

Chapter 1

Federal Tax Credits and Incentives for Renewable Energy Investments*

By Jonathan B. Wilson**

The Energy Policy Act of 2005¹ created a series of tax credits and other policy changes aimed at encouraging the development of renewable energy technologies and the formation of capital aimed at building new energy-producing infrastructure. Following the credit crisis and global recession of 2008, the public appetite for government intervention to promote job creation and new investment paved the way for the expansion and extension of many of the policy shifts begun in 2005 through the American Recovery and Reinvestment Act of 2009 (the ARRA or Act).²

The ARRA includes an estimated \$787 billion in tax incentives and new federal spending, with more than \$43 billion in funding devoted to energy. The Act's energy-related appropriations range from government loans and grants for developing technologies in the areas of carbon capture, alternative fuel vehicles, and transmission grid modernization, to funds allocated to public agencies and nonprofit organizations for facility retrofits that improve energy efficiency, to funding for renewable energy research, development, and deployment activities, and more. The Act also includes significant energy-related tax incentives, including a number of incentives that modify or expand incentives provided by the Energy Improvements and Extensions Act of 2008 (EIEA).

The ARRA appropriates \$4.5 billion to the Department of Energy's (DOE) Office of Electricity Delivery and Energy Reliability (OEDER) to be used for "electric-

* Originally published in *Infrastructure*, vol. 49, no. 2 (Winter, 2010).

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1. Energy Policy Act of 2005, Pub. L. No. 109-58 (Aug. 8, 2005).

2. Discussion of the American Reinvestment and Recovery Act of 2009, Pub. L. No. 111-5, also includes discussion of the American Recovery and Reinvestment Tax Act of 2009 (ARRTA).

ity delivery and energy reliability activities to modernize the electric grid,” including implementation of “Smart Grid” programs created in the Energy Independence and Security Act of 2007 (EISA). Accordingly, some of the \$4.5 billion will be made available for the Smart Grid Investment Matching Grant Program to reimburse investors for the cost of certain qualifying Smart Grid investments. The ARRA increases the eligible percentage of federal matching funds for such investments from 20 to 50 percent. The Act also provides financial support for Smart Grid technology research, development, and demonstration projects, and requires the establishment of a Smart Grid information clearinghouse.

The ARRA allocates \$16.8 billion to DOE’s Office of Energy Efficiency and Renewable Energy (EERE) to distribute to a variety of programs, including \$3.2 billion for energy efficiency and conservation block grants; \$5 billion for the Weatherization Assistance Program; \$3.1 billion for the State Energy Program; and \$2 billion for grants to manufacturers of advanced batteries and components.

The Act allocates \$6 billion in new funds to support DOE’s Innovative Technology Loan Guarantee Program. The program originally was established under the Energy Policy Act of 2005 and was intended to support early-stage clean energy technologies. The ARRA expands the type of projects that are eligible for loan guarantees under the program to include investments in renewable energy systems that generate electricity or thermal energy, including technologies such as wind, solar, and incremental hydropower. Eligible projects must commence construction by September 30, 2011.

Extension & Modification of Production Tax Credits. The EIEA amended section 45 of the Internal Revenue Code to extend the in-service deadline for certain renewable energy projects to be eligible for the 30 percent production tax credit (PTC). The ARRA further extends the in-service deadline to January 1, 2013, for qualified wind facilities, and to January 1, 2014, for the majority of other qualified facilities, including open-loop and closed-loop biomass, geothermal, landfill gas, municipal solid waste, qualified hydropower projects, and qualified marine and hydrokinetic projects.³ The PTC generally must be claimed during the 10-year period beginning with the date the qualified facility is placed in service.

Extension & Conversion of Investment Tax Credits. The EIEA amended section 48 of the IRS code to extend the 30 percent investment tax credit (ITC) for solar energy property and qualified fuel cell property to January 1, 2017, added small wind energy property as a category of qualified investment for the 30 percent ITC, and extended the 10 percent ITC for microturbines to December 31, 2016. It also provided a new 10 percent ITC for combined heat and power systems, as well as geothermal heat pumps.

