

**CLEAN ENERGY FINANCE GUIDE, THIRD EDITION**

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## Chapter 4.

# Federal Tax Issues Related to Energy Efficiency and Renewable Energy Projects

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Financing programs that provide funds to individuals or organizations for the purchase of renewable energy (RE) property<sup>1</sup> or energy efficiency (EE) property may qualify for a variety of federal or state tax incentives (benefits). The benefits can take the form of federal production credits, federal investment tax credits, or grants in lieu of tax credits. Those incentives are distinct from the direct subsidies or rebates often provided by utilities, states, or local entities for RE or EE efforts. In some cases, both EE and RE projects may also qualify for tax-favored financing, such as tax credit bonds, direct subsidy bonds, or tax-exempt bond financing. Chapter 2 describes bonding instruments.

The types of benefits available depend on several factors, including the identity of the eventual owner of the equipment (e.g., homeowner, corporate entity, or public body), the type of technology being installed, and the timing of the project development or equipment installation.

**A. Commercial Tax Benefits**

Unlike direct equipment rebates, mechanisms such as tax-favored financing tools, energy tax credits, or grants in lieu of credits typically require that the claimant of the benefit be a taxable business entity. Both the renewable electricity production tax credits in section 45 and investment tax credits in section 48 of the Internal Revenue Service (IRS) Code (the Code) are a subset of the general business credits (benefits) listed in section 38 of the Code. Individual taxpayers and nontaxable entities are not eligible for these benefits.

***The Production Tax Credit***

Renewable electricity Production Tax Credits (PTCs) in section 45 of the Code are available for the domestic production and sale of electricity from qualified sources and are equal to either \$0.022/kWh (\$0.015 adjusted for inflation each year; \$0.022/kWh is the current value), or half that amount for certain types of power-producing systems during their first 10 years of operation. For example, electricity generated from utility scale wind, geothermal, and closed-loop biomass systems qualify for the full credit of \$0.022/kWh (in 2010). However, electricity generated from open loop biomass, small irrigation power, landfill gas, trash combustion, hydropower, and hydrokinetic energy qualifies for a credit equal to half that amount.

***The Investment Tax Credit***

The Investment Tax Credit (ITC) in section 45 of the Code is also available for EE/RE improvements. It is equal to 30% of the value of the capitalized basis costs to develop, design, build, and install systems that—

1. Use solar energy to generate electricity, or to heat, cool, (or provide hot water for use in) a structure (building), although heating swimming pool water does not qualify,
2. Consist of fuel cell property with nameplate capacity of at least 0.5 kW and an electricity-only efficiency of at least 30% (up to \$1,500 per 0.05 kW of capacity),

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<sup>1</sup> “Property” in this context means energy-saving (or renewable energy-producing) equipment, systems, or products.

3. Consist of small wind property with a nameplate capacity of 100 kW or less, or
4. Use fiber optic distributed sunlight to illuminate the inside of a structure.

Also available is an ITC equal to 10% of the value of the capitalized basis costs to develop, design, build, and install systems for the following types of energy property: (1) geothermal electric systems, (2) micro-turbines (stationary plant of less than 2 MW with an electricity-only efficiency of 26%), (3) combined heat and power systems, and (4) geothermal heat pumps.

The date by which each system must be placed in service varies by type of credit and the fuel source/technology involved. Details are presented in Table 4.1 at the end of this chapter. Under recent rule changes, taxpayers may claim the ITC in lieu of the PTC for nearly all technologies and project types, as shown in Table 4.1.

### **1603 Grant**

For nearly all technologies and project types that qualify under either the PTC or the ITC, section 1603 of the American Recovery and Reinvestment Act of 2009 (ARRA) provides funding to reimburse applicants for a portion (either 10% or 30%) of the cost of eligible property under the Code. Recipients of the 1603 Grant may not claim the PTC or the ITC on the same property for which they are claiming the 1603 Grant. Applicants must apply for the 1603 Grant before October 1, 2011; and either the energy property must be placed in service by the end of 2010, or the project must begin construction by December 31, 2010. The U.S. Treasury is committed to issuing funds within 60 days of whichever occurs later—the submission date of a complete application **or** the date the system is placed in service.

Under federal tax law, if a developer of renewable energy equipment leases the equipment to a governmental entity or a tax-exempt organization (considered “Ineligible Entities”), the developer may not claim the ITC because the property is considered “tax-exempt use property.” In addition, accelerated depreciation cannot be claimed on the property in such a case. However, under the 1603 Grant program, if an energy property owner is otherwise eligible, leasing the property to an Ineligible Entity will not impact the owner’s eligibility for the ITC as long as the lease is considered a “true lease” under IRS guidelines (the IRS has issued a list of factors to consider in that evaluation).

### **Energy Efficiency Commercial Building Deduction**

A commercial income tax deduction is available for new or renovated buildings when energy costs are reduced by at least 50% due to improvements in lighting systems, in the building envelope, and in heating, cooling, and water heating equipment. A unique feature of this deduction is that it may be passed along to a system “designer” that is designated by the building owner if the building is publicly owned. This enables public entities to partner with private taxpayer “designers” to lower the net costs of implementing energy-efficient investments. To qualify, the completed project must meet ASHRAE 90.1-2001 standards (the cost savings are determined using approved computer modeling software) and must be placed in service by December 31, 2013. The project must also be certified as meeting the energy cost savings goal, using approved modeling software.

### **Accelerated Depreciation for Onsite Generation Equipment**

Under the Federal Modified Accelerated Cost-Recovery System (MACRS), businesses may recover investments in certain energy property through accelerated depreciation deductions. MACRS establishes “class lives” for various types of property, and a number of renewable energy properties (systems) are classed as 5-year properties. They include solar-electric and solar thermal property, wind property, geothermal property, combined heat and power equipment, fuel cells, and microturbines. If the property is leased to an Ineligible Entity, however, it is subject to an alternative (longer) depreciation schedule.

