U.S. House of Representatives
Committee on Science, Space, and Technology
Subcommittee on Investigations and Oversight
and the
Subcommittee on Energy and Environment

HEARING CHARTER

"Impact of Tax Policies on the Commercial Application of Renewable Energy Technology"

Thursday, April 19, 2012
9:30 a.m. – 11:30 a.m.
2318 Rayburn House Office Building

1. Purpose

On Thursday, April 19, 2012, the Committee on Science, Space, and Technology's Subcommittee on Investigations and Oversight and the Subcommittee on Energy and Environment will hold a joint hearing titled, "Impact of Tax Policies on the Commercial Application of Renewable Energy Technology."[1] The purpose of the hearing is to examine recently expired, current, and proposed renewable energy tax preferences, and their impact on the commercial application of renewable energy technologies.

2. Witness List

Panel 1

Dr. Molly F. Sherlock, Specialist in Public Finance, Congressional Research Service
Mr. John Parcell, Acting Deputy Tax Legislative Counsel U.S. Department of the Treasury
Dr. Michael Pacheco, Vice President, Deployment and Industrial Partnerships, National Renewable Energy Laboratory

Panel 2

Mr. Rhone Resch, President and CEO, Solar Energy Industries Association
Mr. Terry Royer, CEO, Winergy Drive Systems Corporation, Elgin, IL
Mr. Steven Erby, Vice President, Monolith Solar Associates, LLC, Rensselaer, NY
Dr. Benjamin Zycher, Visiting Scholar, American Enterprise Institute
Dr. Margo Thorning, Senior Vice President and Chief Economist, American Council for Capital Formation
Ms. Lisa Linowes, Executive Director, Industrial Wind Action Group, Lyman, NH

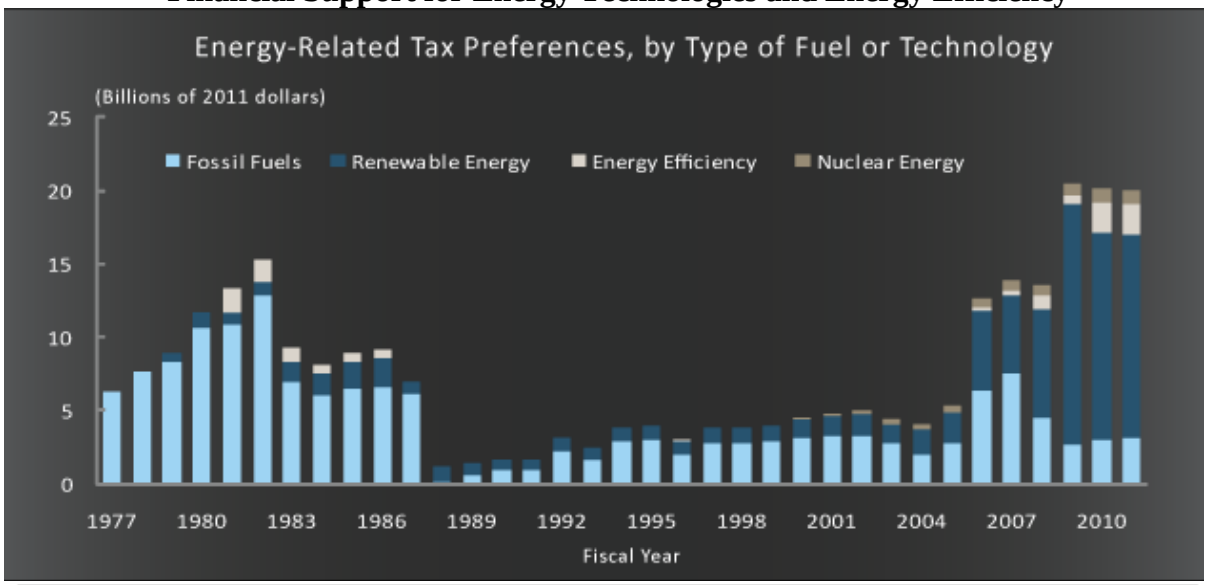
[1] The hearing is being conducted pursuant to clause (1)(p)(6) of House rule X, which assigns the Committee on Science, Space, and Technology jurisdiction over the "commercial application of energy technology," and clause 2(c) of House rule X, which requires "[e]ach standing committee" to "review and study on a continuing basis the impact or probable impact of tax policies affecting subjects within its jurisdiction."

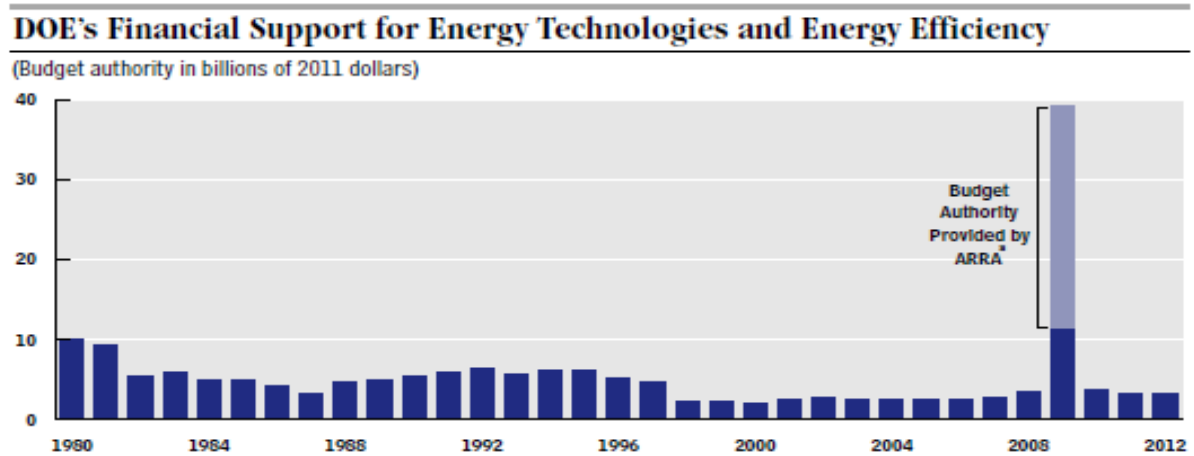
3. Background

The Federal Government supports the production and use of fossil fuels, nuclear and renewable energy, and increased energy efficiency through direct financial support to energy producers and consumers,[2] and through the use of energy tax preferences that reduce the taxes paid by producers and consumers of energy from these fuels and technologies.

As shown in Figure 1, in many years of the recent decades (with the notable exception of 2009, (which saw the passage of the American Recovery and Reinvestment Act of 2009 (ARRA)), the combined cost of the reduced revenues and increased outlays from these tax preferences have far exceeded the levels of direct financial support by the Department of Energy (DOE).

Figure 1. Energy-Related Tax Preferences, by Type of Fuel or Technology and DOE's Financial Support for Energy Technologies and Energy Efficiency[3]





[a]Reflects transfers and rescissions of budget authority for Section 1705 loan guarantees after ARRA was enacted.

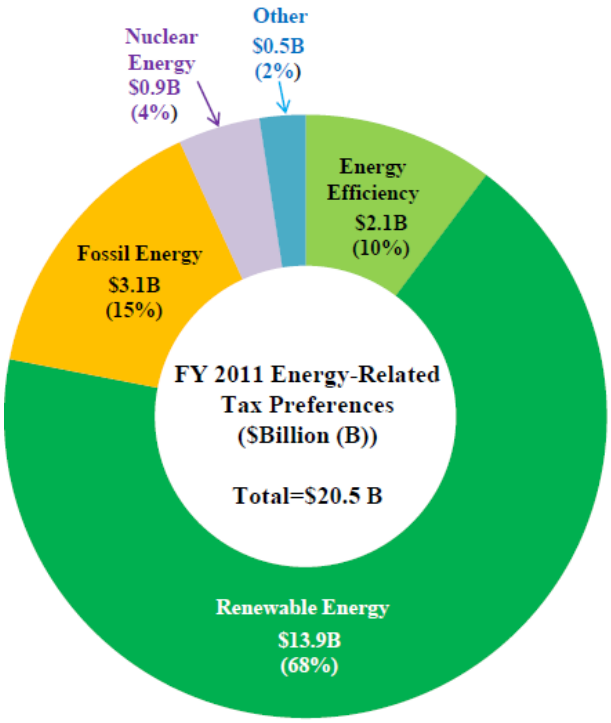
[2]Examples include the Department of Energy's energy research and development (R&D), weatherization and loan guarantee programs.