The ARRA adds a new subsection to section 48 of the code allowing a wide range of PTC-eligible facilities to claim ITCs rather than PTCs.⁴ Wind facility owners may elect ITCs in lieu of PTCs for facilities placed in service from January 1, 2009, through December 31, 2012. Owners of other renewable facilities placed in

3. ARRTA § 1101.

4. *Id.* § 1102.

service from January 1, 2009, through December 31, 2013, including biomass, geothermal, landfill gas, trash, qualified hydropower, and marine and hydrokinetic facilities, are eligible to elect ITCs instead of PTCs.

Converting Tax Credits to Grants. Beyond the PTC to ITC conversion, the ARRA also allows a taxpayer to exchange unclaimed ITCs or PTCs for a dollar-for-dollar grant from the U.S. Treasury.⁵ Eligible facilities include both those that have always been eligible for energy credits—in particular, solar and fuel cell projects—as well as the new PTC-eligible facilities. Most facilities are eligible for a 30 percent grant, but some (qualified microturbine, combined heat and power, and geothermal heat pump facilities) qualify only for a smaller, 10 percent grant. The ARRA contains provisions to coordinate the grant and ITC/PTC provisions to ensure that there is no double dipping.⁶

The grant will not be considered taxable income for federal income tax purposes, but will reduce the depreciation basis of the project by an amount equal to one-half of the ITC that was allowable before the conversion. The grant is not available to federal, state, and local governments and section 501(c) tax-exempt entities.

New Clean Renewable Energy Bonds. While the EIEA authorized \$800 million of new clean renewable energy bonds (CREBs) to finance facilities that generate electricity from wind, closed-loop biomass, open-loop biomass, geothermal, small irrigation, qualified hydropower, landfill gas, marine renewables, and trash combustion facilities, the ARRA authorizes an additional \$1.6 billion of CREBs. The ARRA also authorizes local governments, public power providers, nonprofit utilities, cooperative electric companies, and certain lenders to issue CREBs. In addition, the Act authorizes \$3.2 billion of qualified energy conservation bonds.⁷

Additional ARRA Tax Incentives. The ARRA removes the \$4,000 cap on the energy investment credit previously in effect for qualified small wind energy property placed in service after December 31, 2008.⁸ It also eliminates the caps on the 30 percent credit for many nonbusiness energy properties, including solar water heaters, small wind facilities, and geothermal heat pumps. The Act extends the placed-in-service date for many nonbusiness energy efficiency improvements to December 31, 2010; increases the credit rate for those expenditures from 10 percent to 30 percent; and sets a single overall (and lifetime) cap for these expenditures at \$1,500.

Incentives for Qualified Advanced Energy Projects (QAEP). The ARRA also provided tax credits to encourage investment in technologies and manufacturing facilities intended to promote the adoption of renewable energy technologies by creating section 48C of the IRS code. This program provides a 30 percent federal income tax credit for investment in property which “re-equips, expands, or establishes a manufacturing facility” or that produces renewable energy property.⁹ Applications

5. *Id.* §§ 1104, 1603.

6. *Id.* § 1104, adding new CODE § 48(d).

7. *Id.* §§ 1111, 1112.

8. *Id.* § 1103(a), amending CODE § 48(c).

9. Department of Energy Notice 2009-72, Qualifying Advanced Energy Project Credit Notice, available at http://www.energy.gov/recovery/documents/Federal_Notice_48C.pdf.

for tax credits under the first round of allocations were due October 16, 2009. Most analysts expect that the 2009-2010 round of allocations will consume all of the allocated \$2.3 billion.

