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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 nonsolar technologies will expire at the end of 2021. 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 **Table 1**.

Table 1. Energy Credit: Summary of Current Law

Eligible Technology	Credit Rate	Expiration Date (End of Year)
Solar, Fiber Optic Solar, Fuel Cells, Small Wind	30%	2019
	26%	2020
	22%	2021
Microturbines, Combined Heat and Power, Geothermal Heat Pump	10%	2021
Solar, Geothermal Energy	10%	Permanent

Notes: Credit expiration dates are start-of-construction deadlines. For nonpermanent credits, property generally must be placed in service by December 31, 2023. 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.

Solar energy has a permanent 10% ITC. Temporarily, the credit rate for solar is 30% through 2019, before being reduced to 26% in 2020 and 22% in 2021. Investments in small wind property (a wind turbine with 100 kilowatts of capacity or less) may qualify for a 30% ITC through 2019, with the credit rate reduced to 26% in 2020 and 22% in 2021. Investments in fuel cell power plants and fiber optic solar may qualify for the ITC at these same rates. 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 expiration dates for the ITC are commence construction deadlines. For example, 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. However, if property is placed in service after December 31, 2023, no credit is allowed, except for solar, where the credit is reduced to 10%.

The ITC for geothermal energy property is permanent. 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.

Legislative History

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

The Early Years

The energy tax credit was first enacted in 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 nonrefundable 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 a 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 energy property 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 nonrefundable. 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 co-generation property (e.g., property that produces heat or other useful energy in addition to electricity) 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 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 property 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, a 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 credit was modified as part of the American Recovery and Reinvestment Act (ARRA; P.L. 111-5) in 2009, with certain limitations and restrictions relaxed. Changes in credit rates and expiration dates were not part of the ARRA modifications.

In 2015, the Consolidated Appropriations Act, 2016 (P.L. 114-113) further extended the credit. 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.

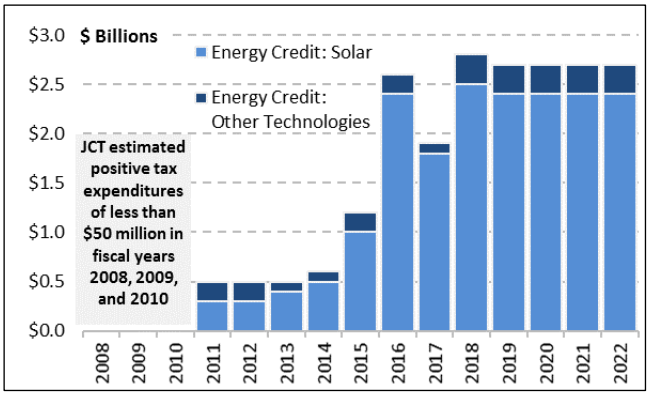
Legislation in 2018, the Bipartisan Budget Act of 2018 (P.L. 115-123) extended the ITC for five years for fiber-optic solar, fuels cell, small wind, microturbine, CHP, and geothermal heat pump property. For property eligible for a 30% credit through 2019, the credit rate is reduced following the reduction schedule for solar enacted in P.L. 114-113. All termination dates were changed to construction start deadlines.

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 1**). Energy credit tax expenditure estimates have increased in recent years. The majority of the cost is for solar credits.

Figure 1. Tax Expenditures for the Energy Credit
FY2008–FY2022



Source: Joint Committee on Taxation.

For 2018, the JCT estimated energy credit tax expenditures to be $2.8 billion, with the majority of tax expenditures ($2.5 billion) attributable to solar. Between 2018 and 2022, the JCT has estimated energy credit tax expenditures to be $13.5 billion, with $12.5 billion for solar.

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