[3]Terry Dinan and Philip Webre, *Federal Financial Support for the Development and Production of Fuels and Energy Technologies*, Congressional Budget Office, Issue Brief, March 2012, Figure 1, p. 4, and Figure 3, p. 6 (http://www.cbo.gov/sites/default/files/cbofiles/attachments/03-06-FuelsandEnergy_Brief.pdf).

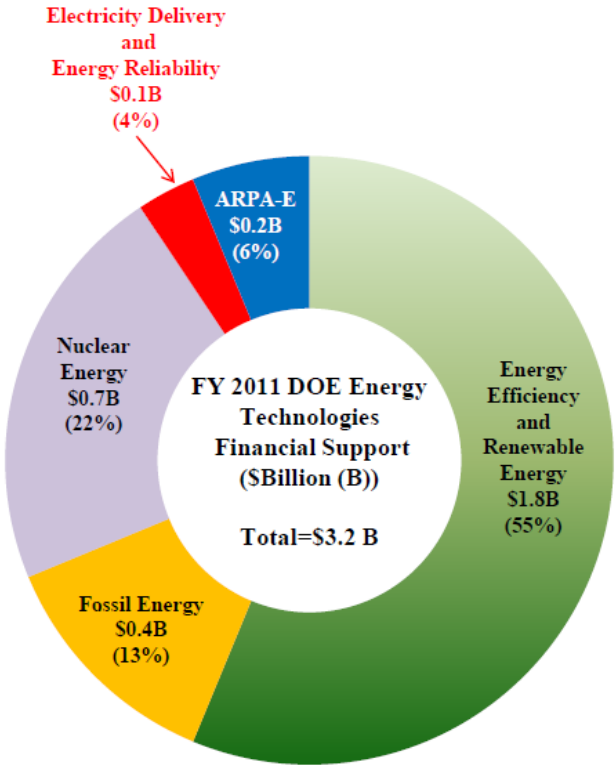
First established in 1916 to stimulate domestic production of oil and natural gas, energy tax preferences were expanded in the 1970's—primarily under the Carter Administration—to include energy efficiency, alternative fuels and renewable energy technologies. These were reduced considerably in the 1980's during the Reagan Administration, and then expanded again during the George H.W. Bush, Clinton, George W. Bush, and Obama Administrations.[4] As shown in Figure 1 above, the cost of these energy tax preferences grew rapidly after 2005—particularly for renewable energy. And, as shown in Figure 2, the Congressional Budget Office (CBO) recently estimated the FY 2011 tax preference costs for all sources of energy at $20.5 billion. Renewable energy tax preferences account for $13.9 billion, or 68%, of this amount, far exceeding DOE's $3.2 billion in direct financial support for overall energy technology development.

Figure 2. FY 2011 Cost of Energy-Related Tax Preferences and DOE's Support for Energy Technologies[5]

FY 2011 Energy-Related Tax Preferences ($Billion (B))



FY 2011 DOE Energy Technologies Financial Support ($Billion (B))[6]



[4]Molly F. Sherlock, *Energy Tax Policy: Historical Perspectives on and Current Status of Energy Tax Expenditures*, CRS Report R41227, May 2, 2011, pp. 2-10.

[5]Terry Dinan and Philip Webre, *Federal Financial Support for the Development and Production of Fuels and Energy Technologies*, Congressional Budget Office, Issue Brief, March 2012, Table 1, p. 3 and Figure 2, p. 5 (http://www.cbo.gov/sites/default/files/cbofiles/attachments/03-06-FuelsandEnergy_Brief.pdf); and Department of Energy, *FY 2013 Congressional Budget Request Budget Highlights*, Office of Chief Financial Officer, DOE/CF-0077, February 2012, p. 17 (http://www.mbe.doe.gov/budget/13budget/Content/Highlights.pdf).

[6]DOE's FY 2011 energy technologies financial support figures include budget authority (BA) for energy efficiency and renewable energy R&D and weatherization, fossil energy R&D, nuclear energy R&D and facilities management, electricity and energy reliability, and ARPA-E programs.

Current energy tax preferences and their FY 2011- FY 2015 cost are shown Table 1 and in Figure 3. The five-year total is $70.2 billion, with renewable energy accounting for $43.1 billion (61.4%), fossil energy for $12.5 billion (17.8%), other/miscellaneous for $7.6 billion (10.8%), energy efficiency and conservation for $4.5 billion (6.4%), and alternative technology vehicle for $2.5 billion (3.6%).

Table 1. Cost of Energy Tax Preferences: FY 2011-FY 2015[7]

Tax Preference	Cost 2011-2015 ($Billions)
Fossil Energy	
Expensing of percentage over cost depletion[a]	$5.5
Expensing of exploration and development costs	$4.4
Amortization of geological and geophysical expenditures associated with oil and gas exploration	$0.6
Coal Production Credits[a]	$0.2
Credits for investing in clean coal facilities	$1.0
Amortization of air and pollution control facilities	$0.8
Subtotal, Fossil Energy	***$12.5***
Renewable Energy Resources	
Credits for electricity production from renewable resources ("PTC" or "production tax credit")[b]	$9.1
Energy credit ("ITC" or "investment tax credit")[b]	$2.5
Section 1603 grants in lieu of tax credits	$15.9
Residential energy-efficient property credit	$0.9
Five-year cost recovery of certain energy property	$1.1
Credits for holders of clean renewable energy bonds	$0.4
Credit for alcohol fuels, biodiesel, and alternative fuels[a]	$11.8[8]
Advanced energy manufacturing tax credit	$1.4
Subtotal, Renewable Energy Resources	***$43.1***
Energy Efficiency and Conservation	
Credit for nonbusiness energy property[a]	$2.8
Deduction for expenditures on energy-efficient commercial property	$0.9
Exclusion of energy conservation subsidies provided by public utilities	$0.1
Energy-efficient new home credit[a]	$0.1
Credit for producing energy-efficient appliances[a]	$0.4
Qualified energy conservation bonds	$0.2
Subtotal, Energy Efficiency and Conservation Energy	***$4.5***
Alternative Technology Vehicle	
Hybrid vehicles, other alternative fuel vehicles, and plug-in electric vehicles	$2.2
Credits for clean fuel vehicle refueling property	$0.3
Subtotal, Alternative Technology Vehicle	***$2.5***
Other/Miscellaneous	
Election to expense 50% of qualified property used to refine liquid fuels	$3.0
Exceptions for energy-related publicly traded partnerships	$1.2
Exclusion of interest on State and local government private activity bonds for energy production facilities	$0.2
Depreciation recovery periods for energy specific items	$2.1
Deferral of gains from the sale of electric transmission property[a]	$1.1
Subtotal, Other/Miscellaneous	***$7.6***
Total, Energy Tax Provisions	***$70.2***

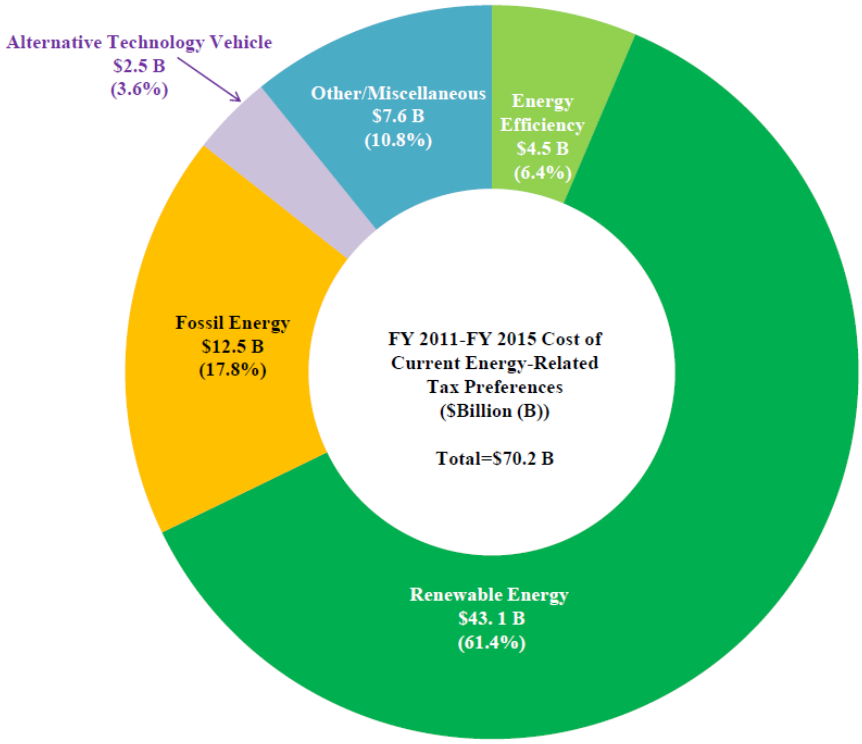
[a]Indicates that the provision was extended or modified by The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (P.L. 111-312).

