



October 7, 2016

# The Energy Credit: An Investment Tax Credit for Renewable Energy

Internal Revenue Code (IRC) Section 48 provides an investment tax credit (ITC) for certain energy-related investments. The incentive was enacted in 1978 and has been substantially modified over time. Under current law, the ITC for most non-solar technologies will expire at the end of 2016. There is a permanent 10% ITC for solar and geothermal technologies. Increased credit rates for solar are available through 2021.

## Current Law

Certain investments in renewable energy property qualify for an ITC. The amount of the credit is determined as a percentage of the taxpayer's basis in eligible property (generally, the cost of acquiring or constructing eligible property). The tax credit rate and other credit parameters depend on the type of property or technology for which the credit is being claimed. Current law for the energy credit is summarized in **Figure 1**.

Solar energy, historically the primary technology for which the ITC has been claimed, has a permanent 10% ITC. Temporarily, the credit rate for solar is 30% through 2019, 26% in 2020, and 22% in 2021, before reverting to 10% after 2021. The expiration dates for the increased ITC for solar are commence construction deadlines. Thus, solar property that is under construction by the end of 2019 may qualify for the 30% tax credit, even if the property is not placed in service (or ready for use) until a later date. The ITC for solar is reduced to 10% for property not placed in service before January 1, 2024.

**Figure 1. Energy Credit: Summary of Current Law**

Eligible Technology	Credit Rate	Expiration Date (end of year)	Type of Expiration
Solar	30%	2019	Begin Construction
Solar	26%	2020	Begin Construction
Solar	22%	2021	Begin Construction
Solar	10%	Permanent	-
<i>Note: Credit for solar reduced to 10% for property not placed in service by December 31, 2023.</i>			
Geothermal Energy	10%	Permanent	-
Microturbines	10%	2016	Placed in Service
Fuel Cell Property	30%	2016	Placed in Service
Combined Heat and Power	10%	2016	Placed in Service
Geothermal Heat Pump	10%	2016	Placed in Service
Small Wind	30%	2016	Placed in Service
<i>Note: Wind property may be eligible for the Section 45 production tax credit (PTC), and elect to receive the ITC in lieu of PTC through 2019. This is a start of construction deadline. The credit amount is reduced by 20% for construction starting in 2017, reduced by 40% for construction starting in 2018, and 60% for construction starting in 2019.</i>			

**Source:** Internal Revenue Code.

Other property that is placed in service by the end of 2016 may be eligible for the ITC. Investments in small wind property (a wind turbine with 100 kilowatts of capacity or less) may qualify for a 30% ITC, as can investments in fuel cell power plants. The credit for fuel cells is limited to \$1,500 per 0.5 kilowatts in capacity. Investments in microturbines, combined heat and power (CHP) systems, and geothermal heat pumps qualify for a 10% ITC.

The ITC for investments in geothermal energy property is permanent under current law. The credit rate for geothermal is 10%. Geothermal energy property may also qualify for the renewable energy production tax credit (PTC) under IRC Section 45. For more on the PTC, see CRS Report R43453, *The Renewable Electricity Production Tax Credit: In Brief*, by Molly F. Sherlock.

## Legislative History

Special tax credits for energy, in some form, have been part of the tax code since the late 1970s.

### The Early Years

The energy tax credit was first enacted as part of the Energy Tax Act of 1978 (P.L. 95-618), which created a temporary 10% tax credit for business energy property and equipment using energy resources other than oil or natural gas. Tax credits for solar and wind energy property were refundable (credits could be received as a payment if the taxpayer did not have tax liability to offset), with non-refundable credits available for a wide range of other qualifying technologies and property. The rationale behind the credits was to reduce U.S. consumption of oil and natural gas by encouraging the commercialization of broader range of energy technologies and resources. Generally, the energy credits were scheduled to expire December 31, 1982.

The Windfall Profit Tax Act of 1980 (P.L. 96-223) substantially expanded the energy credit to further the objective of developing an abundant range of energy resources and promoting investment in energy conservation. Tax credits for solar and wind investments were extended for three years, through 1985. Additionally, the credit rate for solar and wind was increased to 15%, and the credit was made non-refundable. The tax credit for geothermal was also increased from 10% to 15% and ocean thermal equipment was added as qualifying property. The 10% credit for biomass was also extended for three years, through 1985. The definition of biomass included materials such as municipal solid waste. The act also provided an 11% credit for small-scale hydroelectric generating property, through 1985. A 10% credit was provided for cogeneration property (property that produces heat or other useful energy in addition to electricity, for example)

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through 1982. The act also made a number of other changes to the business energy investment credit. The changes noted here are those most closely related to the current energy credit.