The QAEP credit is an investment-based credit. The credit equals 30 percent of the taxpayer's basis in the property certified as eligible for the credit. There is no maximum tax credit per project. The credit is *not* refundable and taxpayers may *not* elect to receive a cash grant in lieu of the credit.¹⁰ The credit may be claimed in the tax year in which the qualified property is placed in service. In general, property is considered placed in service when it is placed in a condition or state of readiness and availability for a specifically assigned function. Taxpayers may also elect to take the credit early based on qualified progress expenditures paid or incurred during project construction pursuant to Treas. Reg. §1.46-5(o). If the taxpayer does not have sufficient tax liability to utilize the full amount of available credit in the year the project is placed in service, any remaining credit may be carried forward up to 20 years or back one year.

To qualify for QAEP credit, property must be used to re-equip, expand, or establish a manufacturing facility for the production of specified advanced energy property or property that, after further manufacture, will become specified advanced energy property. Components may be specified "advanced energy property," but the relative value of the components to the finished product will be taken into consideration in the DOE ranking process described below.

Specified energy property is:

- Property designed for use in the production of energy from the sun, wind, geothermal deposits, or other renewable resources;
- Fuel cells, microturbines, or an energy storage system for use with electric or hybrid-electric motor vehicles;
- Electric grids to support the transmission of intermittent sources of renewable energy, including property for the storage of such energy;
- Property designed to capture and sequester carbon dioxide and sequester carbon dioxide emissions;
- Property designed to refine or blend renewable fuels (but not fossil fuels) or to produce energy conservation technologies (including energy-conserving lighting technologies and Smart Grid technologies);
- New plug-in electric drive motor vehicles, qualified plug-in electric vehicles, or components designed specifically for use with such vehicles, including electric motors, generators, and power control units; or
- Other property designed to reduce greenhouse gas emissions as may be determined by the IRS.

10. If the applicant does not have taxable income that can be sheltered with the QAEP credit, there are monetization transaction strategies that can be utilized.

The property must be tangible property (other than a building or its structural components) subject to the allowance for depreciation or amortization, and must be an integral part of the qualifying project. A manufacturing facility is defined as a facility that makes or processes raw materials into finished products (or accomplishes any intermediate stage in that process).

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## 2012 Update

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Much of the optimism that accompanied enactment of the American Recovery and Reinvestment Act (ARRA)<sup>1</sup> in 2009 has to a large measure evaporated more than three years later. Treasury Department grants under ARRA § 1603 amounted to nearly \$9 billion between February 2009 and February 2012, but their impact has been hotly debated. Proponents claim that the grants supported the development of approximately 12,810 megawatts (MW) in renewable energy generation capacity, approximately 150,000 to 200,000 construction jobs, and between 5,100 and 5,500 operational jobs.<sup>2</sup> Critics argue that most of those jobs were temporary and ended after the completion of construction. The Energy Information Administration estimates that operating costs in 2016 will amount to \$517 per MW/hour for wind and \$625 to \$764 per MW/hour for solar generation, costs that are roughly five times the cost of coal-fired or natural gas-fired plants.<sup>3</sup>

The alternative fuel credits in Internal Revenue Code (IRC) § 6426 that were extended by the ARRA expired on December 31, 2009.<sup>4</sup> The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 renewed those credits until December 31, 2011, but that legislation was not adopted until December 17, 2010, nearly a year after the alternate fuel credits' expiration date.<sup>5</sup> As a result, many of the plants that would have produced qualifying alternative fuels were shuttered at the end of 2009. They were not reopened when the credits were extended because of the delay in enacting the renewal and the short time remaining in the program after the extension was finally approved.<sup>6</sup>

1. Pub. L. No. 111-5, 123 Stat. 115 (2009).

2. Marshall Goldberg, Gian Poro & Daniel Steinberg, Nat'l Renewable Energy Lab., PRELIMINARY ANALYSIS OF THE JOBS AND ECONOMIC IMPACTS OF RENEWABLE ENERGY PROJECTS SUPPORTED BY THE § 1603 TREASURY GRANT PROGRAM (NREL TP 6A20-52739) at 12, 17–18 (Apr. 2012), available at <http://www.nrel.gov/docs/fy12osti/52739.pdf>.