[7]Molly F. Sherlock and Margot L. Crandall-Hollick, *Energy Tax Policy: Issues in the 112th Congress*, CRS Report R41769, March 28, 2012, Table 1, pp. CRS-8 – CRS-13. Table excludes provisions estimated to have a revenue loss of less than $50 million over the 2011 through 2015 period. See Appendix 1 for more details.

[8]This figure includes the reduction in excise tax receipts for alcohol fuels, biodiesel, and alternative fuel.

[b]Qualifying property that was under construction prior to the end of 2011 may be eligible for the Section 1603 Grant in Lieu of Tax Credit.

Figure 3. Cost of Energy Tax Provisions: FY 2011-2015[9]



4. Renewable Energy-Related Tax Preferences

The hearing is expected to focus primarily on four major renewable energy-related tax preferences: the investment tax credit (ITC), the production tax credit (PTC), the Section 1603 Program, and the Advanced Energy Manufacturing Tax Credit ("48C") Program, each of which is discussed below. A subsection on the credit for alcohol fuels, biodiesel, and alternative fuels is also included.

4.1 Energy Investment Tax Credit (ITC)[10]

The Energy ITC , first established as part of the Energy Tax Act of 1978 (P.L. 95-618), has been modified many times since.

As shown in Table 2, section 48 of the Internal Revenue Code (IRC) provides a non-refundable income tax credit for business investments in solar, fuel cells, small wind turbines (up to 100 kilowatt (kW) in capacity), geothermal systems, microturbines, and combined heat and power

[9]Source: Molly F. Sherlock and Margot L. Crandall-Hollick, *Energy Tax Policy: Issues in the 112th Congress*, CRS Report R41769, March 28, 2012, Table 1, pp. CRS-8 – CRS-13.
[10]For additional background, see U.S. Senate, Committee on Budget, *Tax Expenditures: Compendium of Background Material on Individual Provisions*, prepared by the Congressional Research Service, S. Prt. 111-58, December 2010, pp. 185-190 (http://www.gpo.gov/fdsys/pkg/CPRT-111SPRT62799/pdf/CPRT-111SPRT62799.pdf).

(CHP). Solar, fuel cell, and small wind turbine investments qualify for a 30% credit. The tax credit for investments in geothermal systems, microturbines, and CHP is 10%. For fuel cells, the 30% credit is limited to $1,500 per 0.5 kW of capacity. For microturbines, the credit is limited to $200 per kW of capacity. Generally, the ITC is available for property placed in service by December 31, 2016. For geothermal property, except geothermal heat pumps, there is no sunset date for the credit (the credit for geothermal heat pumps expires at the end of 2016). In 2017, the credit rate for solar property becomes 10%. The estimated 2011-2015 cost is $2.5 billion.

Table 2. Summary of Energy ITC Provisions[11]

Qualified Energy Property (sec. 48)	Credit rate	Maximum credit	Expiration
Equipment to produce energy from a geothermal deposit	10%	None	None
Equipment to use ground or ground water for heating or cooling	10%	None	December 31, 2016
Microturbine property (< 2 Mw electrical generation power plants of >26% efficiency)	10%	$200 per Kw of capacity	December 31, 2016
Combined heat and power property (simultaneous production of electrical/mechanical power and useful heat > 60% efficiency)	10%	None	December 31, 2016
Solar electric or solar hot water property	30% (10% after December 31, 2016)	None	None
Fuel cell property (generates electricity through electrochemical process)	30%	$1,500 for each ½ Kw of capacity	December 31, 2016
Small (<100 Kw capacity) wind electrical generation property	30%	None	December 31, 2016

4.2 Production Tax Credit (PTC)[12]

The PTC, first adopted as part of the Energy Policy Act of 1992 (P.L. 102-486), has also undergone many modifications. Taxpayers producing energy from a qualified renewable energy resource—which include wind, closed-loop biomass, open-loop biomass, geothermal energy, solar energy, small irrigation power, municipal solid waste (trash combustion and landfill gas), qualified hydropower production, and marine and hydrokinetic renewable energy sources—may

[11] U.S. Congress, Joint Committee on Taxation, *Present Law and Analysis of Energy-Related Tax Expenditures*, JCX-28-12, March 27, 2012, p. 4 (http://www.jct.gov/publications.html?func=startdown&id=4414).

[12] For additional background, see U.S. Senate, Committee on Budget, *Tax Expenditures: Compendium of Background Material on Individual Provisions*, prepared by the Congressional Research Service, S. Prt. 111-58, December 2010, pp. 197-203 (http://www.gpo.gov/fdsys/pkg/CPRT-111SPRT62799/pdf/CPRT-111SPRT62799.pdf).

qualify for the PTC, which is generally available for 10 years, beginning on the date the facility is placed in service.[13] As shown in Table 3 below, the credit amount in 2011 for electricity produced using wind, closed-loop biomass, and geothermal energy resources was 2.2¢ per kilowatt hour (kWh). Other resources qualify for a credit equal to half the full credit amount, or 1.1¢ per kWh in 2011. The credit amount is based on the 1993 value of 1.5¢ per kWh, which is adjusted annually for inflation. The production tax credit (PTC) is generally available for 10 years, beginning on the date the facility is placed in service. Certain facilities placed in service prior to August 8, 2005 are only eligible to receive the PTC for 5 years. To qualify for the credit, wind facilities must be placed in service by December 31, 2012. The placed-in-service deadline for other technologies is December 31, 2013. The estimated 2011-2015 cost is $9.1 billion.

Table 3. Summary of PTC Provisions[14]

Eligible Electricity Production Activity (sec. 45)[1]	Credit Amount for 2011[2] (cents per kilowatt-hour)	Expiration[3]
Wind	2.2	December 31, 2012
Closed-loop biomass	2.2	December 31, 2013
Open-loop biomass (including agricultural livestock waste nutrient facilities)	1.1	December 31, 2013
Geothermal	2.2	December 31, 2013
Solar (pre-2006 facilities only)	2.2	December 31, 2005
Small irrigation power	1.1	December 31, 2013
Municipal solid waste (including landfill gas facilities and trash combustion facilities)	1.1	December 31, 2013
Qualified hydropower	1.1	December 31, 2013
Marine and hydrokinetic	1.1	December 31, 2013

[1] Except where otherwise provided, all section references are to the Internal Revenue Code of 1986, as amended.

[2] In general, the credit is available for electricity produced during the first 10 years after a facility has been placed in service. The inflation adjusted credit amount for 2012 is expected to be released in April. Taxpayers may also elect to get a 30-percent investment tax credit in lieu of this production tax credit.

[3] Expires for property placed in service after this date.

[13] Certain facilities placed in service prior to August 8, 2005 are only eligible to receive the PTC for 5 years.

[14] U.S. Congress, Joint Committee on Taxation, *Present Law and Analysis of Energy-Related Tax Expenditures*, JCX-28-12, March 27, 2012, p. 2 (http://www.jct.gov/publications.html?func=startdown&id=4414).

4.3 Section (§) 1603 Program[15]

Section 1603 of the ARRA provides cash grants for investments in renewable energy production projects in lieu of the PTC or the ITC available under Section 45 or Section 48 of the Internal Revenue Code, respectively, depending on the technology type. Qualifying technologies include biomass, combined heat and power, fuel cells, geothermal, incremental hydropower, landfill gas, marine hydrokinetic, microturbine, municipal solid waste, solar, and wind. The value of the grant is equivalent to 30 percent of the project's total eligible cost basis, except for geothermal heat pumps, microturbines, and combined heat and power projects, where the value is 10 percent. The estimated 2011-2015 cost is $15.9 billion.

The §1603 Program is administered by the Department of the Treasury's Office of Financial Secretary (OFAS). DOE's National Renewable Energy Laboratory (NREL) manages the technical review of Program applications and advises OFAS on award decisions.[16]

The Department of the Treasury recently reported that more than $11.0 billion had been paid to 5,529 awardees under the Program,[17] and in its most recent "Overview and Status Update of the §1603 Program" report, it noted that as of March 29, 2012:[18]

- 34,104 projects were funded for a total of $11.2 billion.
- Total private and federal investment in §1603 projects = $37 billion.
- Total installed capacity of funded projects = 16.5 billion watts (GW).
- Total estimated electricity generation from funded projects = 42 trillion watt-hours (TWh).

Projects located in all 50 States, the District of Columbia and Puerto Rico are eligible for §1603 grants. As shown in Table 4, as of March 29, 2012, California had the largest number of proiects—17,250, or 50.6% of the total, Texas projects have received more than $1.7 billion, or 15.2% of the total, and Texas also had the most installed capacity under the program—2,962.8 megawatts (MW) or 17.9%.