When enacting the Tax Reform Act of 1986 (TRA86; P.L. 99-514), Congress believed it desirable to maintain tax credits for renewable energy property to continue stimulating technological development and the use of renewable energy sources. While there was not support for a broad extension of the energy credit (investment credits generally were repealed or allowed to expire in TRA86), investment tax credits for solar and geothermal energy were extended, but phased down to 10% before being set to expire December 31, 1988. The credit for biomass was also extended, but reduced to 10% in 1987, when it was set to expire. The credit for ocean thermal property was extended at 15% through 1988. The credit for wind was not extended. The energy credit for many other types of property had expired at the end of 1982, as scheduled.

There were a number of short-term extensions to the energy credit in the late 1980s and early 1990s. The Miscellaneous Revenue Act of 1988 (P.L. 100-647) extended the solar, geothermal, and ocean thermal investment credits at their 1988 rates. The Omnibus Budget Reconciliation Act of 1989 (P.L. 101-239) again extended the credits for solar, geothermal, and ocean thermal equipment. The Omnibus Budget Reconciliation Act of 1990 (P.L. 101-508) extended the tax credits for solar and geothermal, as did the Tax Extension Act of 1991 (P.L. 102-227).

The Energy Policy Act of 1992 (P.L. 102-486) made the credits for solar and geothermal permanent. After P.L. 102-486, the only tax credits remaining from the Energy Tax Act of 1978 (P.L. 95-618) were the newly permanent 10% solar and geothermal credits.

### Evolution of the Current Credit

The Energy Policy Act of 2005 (EPACT05; P.L. 109-58) increased the solar ITC from 10% to 30% for 2006 and 2007. The legislation also provided that fiber-optic distributed sunlight property was eligible for the tax credit, while solar property used to heat a swimming pool was not. EPACT05 also provided a 30% ITC for fuel cell power plants and a 10% ITC for stationary microturbine power plants that were placed in service during 2006 or 2007. The temporary components of the ITC and EPACT05 credit rates were extended through 2008 in the Tax Relief and Health Care Act of 2006 (P.L. 109-432).

The Emergency Economic Stabilization Act of 2008 (P.L. 110-343) substantially expanded and provided a long-term extension of the temporary components of the energy credit. The credits were extended to promote the continued development of alternative energy resources. Specifically, the EPACT05 credits for solar, fuel cells, and microturbines were extended for eight years, through December 31, 2016. The legislation also provided a 10% credit for geothermal heat pump property, and 30% credit for qualified small wind energy property, and a 10% credit for combined heat and power (CHP) property. A placed-in-service deadline of December 31, 2016, was included for geothermal heat

pump, small wind, and CHP property. The purpose of the tax credit for CHP was to encourage more efficient use of fossil fuel power generation.

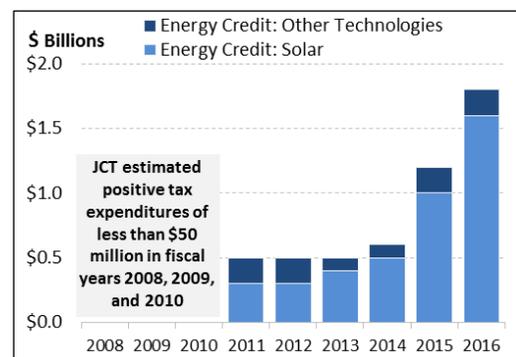
The energy credit next extended in 2015, as part of the Consolidated Appropriations Act, 2016 (P.L. 114-113). (The credit was modified as part of the American Recovery and Reinvestment Act (ARRA; P.L. 111-5), with certain limitations and restrictions relaxed. Changes in credit rates and expiration dates were not part of the ARRA modifications.) Specifically, in P.L. 114-113, the 30% credit rate for solar electric or heating property (but not fiber-optic solar) was extended through 2019. Further, the termination date was changed from a placed-in-service deadline to a construction start date. The credit was set at 26% for property beginning construction in 2020, and 22% for property beginning construction in 2021. To qualify for a rate in excess of 10%, property must be placed in service by December 31, 2023.

### Cost of the Credit

For much of its history, there was little cost associated with the energy credit. From the credit's inception in 1978, through 2007, the Joint Committee on Taxation (JCT) estimated that tax expenditures—or forgone revenue—associated with the energy credit was generally *de minimis* (less than \$50 million per year). There were three exceptions, fiscal years (FYs) 1997, 1998, and 2007, when the tax expenditure estimate for the credit was \$0.1 billion.

Starting in FY2008, JCT provided energy credit tax expenditure estimates by type of qualifying technology (see **Figure 2**). The estimated cost of the energy credit, or estimates of forgone revenue, have increased in recent years. The majority of the cost is for solar credits.

**Figure 2. Tax Expenditures for the Energy Credit**  
FY2008 – FY2016



Source: Joint Committee on Taxation.

The JCT estimated that the changes to the energy credit enacted in P.L. 114-113, the extension of the 30% rate for solar and changing the credit deadline to a construction start date, will cost \$5.0 billion between FY2016 and FY2025. This cost is in addition to tax expenditures that would have been provided under the 10% permanent tax credit for solar and geothermal that was previously current law.

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