tax credits[1] for residential and commercial photovoltaics, solar water heating systems, geothermal heat pumps, and other renewable technologies.
- Tax credits for homeowners for energy efficiency improvements to existing homes.
- Tax credits for builders of highly efficient new homes.
- Tax deductions[1] for owners or designers of highly efficient commercial buildings.

Residential Solar and Renewables

New Homes & Existing Homes

For new and existing homes, the tax credit limitation has been removed for many renewable systems including geothermal heat pumps, solar water heaters, solar photovoltaics, small wind energy, fuel cells and microturbine systems. Qualified products receive a federal tax credit equal to 30% of their cost. These systems must be placed in service between Jan 1, 2009 and Dec 31, 2016. Some examples of qualified products are:

- **Solar water heating systems** property certified by the Solar Rating and Certification Corporation (SRCC) which provide at least 50% of the system demand.
- **Photovoltaic systems** which provide electric power for the residence.
- **Wind energy systems** which provide 100 kW or less electric power to the residence.
- **Geothermal heat pumps** which satisfy the ENERGY STAR criteria.
- **Fuel cells** with a capacity ≥ 0.5 kW and efficiency ≥ 30%.
- **Microturbines** with a maximum capacity of 2,000 kW and a minimum efficiency of 26%.

Residential Energy Efficiency

Existing Homes

For homeowners wishing to make their current residence more energy efficient, the ARRA 2009 helps make that possible. The tax credit is limited to $1,500 for the combined energy efficiency improvements. Qualified products receive a federal tax credit of 30% of their cost, up to the $1,500 limit. These systems must be placed in service between January 1, 2009 and Dec 31, 2010. Some examples of qualified products are:

- **Insulation material** which meets 2009 IEEC and amendments.
- **Exterior windows** with SHGC ≤ 0.30 and U-factor ≤ 0.30.
- **Exterior doors** with SHGC ≤ 0.30 and U-factor ≤ 0.30.
- **Metal roofing** having pigmented coatings specifically designed to reduce heat gain and meets ENERGY STAR.
- **Air source heat pumps**:
  - Split systems with a SEER ≥ 15 and EER ≥ 12.5.
  - Package systems with a SEER ≥ 14 and EER ≥ 12.
- **Furnaces** using natural gas or propane with an AFUE ≥ 95.
- **Geothermal heat pumps** (Not subject to $1,500 cap):
  - Closed loop products with EER ≥ 14.1 and COP ≥ 3.3.
  - Open loop products with EER ≥ 16.2 and COP ≥ 3.6.
  - Direct expansion systems with EER ≥ 15 and COP ≥ 3.5.
- **Hot water boiler** with natural gas, propane, or oil furnace and AFUE ≥ 90%.
- **Advanced main air circulating fan** used in natural gas, propane, or oil furnace that uses no more than 2% of the total annual energy use of the furnace.
- **Water heater** using natural gas, propane, or oil with EF ≥ 0.82 or a thermal efficiency ≥ 90%.
- **Water heater** using an electric heat pump with EF of 2.0 or greater.
- **Biomass stoves** with efficiency rating of at least 75% and used to heat a home or heat water.

Home Builders

This provision offers homebuilders a tax credit of $2,000 for homes that reduce energy use for heating and cooling by 50% compared to the 2004 International Energy Conservation Code (IECC) and supplements. Of the 50% reduction, one-fifth must come from building envelope improvements.

Producers of manufactured homes can qualify for a tax credit of $1,000 for homes that save 30% on heating and cooling compared to the 2004 IECC. Of the 30% reduction, one-third must come from building envelope improvements.

Eligible homes must demonstrate savings by using software approved by the IRS and the Residential Energy Services Network (RESNET). A third-party RESNET accredited inspector must certify the home. The incentives apply to homes that are acquired from an eligible contractor for use as a residence by December 31, 2009.

Commercial Buildings

Owners or tenants (or designers, in the case of publicly owned buildings) of new or existing commercial buildings may qualify for a tax deduction of up to $1.80 per square foot. The buildings must be constructed or reconstructed to save at least 50% of the heating, cooling, water heating, and interior lighting energy cost of a building that meets ASHRAE Standard 90.1-2001.

Each of the three energy-using systems of the building — the envelope[2], interior lighting system, and heating and cooling system — is eligible for one third of the incentive ($0.60/ft2) if it meets its share of the whole-building savings goal.

Software meeting the Internal Revenue Service's requirements for accuracy and consistency determines projected energy savings. Third party inspectors review the plans and verify building parameters to determine compliance. The incentives apply to buildings or systems placed in service or remodeled between January 1, 2006 and December 31, 2013

For more information, visit the Commercial Building Tax Deduction Coalition website: *www.efficientbuildings.org*.

Renewables for Businesses

The business investment tax credit varies from 10% to 30% depending upon they type of system installed. This tax credit is available to businesses that purchase solar water heaters, solar photovoltaics, small wind energy, geothermal heat pumps, fuel cells and microturbine systems placed into service between Jan 1, 2009 and Dec 31, 2016. This business investment tax credit has no maximum cap. ARRA allows a business to receive a federal grant for renewable energy property but this offer may not be combined with the investment tax credit.

Combined Incentives

In many cases, multiple tax incentives may be claimed. In the case of a new home for example, the builder may claim credit for the high efficiency home and the homeowner may claim tax credits for solar hot water, photovoltaic, and fuel cell systems. Other financial incentives, such as local utility rebates, further reduce the cost of building or owning a solar and energy efficient home. For example, in Georgia, Georgia Power offers financial incentives to builders of ENERGY STAR® certified new homes. To learn more about state incentives for renewable energy, visit: *www.dsireusa.org*.

Resources

Florida Solar Energy Center
www.fsec.ucf.edu

Residential Energy Services Network (RESNET)
www.natresnet.org

Southeast Energy Efficiency Alliance
www.seea.us

Tax Incentives Assistance Project (TIAP)
www.energytaxincentives.org

Internal Revenue Service (IRS)
www.irs.gov

The American Recovery and Reinvestment Act of 2009 (ARRA)
www.recovery.gov

Chart from ENERGY STAR website

available at:
www.energystar.gov/index.cfm?c=products.pr_tax_credits

Footnotes

1 Tax deductions are subtracted from income before total tax liability is computed. Tax credits are subtracted directly from the total tax liability. A credit is three or more times more advantageous to the taxpayer than a deduction. For example a tax credit of $1,000 for someone in the 28% tax bracket is equivalent to a tax deduction of $3,571.

2 The building envelope separates conditioned space from unconditioned (or outside) and consists of an air barrier and insulation that must be continuous and touching. Another way is to think of the building envelope as the balloon that keeps the living space separate from outside.