Table 4. §1603 Program Grant Projects by Location[19]

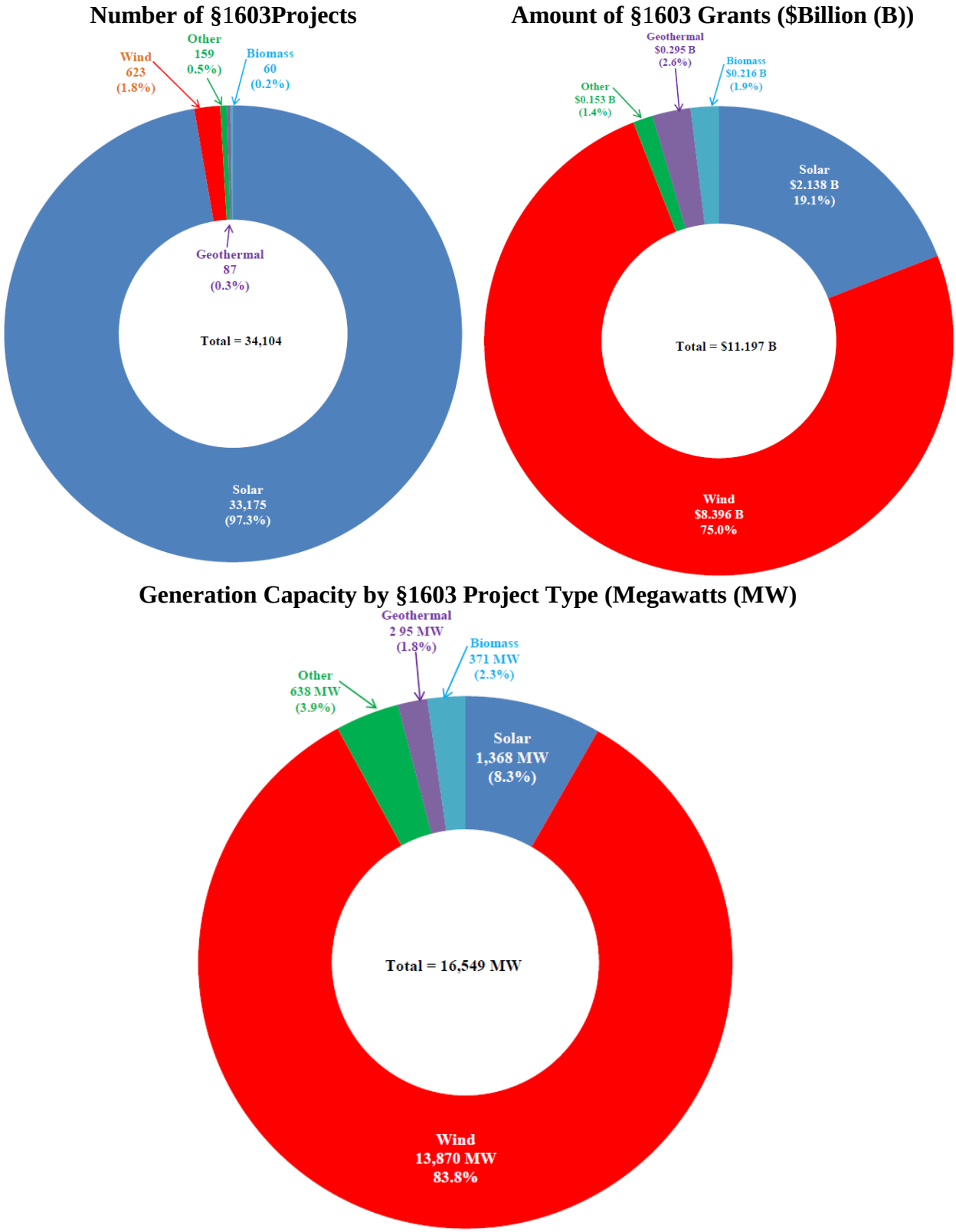
Location	Number	% Total	Amount ($Milllion)	% Total	Installed Capacity (MW)	% Total
Alabama	10	0.03%	$0.1	0.00%	0.0	0.00%
Alaska	2	0.01%	$0.7	0.01%	0.9	0.01%
Arizona	3,697	10.84%	$271.4	2.42%	252.9	1.53%
Arkansas	9	0.03%	$0.2	0.00%	0.1	0.00%
California	17,250	50.58%	$1,460.7	13.05%	1,583.9	9.57%
Colorado	2,007	5.88%	$348.7	3.11%	490.1	2.96%
Connecticut	953	2.79%	$34.1	0.30%	18.4	0.11%

[15]For additional background, see Phillip Brown and Molly F. Sherlock, *ARRA Section 1603 Grants in Lieu of Tax Credits for Renewable Energy: Overview, Analysis, and Policy Options*, CRS Report R41635, November 9, 2011.
[16]OFAS makes the final decision on whether or not award §1603 Program funds.
[17]U.S. Department of the Treasury, "Section 1603 - Payments for Specified Renewable Energy Property in Lieu of Tax Credits, Awardees as of March 13, 2012" (http://www.treasury.gov/initiatives/recovery/Documents/Section%201603%20Awards.xlsx)
[18]"Overview and Status Update of the §1603 Program," U.S. Department of the Treasury, March 29, 2011, p. 1 (http://www.treasury.gov/initiatives/recovery/Documents/Status%20overview.pdf).
[19]Ibid., pp. 3-4 (http://www.treasury.gov/initiatives/recovery/Documents/Status%20overview.pdf).

Location	Number	% Total	Amount ($Milllion)	% Total	Installed Capacity (MW)	% Total
Delaware	62	0.18%	$41.1	0.37%	51.5	0.31%
District of Columbia	34	0.10%	$1.3	0.01%	0.2	0.00%
Florida	436	1.28%	$214.7	1.92%	64.4	0.39%
Georgia	110	0.32%	$37.5	0.33%	38.3	0.23%
Hawaii	374	1.10%	$64.2	0.57%	45.1	0.27%
Idaho	41	0.12%	$289.2	2.58%	477.2	2.88%
Illinois	73	0.21%	$925.9	8.27%	1,520.9	9.19%
Indiana	31	0.09%	$346.8	3.10%	608.0	3.67%
Iowa	103	0.30%	$310.2	2.77%	545.3	3.30%
Kansas	22	0.06%	$2.0	0.02%	2.3	0.01%
Kentucky	14	0.04%	$2.2	0.02%	2.1	0.01%
Louisiana	221	0.65%	$1.3	0.01%	0.5	0.00%
Maine	30	0.09%	$219.1	1.96%	332.0	2.01%
Maryland	229	0.67%	$89.7	0.80%	131.9	0.80%
Massachusetts	759	2.23%	$71.8	0.64%	45.1	0.27%
Michigan	120	0.35%	$50.4	0.45%	75.9	0.46%
Minnesota	148	0.43%	$213.7	1.91%	333.7	2.02%
Mississippi	10	0.03%	$0.3	0.00%	0.5	0.00%
Missouri	101	0.30%	$200.6	1.79%	301.5	1.82%
Montana	17	0.05%	$71.8	0.64%	133.1	0.80%
Nebraska	13	0.04%	$133.9	1.20%	183.6	1.11%
Nevada	108	0.32%	$147.1	1.31%	168.5	1.02%
New Hampshire	20	0.06%	$1.1	0.01%	0.6	0.00%
New Jersey	3,343	9.80%	$404.5	3.61%	267.6	1.62%
New Mexico	93	0.27%	$177.1	1.58%	259.4	1.57%
New York	500	1.47%	$417.3	3.73%	653.3	3.95%
North Carolina	155	0.45%	$51.3	0.46%	35.3	0.21%
North Dakota	11	0.03%	$263.2	2.35%	483.5	2.92%
Ohio	206	0.60%	$89.2	0.80%	158.5	0.96%
Oklahoma	35	0.10%	$246.9	2.21%	429.0	2.59%
Oregon	836	2.45%	$495.1	4.42%	876.9	5.30%
Pennsylvania	706	2.07%	$342.9	3.06%	417.6	2.52%
Puerto Rico	18	0.05%	$8.9	0.08%	5.0	0.03%
Rhode Island	10	0.03%	$0.5	0.00%	0.3	0.00%
South Carolina	54	0.16%	$10.9	0.10%	357.0	2.16%
South Dakota	11	0.03%	$257.1	2.30%	469.8	2.84%
Tennessee	202	0.59%	$21.8	0.19%	20.4	0.12%
Texas	387	1.13%	$1,700.6	15.19%	2,962.8	17.90%
Utah	92	0.27%	$236.7	2.11%	322.7	1.95%
Vermont	143	0.42%	$48.3	0.43%	47.4	0.29%
Virginia	58	0.17%	$4.4	0.04%	3.8	0.02%
Washington	50	0.15%	$570.2	5.09%	934.0	5.64%
West Virginia	4	0.01%	$152.5	1.36%	200.2	1.21%
Wisconsin	183	0.54%	$35.1	0.31%	36.7	0.22%
Wyoming	3	0.01%	$110.8	0.99%	200.0	1.21%
Total	**34,104**		**$11,197**		**16,549**	

Figure 4 shows §1603 grant projects by technology. The 34,104 solar projects, accounting for 97.3% of the total projects, have received $2.138 billion, or 19.1% of the total grant value. The 623 wind projects—1.8% of the total—have received over $8.396 billion, or 75.0% of the total grant value.