## B. Residential Tax Benefits

A number of federal tax benefits are available for individual taxpayers installing EE and RE equipment in their homes. Individual taxpayers purchasing or installing home envelope or home heating/cooling equipment may qualify for a tax credit equal to 30% of the cost of eligible equipment up to a \$1,500 tax credit per home.

- Eligible home envelope technologies include insulation or sealing, replacement windows, skylights or external doors, and qualifying window films or roofs.
- Eligible home heating and cooling investments include high-efficiency furnaces and boilers (annual fuel use efficiency ratings of 95 for gas and propane furnaces and 90 for gas, oil, or propane boilers); high-efficiency air conditioners and heat pumps (meeting the highest tier set by the Consortium for Energy Efficiency as of January 1, 2009); ground source or geothermal heat pumps; biomass stoves with a thermal efficiency of 75% or more that are used to heat a dwelling unit or water for use therein; high-efficiency fans for heating and cooling systems; and high-efficiency gas or propane water heaters.

In addition, individual taxpayers may qualify for onsite renewable energy tax credits for solar energy systems (either solar hot water or solar photovoltaic), small wind systems (up to 100 kW of nameplate capacity), and geothermal heat pumps. The credit is equal to 30% of the cost of the system (including both equipment and labor/installation costs) for systems placed in service before December 31, 2016. Manufacturers of the property must provide a certification to the taxpayer that the equipment is eligible for the credit.

## C. Interaction of State and Federal Incentives

Because the amount of the 1603 Grant and the ITC is based on the tax basis of the energy equipment, if the owner receives a rebate or other similar direct subsidy (other than low-interest or discounted loans), such payment will result in one of the following tax consequences:

1. The owner/recipient of the payment will be required to treat the payment as income that may result in additional income tax liability, or
2. The cost basis of the property will be reduced by the amount of the rebate, reducing the value of the federal tax benefits. Similarly, if both a state and a federal income tax benefit are claimed on the same property, the cost basis of the state credit is also typically reduced (note that this can vary by state).

## D. Interaction of Stimulus Funds and Federal Tax Benefits

As described above, if stimulus funds are used to provide cash rebates or direct subsidies to residential or commercial customers, the federal tax benefits available for those projects may be reduced. However, if ARRA funds are loaned to recipients (even at low- or zero-interest), there would be no reduction in the benefits available to the taxpayers. That possible impact on benefits needs to be evaluated against the other obvious advantages of rebates or direct subsidies. Additionally, if grants or rebates are provided to businesses claiming the business tax credits or accelerated depreciation, the impact of the grants or rebates may be partially offset by the accelerated depreciation benefits. For example, if a taxpayer treats a \$10,000 grant as income and claims \$10,000 in accelerated depreciation benefits in the same year, the grant might not result in additional tax liability.

**Table 4.1 Summary of Federal Renewable Energy Tax Incentives**

| <b>Eligible Property<br/>(energy equipment)</b> | <b>ITC or 1603 Grant Rate<br/>(% of installed cost)</b> | <b>PTC Rate<br/>(per kWh)</b> | <b>Credit Expiration</b>                    |
|---|---|-------------------------------|---|
| Qualified Fuel Cell                             | 30% (ITC or Grant)                                      | NA                            | 12/31/16                                    |
| Solar (Electricity and Fiber Optic)             | 30% (ITC or Grant)                                      | NA                            | 12/31/16                                    |
| Small Wind System                               | 30% (ITC or Grant)                                      | NA                            | 12/31/16                                    |
| Wind System                                     | 30% (ITC election/Grant)                                | 2.2¢                          | 12/31/12                                    |
| Open Loop Biomass                               | 30% (ITC election/Grant)                                | 1.1¢                          | 12/31/13                                    |
| Closed Loop Biomass                             | 30% (ITC election/Grant)                                | 2.2¢                          | 12/31/13                                    |
| Geothermal Electric                             | 10% ITC or 30% ITC Election/Grant                       | 2.2¢                          | 12/31/16 ITC or 12/31/13 PTC/election/Grant |
| Qualified Microturbine                          | 10% (ITC or Grant)                                      | NA                            | 12/31/16                                    |
| Combined Heat & Power Systems                   | 10% (ITC or Grant)                                      | NA                            | 12/31/16                                    |
| Geothermal Heat Pump Systems                    | 10% (ITC or Grant)                                      | NA                            | 12/31/16                                    |
| Municipal Solid Waste (Trash/Landfill Gas)      | 30% (ITC election/Grant)                                | 1.1¢                          | 12/31/13                                    |
| Hydropower                                      | 30% (ITC election/Grant)                                | 1.1¢                          | 12/31/13                                    |
| Marine & Hydrokinetic                           | 30% (ITC election/Grant)                                | 1.1¢                          | 12/31/13                                    |

Note: In the table above, the term “Grant” refers to the 1603 Grant.

## E. Resources

DSIRE: Database of State Incentives for Renewables and Efficiency (Federal Incentives)

<http://dsireusa.org/incentives/index.cfm?state=us&re=1&EE=1>

Tax Incentives Assistance Project: <http://energytaxincentives.org>

1603 Grant Program: [www.treas.gov/recovery/1603.SHTML](http://www.treas.gov/recovery/1603.SHTML)

Sections 45, 48, 168, and 179D of the Internal Revenue Service (IRS) Code

IRS forms 5695 (residential energy efficiency property), 8908 (new homes), 8910 (vehicle incentives), 3468 (commercial renewable energy investment credit)

IRS “True Lease” Guidelines: *See* Rev. Proc. 2001-28, 2001-1 C.B. 1156

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