3. Benjamin Zycher, *Wind and Solar Power, Part I: Uncooperative Utility*, ENERGY & ENV'T OUTLOOK (Am. Enter. Inst. for Pub. Pol'y Research (Jan. 2012)), citing Energy Information Administration, *2016 Levelized Cost of New Generation from the Annual Energy Outlook 2010*, [http://www.eia.gov/forecasts/aeo/pdf/0383\(2012\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2012).pdf).

4. Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010, Pub. L. No. 111-312, § 704, 124 Stat. 3296 (2010).

5. *Id.*

6. John Funk, *Biodiesel Jobs Are Threatened as a Tax Credit for the Industry Expires*, CLEVELAND.COM, Feb. 8, 2010, [http://www.cleveland.com/business/index.ssf/2010/biodiesel\\_jobs\\_are\\_threatened.html](http://www.cleveland.com/business/index.ssf/2010/biodiesel_jobs_are_threatened.html).

Although the Department of Energy issued approximately \$2.3 billion in tax credits for the manufacture of qualified advanced energy projects under IRC § 48C,<sup>7</sup> few of those credits have been utilized. In addition, several high-profile business failures involving recipients of § 48C credits and other federal grants gave fuel to the arguments of critics who sought to portray the programs as costly and ineffective.<sup>8</sup>

The Obama administration's push for increased renewable generating capacity was also frustrated by Congress's failure to enact legislation for the cap and trade of greenhouse gas (GHG) emissions. One of the purposes of cap and trade would have been to monetize the value of non-GHG renewable generating capacity by creating a market for the sale of renewable energy credits (RECs) to the producers of GHG-producing non-renewable power. A cap and trade program was included as a section of the American Clean Energy and Security Act of 2009 but that legislation failed,<sup>9</sup> in part as a result of the argument that it would have increased the cost of electricity and would decrease domestic income and employment.<sup>10</sup> Similarly, the administration had hoped to encourage renewable power generation through a nationwide renewable portfolio standard (RPS) that was included as part of the American Clean Energy Leadership Act of 2009, but the prospect of a national RPS collapsed with the bill's demise.<sup>11</sup>

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7. Internal Revenue Service, *Section 48C Tax Credits Allocated January 7, 2010*, <http://www.irs.gov/businesses/article/0,,id=242969,00.html> (last visited July 3, 2012).

8. For example, subsidiaries of VESTAS North American received over \$51 million in Section 48C credits for the construction of advanced energy factories that were billed as creating jobs. See <http://www.irs.gov/businesses/article/0,,id=242969,00.html> (list of Section 48C tax credit recipients) (last visited July 6, 2012). In January 2012, however, VESTAS announced 2,335 worker layoffs, with the potential for more. Howard Pankratz, *Vestas to Lay Off More Than 2,300; Could Lay Off Another 1,600 in the U.S. Later This Year*, DENVER POST (Jan. 12, 2012), [http://www.denverpost.com/breakingnews/ci\\_19727018](http://www.denverpost.com/breakingnews/ci_19727018). Similarly, Cardinal Fastener & Specialty Co. received \$480,000 in Section 48C tax credits (see <http://www.irs.gov/businesses/article/0,,id=242969,00.html> (list of Section 48C tax credit recipients) (last visited Jul. 6, 2012)) but filed for bankruptcy protection in June 2011. John Funk, *Cardinal Fastener Files for Chapter 11 Bankruptcy Protection from Creditors*, CLEVELAND PLAIN-DEALER (June 30, 2011), available at [http://www.cleveland.com/business/index.ssf/2011/06/cardinal\\_fastener\\_files\\_for\\_ch.html](http://www.cleveland.com/business/index.ssf/2011/06/cardinal_fastener_files_for_ch.html) (last visited July 6, 2012).

9. H.R. 2454, 111th Cong. (2009).

10. Nicolas Loris, *The Costs of Cap and Trade*, MILW. J. SENTINEL, Sept. 4, 2010, <http://www.jsonline.com/news/opinion/102906484.html>.

11. S. 1462, 111th Cong. (2009).