Figure 4. §1603 Projects by Technology[20]



[20] *Ibid.*, p. 2 (http://www.treasury.gov/initiatives/recovery/Documents/Status%20overview.pdf).

A recent NREL analysis[21] used its Jobs and Economic Development Impacts (JEDI) models to estimate the gross national employment and economic impacts of large wind and PV projects funded by the §1603 Program from the Program's inception in September 2009 through November 10, 2011. The analysis estimated that up to 75,000 direct and indirect jobs and up to $44 billion in total economic output were supported by the design, manufacturing, construction, and installation of solar photovoltaic (PV) and wind projects funded by the §1603 Program. In addition, the study estimated that the operation and maintenance of these solar and wind facilities would continue to sustain up to $1.8 billion per year in economic output over the lifetime of the facilities (20-30 years).[22]

However, as the authors note, "this analysis does not include impacts from displaced energy or associated jobs, earnings, and output related to existing or planned energy generation resources (e.g., jobs lost in the operation of natural gas or coal plants due to the need for less electricity production from these plants, given increased generation from wind) or increases or decreases in jobs related to changes in electric utility revenues and consumer energy bills, among other impacts."[23] And further, they state that "[t]he results presented in this report cannot be attributed to the §1603 grant program alone. Some projects supported by a §1603 award may have progressed without the award, while others may have progressed only as a direct result of the program; therefore, the jobs and economic impact estimates can only be attributed to the total investment in the projects."[24]

4.4 Advanced Energy Manufacturing Tax Credit ("48C") Program

Section 1302 of the ARRA amended the Internal Revenue Code by adding a new Advanced Energy Manufacturing Tax Credit ("48C") of 30 percent for investments in manufacturing facilities for clean energy technologies.[25] The estimated 2011-2015 cost is $1.4 billion.

The ARRA limited total credits to $2.3 billion, and required the Secretary of the Treasury, in consultation with the Secretary of Energy, to establish a program to consider and award

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[21]Daniel Stenberg, Gian Porro, and Marshall Goldberg, *Preliminary Analysis of the Jobs and Economic Impacts of Renewable Energy Projects Supported by the §1603 Treasury Grant Program*, NREL/TP-6A20-52739, April 2012 (http://www.nrel.gov/docs/fy12osti/52739.pdf).

[22]U.S. Department of Energy, "NREL Report Highlights Positive Economic Impact and Job Creation from 1603 Renewable Energy Grant Program," April 6, 2012 (http://energy.gov/articles/nrel-report-highlights-positive-economic-impact-and-job-creation-1603-renewable-energy).

[23]*Ibid*., Footnote 2, p. iv.

[24]*Ibid*., p. vi.

[25]Technically, the tax credit is provided for investment in "eligible property" used in a "qualifying advanced energy project." Under §48C(c)(1)(A)(i), a "qualifying advanced energy project" is a project that "re-equips, expands, or establishes a manufacturing facility for the production of": (1) property designed to produce energy from renewable resources; (2) fuel cells, microturbines, or an energy storage system for use with electric or hybrid-electric vehicles; (3) electric grids to support the transmission, including storage, of intermittent sources of renewable energy; (4) property designed to capture and sequester carbon dioxide emissions; (5) property designed to refine or blend renewable fuels or to produce energy conservation technologies; (6) electric drive motor vehicles that qualify for tax credits or components designed for use with such vehicles; and (7) other advanced energy property designed to reduce greenhouse gas emissions. §48C(c)(2) defines "eligible property" as any property: (1) that is necessary for the production of qualifying advanced energy project property; (2) that is tangible personal property or other tangible property (not including a building and its structural components) that is used as an integral part of a qualifying facility; and (3) with respect to which depreciation (or amortization in lieu of depreciation) is allowable. (See *General Explanations of the Administration's Fiscal Year 2013 Revenue Proposals*, U.S. Department of the Treasury, February 2012, p. 7 (http://www.treasury.gov/resource-center/tax-policy/Documents/General-Explanations-FY2013.pdf.))

certifications for qualified investments eligible for credits within 180 days of the date of enactment. Under §48C(d)(3)(A), credits may be allocated only to projects where there is a reasonable expectation of commercial viability. In addition, §48C(d)(3)(B) required consideration be given to which projects: (1) will provide the greatest domestic job creation (both direct and indirect) during the credit period (February 17, 2009 through February 17, 2013); (2) will have the greatest net impact in avoiding or reducing air pollutants or anthropogenic emissions of greenhouse gases (GHGs); (3) have the greatest potential for technological innovation and commercial deployment; (4) have the lowest levelized cost of generated or stored energy, or of measured reduction in energy consumption or GHG emission (based on the cost of the full supply chain); and (5) have the shortest completion time.[26]

Treasury's Internal Revenue Service (IRS) issued Notice 2009–72[27] containing detailed 48C Program guidance that was effective on August 14, 2009. The Notice stated that the IRS would consider projects under the 48C Program "only if" DOE provided "a recommendation and ranking for the project," and that DOE would "provide a recommendation and ranking only if it determines that the project has a reasonable expectation of commercial viability and merits a recommendation based on the criteria in §48C(d)(3)(B)".[28]

The DOE recommendations were to "include a ranking of projects in descending order (that is, first, second, third, etc.) with "[t]he project receiving the highest ranking)" being "allocated the full amount of credit requested before any credit" was "allocated to a lower-ranked project." The same process was to be repeated on the "second and lower-ranked projects until the amount available for allocation" was "exhausted." DOE was to "recommend and rank projects only to the extent necessary to exhaust the amount available for allocation."[29]

IRS Notice 2009–7 also elaborated on the project eligibility and evaluation criteria DOE would use to base its review of and recommendations on projects; these are shown in Table 5 below.[30]

Under the IRS criteria, companies applied for tax credits for 594 projects, requesting a total of $10,902,251,709; 176 requesting $2,783,932,005 were ineligible because they did not meet the specified requirements—leaving 418 eligible applicants requesting a total of $8,118,319,704 competing for the $2.3 billion available.[31]

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[26]*General Explanations of the Administration's Fiscal Year 2013 Revenue Proposals*, U.S. Department of the Treasury, February 2012, p. 7 (http://www.treasury.gov/resource-center/tax-policy/Documents/General-Explanations-FY2013.pdf).

[27]"Notice 2009–72, Qualifying Advanced Energy Project Credit," *Internal Revenue Bulletin*, Bulletin 3009-37, Department of the Treasury, Internal Revenue Service, September 14, 2009, pp. 325-362 (http://www.irs.gov/pub/irs-irbs/irb09-37.pdf).

[28]*Ibid.*, p. 326.

[29]*Ibid.*

[30]*Ibid.*, p. 334. Missing from these criteria is the §48C(d)(3)(B)(iv) requirement that the Secretary of the Treasury "shall take in to consideration which projects" "have the lowest levelized cost of generated or stored energy, or of measured reduction in energy consumption or greenhouse gas emission (based on the cost of the full supply chain)".

[31]Statement of Henry Kelly, Principal Deputy Assistant Secretary, Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy Before the Subcommittee on Energy, Natural Resources, and Infrastructure Committee on Finance, United States Senate, Hearing on Re-establishing U.S. leadership in Clean Energy, High Technology Manufacturing, May 20, 2010, p. 6, footnote 11 (http://finance.senate.gov/imo/media/doc/052010HKtest.pdf).

Table 5. Notice 2009-7 48C Program Project Eligibility and Evaluation Criteria

• Evaluation Criterion 1: provides the greatest domestic job creation (both direct and indirect) during the credit period (February 17, 2009, through February 17, 2013).	
• Evaluation Criterion 2: provides the greatest net impact in avoiding or reducing air pollutants or anthropogenic emissions of greenhouse gases.	
• Evaluation Criterion 3: has the greatest potential for technological innovation and commercial deployment, as indicated by (i) the production of new or significantly improved technologies, (ii) improvements in levelized costs and performance, and (iii) manufacturing significance and value.	
• Evaluation Criterion 4: has shortest project time from certification to completion.	
• *Program Policy Factors* ✓ Program Policy Factor 1: Geographic Diversity ✓ Program Policy Factor 2: Technology Diversity	✓ Program Policy Factor 3: Project Size Diversity ✓ Program Policy Factor 4: Regional Economic Development

§48C(d)(5) required public disclosure of the names of companies allocated 48C Program credits and the amounts.[32] On January 8, 2010, President Obama announced awardees "competitively selected through a rigorous merit review process" of the entire $2.3 billion in available tax credits "for investments in 183 manufacturing facilities for clean energy products across 43 states."[33] The President's announcement also said that "the companies chosen say they will create more than 17,000 jobs."[34]

Of the nearly 600 project requests, tax credits were awarded to 183 projects submitted by 136 different companies. Descriptions for 140 projects were voluntary submitted by companies awarded $1,67 billion. There are also an additional 43 projects awarded $632 million that do not have any descriptions. In the interim, two of the companies awarded tax credits—Stirling Energy Systems, Inc.,[35] which received two tax credits totaling $10.4 million and United Solar Ovonic, LLC,[36] which received one totaling $13.2 million— have declared bankruptcy.

Table 6 presents 48C Program credits summary data by technology type. Based on information voluntarily submitted by companies, solar energy projects received the largest number of tax credits (48 or 26.2% of total) and the largest amount of tax credits ($861,312,199 or 37.5% total), followed by wind (35 tax credits or 19.1% of total, and $258,519,981 or 11.2% of total). Biomass, geothermal, solar, and wind technologies received 87 tax credits (47.5% of total) amounting to $1,158,190,786 (50.4% of total).

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[32]Internal Revenue Service. "Frequently Asked Questions About the Qualifying Advanced Energy Project Credit (Internal Revenue Code section 48C)" (http://www.irs.gov/businesses/article/0,,id=242505,00.html).

[33]"President Obama Awards $2.3 Billion for New Clean-Tech Manufacturing Jobs," The White House, Office of the Press Secretary, January 8, 2010 (http://www.whitehouse.gov/the-press-office/president-obama-awards-23-billion-new-clean-tech-manufacturing-jobs); and "Fact Sheet: $2.3 Billion in New Clean Energy Manufacturing Tax Credits," The White House, Office of the Press Secretary, January 8, 2010 at (http://www.whitehouse.gov/the-press-office/fact-sheet-23-billion-new-clean-energy-manufacturing-tax-credits).

[34]"President Obama Awards $2.3 Billion for New Clean-Tech Manufacturing Jobs," The White House, Office of the Press Secretary, January 8, 2010 (http://www.whitehouse.gov/the-press-office/president-obama-awards-23-billion-new-clean-tech-manufacturing-jobs).

[35]Jennifer Runyon, "Solar Shakeout Continues: Stirling Energy Systems Files for Chapter 7 Bankruptcy," RenewableEnergyWorld.com, September 28, 2011 http://www.renewableenergyworld.com/rea/news/article/2011/09/solar-shakeout-continues-stirling-energy-systems-files-for-chapter-7-bankruptcy).

[36]"Energy Conversion Devices, United Solar Ovonic File For Bankruptcy," Solar Industry Magazine, February 14 2012 (http://www.solarindustrymag.com/e107_plugins/content/content.php?content.9703).

Table 6. 48C Program Credits Summary Data by Technology Type[37]

Technology	Number of Tax Credits	% Total Number	Amount	% Total Amount
Battery	5	2.73%	$29,360,400	1.28%
Biomass	2	1.09%	$29,304,480	1.27%
Buildings	22	12.02%	$147,339,742	6.41%
CCS	2	1.09%	$4,842,438	0.21%
Fuel Cell	2	1.09%	$5,510,100	0.24%
Geothermal	2	1.09%	$9,054,126	0.39%
Industrial	8	4.37%	$166,503,955	7.24%
Nuclear	2	1.09%	$73,800,000	3.21%
Smart Grid	9	4.92%	$35,652,663	1.55%
Solar (all)	48	26.23%	$861,312,199	37.45%
Vehicles	3	1.64%	$46,790,145	2.03%
Wind (all)	35	19.13%	$258,519,981	11.24%
Subtotal	*140*	*76.50%*	*$1,667,990,229*	*72.52%*
Not specified	43	23.50%	$632,009,772	27.48%
Total	**183**		**$2,300,000,001**	

Table 7 lists the top 25 companies ranked by amount of tax credits received—33% of credits went to companies who are subsidiaries or affiliates of foreign-domiciled parents.[38]

Table 7. Top 20 Recipients of 48C Tax Credits

Rank	Company	Amount	% Total Amount	Parent or Affiliate Corporate Headquarters
1	REC Solar Grade Silicon LLC	$154,896,429	6.73%	Norway
2	Volkswagen Group of America Chattanooga Operations LLC	$150,000,000	6.52%	Germany
3	Hemlock Semiconductor Corp.	$141,870,000	6.17%	USA
4	Wacker Polysilicon North America LLC	$128,482,287	5.59%	Germany
5	United Technologies	$115,700,100	5.03%	USA
6	MiaSole	$101,800,200	4.43%	USA
7	General Electric Co.	$89,849,798	3.91%	USA
8	SolarWorld Industries America Inc.	$82,200,000	3.57%	Germany
9	Alstom Inc.	$65,725,800	2.86%	France
10	E.I. Du Pont de Nemours and Co., Inc.	$65,265,000	2.84%	USA
11	Vestas	$51,769,800	2.25%	Denmark
12	CaliSolar, Inc.	$51,563,980	2.24%	USA
13	Texas Instruments Inc.	$51,450,000	2.24%	USA
14	Dow Chemical Co. and Dow Corning Corp.	$47,334,621	2.06%	USA
15	AE Polysilicon Corp.	$44,850,000	1.95%	USA
16	Nanosolar, Inc.	$43,453,309	1.89%	Germany
17	Cree, Inc.	$39,087,000	1.70%	USA
18	Stion Corp.	$37,500,000	1.63%	USA
19	Siemens Industry, Inc.	$36,110,979	1.57%	Germany
20	Xunlight Corp.	$34,500,000	1.50%	USA
21	SCHOTT Solar, Inc.	$33,000,000	1.43%	Germany
22	SAGE Electrochromics, Inc.	$31,500,000	1.37%	USA
23	Gamesa	$30,946,582	1.35%	Spain
24	ZF Steering Systems, LLC	$28,560,000	1.24%	Germany
25	Novozymes Blair, Inc.	$28,401,000	1.23%	Denmark

[37] Derived from 48C award data available at http://www.whitehouse.gov/sites/default/files/48c_selection_011310.xls.

[38] Testimony of Kevin Book, Managing Director, Research, Clearview Energy Partners, LLC Before the Subcommittee on Energy, Natural Resources, and Infrastructure, Committee on Finance, United States Senate, Hearing on Re-establishing U.S. leadership in Clean Energy, High Technology Manufacturing, May 20, 2010, p. 4 (http://finance.senate.gov/imo/media/doc/052010KBtest.pdf).

4.5 Tax Credits for Alcohol Fuels, Biodiesel, and Alternative Fuels[39]

Tax credits for alcohol fuels were first enacted in 1980 as part of the Crude Oil Windfall Profit Tax Act of 1980 (P.L. 96-223) and subsequently modified many times in the interim. As shown in Table 8 below, almost all of the tax credits for alcohol fuels, biodiesel, and alternative fuels expired on December 31, 2011; the only exception being the $1.01per gallon credit for cellulosic biofuels, which expires on December 31, 2012. Even though these credits have expired, they have an estimated cost of $11.8 billion over the 2011-215 time period, with most of the cost coming from the impact they have on reducing excise tax receipts as opposed to revenue losses associated with income tax credits.[40]

Table 8. Summary of Alcohol Fuels, Biodiesel, and Alternative Fuels Provisions[41]

Fuel Type	Per Gallon Incentive Amount	Expiration
Agri-biodiesel and biodiesel (secs. 40A, 6426, and 6427)	$1.00 per gallon, plus $0.10 per gallon for small agri-biodiesel producers	December 31, 2011
Renewable diesel (secs. 40A, 6426, and 6427)	$1.00 per gallon	December 31, 2011
Alcohol fuel (other than ethanol and alcohol from natural gas or coal) (secs. 40, 6426, and 6427)	$0.60 per gallon	December 31, 2011
Ethanol fuel (secs. 40, 6426, and 6427)	$0.45 per gallon, plus $0.10 per gallon for small producers	December 31, 2011
Cellulosic biofuel (sec. 40)	$1.01 per gallon (including cellulosic alcohol)	December 31, 2012
Alternative fuel (secs. 6426 and 6427): • **liquefied petroleum gas** • **P Series Fuels** • **compressed or liquefied natural gas** • **liquefied hydrogen** • **any liquid fuel derived from coal through the Fischer-Tropsch process** • **compressed or liquefied gas derived from biomass** • **liquid fuel derived from biomass**	$0.50 per gallon	December 31, 2011 (September 30, 2014, in the case of liquefied hydrogen)

[39]For additional background, see U.S. Senate, Committee on Budget, *Tax Expenditures: Compendium of Background Material on Individual Provisions*, prepared by the Congressional Research Service, S. Prt. 111-58, December 2010, pp. 163-170 (http://www.gpo.gov/fdsys/pkg/CPRT-111SPRT62799/pdf/CPRT-111SPRT62799.pdf).

[40]Molly F. Sherlock and Margot L. Crandall-Hollick, *Energy Tax Policy: Issues in the 112th Congress*, CRS Report R41769, March 28, 2012, Table 2 Notes, p. 16.

[41]U.S. Congress, Joint Committee on Taxation, *Present Law and Analysis of Energy-Related Tax Expenditures*, JCX-28-12, March 27, 2012, p. 3 (http://www.jct.gov/publications.html?func=startdown&id=4414).

5. Administration's FY 2013 Budget Proposal and Recent Congressional Action[42]

The President's FY 2013 revenue proposal for renewable energy includes extending the PTC and ITC for wind to facilities and property placed in service in 2013, extending the Treasury §1603 Program cash grant to all otherwise qualifying property placed in service in 2012 (including property on which construction begins in 2012), and extending tax credits for alcohol fuels, biodiesel, and alternative fuels by one year. For property that is placed in service after 2012, the proposal would replace the §1603 Program grant with a refundable tax credit administered by the IRS. The refundable tax credit would be available for property on which construction begins in 2009, 2010, 2011, 2012, or 2013. The credit would be allowed with respect to property placed in service in 2013 (in the case of property, including wind facility property, that is part of a facility eligible for the renewable electricity production tax credit) and for property placed in service in 2013, 2014, 2015, or 2016 (in the case of any other energy property). Qualification requirements for the refundable credit would be the same (except for the effective date provisions) as the qualification requirements currently applicable under the Treasury §1603 Program grant program.[43] It is estimated that enacting these proposals would cost $3.9 billion over 10 years.[44]

The Administration has once again proposed an additional $5.0 billion for the 48C Program,[45] identical to its FY 2011[46] and FY 2012[47], proposals, which Congress did not approve.

In recent Congressional action, the Senate has twice failed to approve an additional $4.6 billion for the 48C Program and a number of the renewable energy tax extensions proposed by the Administration contained in Senator Stabenow's amendment[48] to S. 1813, the "Moving Ahead for Progress in the 21st Century Act" ("MAP-21"), and in Section 112(a) of S. 2204, the Repeal Big Oil Tax Subsidies Act. [49] The Senate rejected Senator Stabenow's amendment on March 13 by 49-49 and S. 2204 on March 29 by 51-47 —in both cases falling short of the 60 votes needed for adoption.

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[42]For additional details, see *General Explanations of the Administration's Fiscal Year 2013 Revenue Proposals*, U.S. Department of the Treasury, February 2012, p. 7 (http://www.treasury.gov/resource-center/tax-policy/Documents/General-Explanations-FY2013.pdf.))

[43]*Ibid.*, pp. 35-36, and 207.

[44]Molly F. Sherlock and Margot L. Crandall-Hollick, *Energy Tax Policy: Issues in the 112th Congress*, CRS Report R41769, March 28, 2012, Table 2 Notes, p. 21.

[45]*General Explanations of the Administration's Fiscal Year 2013 Revenue Proposals*, U.S. Department of the Treasury, February 2012, pp. 7-8 (http://www.treasury.gov/resource-center/tax-policy/Documents/General-Explanations-FY2013.pdf).

[46]*General Explanations of the Administration's Fiscal Year 2011Revenue Proposals*, U.S. Department of the Treasury, February 2010, pp. 6-7(http://www.treasury.gov/resource-center/tax-policy/Documents/General-Explanations-FY2011.pdf).

[47]*General Explanations of the Administration's Fiscal Year 2012 Revenue Proposals*, U.S. Department of the Treasury, February 2011, pp. 15-16 (http://www.treasury.gov/resource-center/tax-policy/Documents/General-Explanations-FY2012.pdf).

[48] Available at (http://www.congress.gov/cgi-lis/query/R?r112:FLD001:S51598,S51598)

[49] Available at (http://www.gpo.gov/fdsys/pkg/BILLS-112s2204pcs/pdf/BILLS-112s2204pcs.pdf)

Appendix 1. Energy Tax Preferences[50]

Tax Preference	Description	Cost 2011-2015 ($Billions)	Expiration Date	Internal Revenue Code (IRC) Section
Fossil Energy Energy Tax Preferences				
Expensing of percentage over cost depletion[a]	Firms that extract oil or gas are permitted to deduct 15% of sales (up to 25% for marginal wells depending on oil prices) to recover their capital investment in a mineral reserve.	$5.5	None.	611, 612, 613, 613A, 291
Expensing of exploration and development costs	Firms engaged in exploration and development of oil, gas, or geothermal properties have the option of expensing (deducting in the year paid or incurred) rather than capitalizing (i.e., recovering such costs through depletion or depreciation) certain intangible drilling and development costs (IDCs).	$4.4	None.	263(c), 291, 616-617, 57(a)(2), 59(e), 1254
Amortization of geological and geophysical expenditures associated with oil and gas exploration	Under the Modified Accelerated Cost Recovery System (MACRS), the cost of selected types of geological and geophysical property is depreciated over 2 years for independent producers.	$0.6	None.	167(h)
Coal Production Credits[a]	A $6.27-per-ton production credit for refined coal used to produce steam, or a $2.20 per-ton production credit (all adjusted for inflation from 1992) for coal reserves owned by an Indian tribe.	$0.2	12/31/11 (refined coal excluding steel industry fuel).	45
Credits for investing in clean coal facilities	Tax credit of 20% of investment for integrated gasification combined cycle (IGCC) systems and 15% for other advanced coal technology credit allocations made under the Energy Policy Act of 2005 (P.L. 109-58). 30% credit for IGCC and other advanced coal technology credit allocations under the Energy Improvement and Extension Act of 2008 (P.L. 111-343).	$1.0	Credit allocation limit.	48A, 48B
Amortization of air and pollution control facilities	Allows the pre-1976 5-year amortization period for investments in pollution control equipment for coal-fired electric generation plants available to those plants placed in service on or after January 1, 1976. The 5-year amortization incentive for pre-1976 plants applies only to pollution control equipment with a useful life of 15 years or less. In that case 100% of the cost can be amortized over five years. If the property or equipment has a useful life greater than 15 years, then the proportion of costs that can be amortized over five years is less than 100%.	$0.8	None.	169
Subtotal, Fossil Energy Energy Tax Preferences		***$12.5***		
Renewable Energy Resources Energy Tax Preferences				
Credits for electricity production from renewable resources ("PTC" or "production tax credit")[b]	Tax credit of 2.2¢/kWh for electricity produced from wind, closed-loop biomass, and geothermal energy. Tax credit of 1.1¢/kWh for electricity produced from open-loop biomass, solar, small irrigation, landfill gas, trash combustion, qualified hydropower, marine and hydrokinetic sources. The tax credit is available for 10 years after the date the facility is placed in service.	$9.1	Property must be placed in be placed in service by 12/31/2013 (12/31/2012 for wind).	45

[50] Source: Molley F. Sherlock and Margot L. Crandall-Hollick, *Energy Tax Policy: Issues in the 112th Congress*, CRS Report R41769, March 28, 2012, Table 1, pp. CRS-8 – CRS-13. Table does not include provisions estimated to have a revenue loss of less than $50 million over the 2011 through 2015 period.

Tax Preference	Description	Cost 2011-2015 ($Billions)	Expiration Date	Internal Revenue Code (IRC) Section
Energy credit ("ITC" or "investment tax credit")[b]	Tax credit equal to 10% of investment in energy production using geothermal, microturbine, or combined heat and power methods. The tax credit is equal to 30% of investment in energy production using solar electric, solar hot water, fuel cell or small wind methods.	$2.5	None (geothermal excluding geothermal heat pumps); 12/31/16 (other technologies; solar has permanent 10% credit after 2012).	48
Section 1603 grants in lieu of tax credits	Section 1603 allows taxpayers eligible for the PTC and ITC to receive a one-time cash grant in lieu of tax credits. Eligible facilities may qualify for a grant equal to 10% or 30%, depending on technology type, of a qualifying project's eligible cost basis.	$15.9	Under construction by 12/12/11. Placed-in-service deadline conforms with PTC or ITC.	5,48
Residential energy-efficient property credit	Tax credit for 30% of the cost of the purchase of solar electric property, solar water heating property, geothermal heat pump property, or small wind energy property. Fuel cell power plants receive 30% credit, limited to $500 for each 0.5 kilowatt of capacity.	$0.9	12/31/2016.	25D
Five-year cost recovery of certain energy property	Accelerated depreciation allowances are provided under the modified accelerated cost recovery system (MARCs) for investments in certain energy property. Specifically, certain solar, wind, geothermal, fuel cell, combined heat and power (CHP), microturbine and biomass property has a five year recovery period. Cellulosic biofuel plant property is allowed an additional first-year depreciation deduction equal to 50% of the property's adjusted basis.	$1.1	12/31/2012 (placed in service date for cellulosic biofuel property). None (other technologies).	168
Credits for holders of clean renewable energy bonds	Provides a tax credit for the holder of the bond against its income tax. Clean Renewable Energy Bonds ("CREBs") are subject to a volume cap of $1.2 billion with a credit rate set to allow the bond to be issued at par and without interest. New Clean Renewable Energy Bonds ("New CREBs") are subject to a volume cap of $2.4 billion with a credit rate set at 70% of what would permit the bond to be issued at par and without interest.	$0.4	Volume limited (all authorized CREB and new CREB funds have been allocated).	54, 54C

Tax Preference	Description	Cost 2011-2015 ($Billions)	Expiration Date	Internal Revenue Code (IRC) Section
Credit for alcohol fuels, biodiesel, and alternative fuels[a]	Coordinated income and excise tax credits. Ethanol tax credit generally 45¢ per gallon (extra 10¢ for small producers); alcohol tax credit generally 60¢ per gallon for alcohol other than ethanol; $1 per gallon for biodiesel, agri-biodiesel, and renewable diesel (extra 10¢ for small producers of agri-biodiesel); alternative fuels generally 50¢ per gallon; cellulosic biofuels generally $1.01 per gallon. Passage of various legislation in 111th Congress made black liquor ineligible for both the cellulosic biofuel producer credit and the alternative fuels tax credit. Depending on the specific incentive, tax credits go to fuel producers and/or blenders.	$11.8[51]	12/31/2011 (except for cellulosic bio-fuels production credit)cellulosic biofuels production credit).	40, 40A, 6426, 6427(e)
Advanced energy manufacturing tax credit	30% tax credit for qualified investments in advanced energy property. A total of $2.3 billion was allocated for advanced energy property investment tax credits, which were competitively awarded by the Department of Energy (DOE) and the Treasury.	$1.4	Capped (all available credits were allocated in the first allocation round which ended 1/16/2009).	48C
Subtotal, Renewable Energy Resources Energy Tax Preferences		***$43.1***		
Energy Efficiency and Conservation Energy Tax Preferences				
Credit for nonbusiness energy property[a]	Tax credit for 10% of the amount paid for qualified energy-efficiency improvements and expenditures for residential energy property including qualifying improvements to the building's envelope, the HVAC system, furnaces, or boilers. Credit limited to $500. This credit replaces the 30% credit, up to $1,500, that was available during 2009 and 2010.	$2.8	12/31/2011.	25C
Deduction for expenditures on energy- efficient commercial property	Tax deduction for the cost of building envelope components, heating cooling systems, and lighting. The deduction is limited to $1.80 per square foot	$0.9	12/31/2013.	179D
Exclusion of energy conservation subsidies provided by public utilities	Subsidies are not taxable as income.	$0.1	None.	136
Energy-efficient new home credit[a]	Manufacturers of manufactured homes may claim $1,000 credit for building homes 30% more efficient than the standard; Contractors may claim $2,000 credit for building homes 50% more efficient than the standard.	$0.1	12/.31/2011.	45L
Credit for producing energy-efficient appliances[a]	Tax credit based on energy efficiency. Maximum credit is $75 for dishwashers, $200 for refrigerators, and $225 for clothes washers	$0.4	12/.31/2011.	45M
Qualified Energy Conservation Bonds (QECBs)	Federal government has authorized issue of $3.2 billion in QECBs,, which provide a tax credit worth 70% of the tax credit bond rate stipulated by Secretary of the Treasury. QEC bonds issued by state and local governments must fund an energy-savings project, such as the green renovation of a public building, R&D in alternative fuels, and public transportation projects.	$0.2	Volume limited.	54D

[51]This figure includes the reduction in excise tax receipts for alcohol fuels, biodiesel, and alternative fuel mixtures.

Tax Preference	Description	Cost 2011-2015 ($Billions)	Expiration Date	Internal Revenue Code (IRC) Section
Subtotal, Energy Efficiency and Conservation Energy Tax Preferences		***$4.5***		
Alternative Technology Vehicles Energy Tax Preferences				
Hybrid vehicles, other alternative fuel vehicles, and plug-in electric vehicles	The first 60,000 hybrid cars or light trucks sold per manufacturer are eligible for a credit of $400 to $2,400 (depending on fuel economy). An additional credit of $250 to $1,000 is available depending on a vehicles expected lifetime fuel savings. Heavy vehicles (those exceeding 8,500 pounds) qualify for up to $30,000 in credits which are not subject to a volume cap. Fuel cell vehicles receive a base credit of $4,000 (reduced to $4,000 after 2009) for vehicles weighing less than 8,500 pounds. Heavier vehicles qualify for up to a $40,000 credit. An additional credit of up to $4,000 is available for cars and light trucks that exceed the 2002 base fuel economy. A 10% credit, up to $2,500, is available for the cost of electric-drive low-speed neighborhood vehicle, motorcycle and three-wheeled vehicles. A 10% credit, up to $4,000, is available for conversion to a plug-in electric drive vehicle. Lean burn vehicles eligible for same credit as hybrid vehicles. Alternative fuel vehicles can qualify for a credit of up to $4,000 for cars and light trucks and $32,000 for heavy vehicles. Credit amount varies according to vehicle's incremental cost and ratio of alternative fuel use. (expired) Credits available for plug-in electric vehicles are available up to $7,500 depending on kilowatt hour capacity of vehicle (prior to 2010 the credit limit was higher, up to $15,000 for qualifying heavy vehicles).	$2.2	12/31/2010 for hybrids (12/31/2009 for vehicles weighing more than 8,500 pounds). 12/31/2014 for fuel cell vehicles. 12/31/2011 for electric drive low speed vehicles and conversion to plug-in vehicle. 12/31/2010 for advanced lean burn vehicles, and alternative fuel vehicles. Credit for plug-in electric vehicle volume capped for each manufacturer.	30, 30B, 30D
Credits for clean fuel vehicle refueling property	A 30% credit for qualifying property, capped at $30,000 for business property and $1,000 for nonbusiness property. During 2009 and 2010, the credit was temporarily increased to 50%, capped at $50,000 for business property and $2,000 for nonbusiness property. During 2009 and 2010, hydrogen property was eligible for a credit up to $200,000.	$0.30	12/31/2011 (12/31/2014 for hydrogen refueling property).	30C
Subtotal, Alternative Technology Vehicles Energy Tax Preferences		***$2.5***		
Other/Miscellaneous Energy Tax Preferences				
Election to expense 50% of qualified property used to refine liquid fuels	A taxpayer may elect to expense 50% of the cost of any qualified property used for processing liquid fuel from crude oil or qualified fuels. The remainder is recovered using a 10- year recovery period under the modified accelerated cost recovery system (MACRS).	$3.0	12/31/2013 (property must be under contract for construction by 1/1/10).	179(c)

Tax Preference	Description	Cost 2011-2015 ($Billions)	Expiration Date	Internal Revenue Code (IRC) Section
Exceptions for energy-related publicly traded partnerships	Publicly traded partnerships are generally treated as corporations. The exception from this rule occurs if at least 90 percent of its gross income is derived from interest, dividends, real property rents, or certain other types of qualifying income. Qualifying income includes income derived from certain energy-related activities.	$1.2	None.	7704, 851
Exclusion of interest on State and local government private activity bonds for energy production facilities	Exclusion of interest from private activity bonds used to finance privately owned or operated sewage, water, solid waste disposal, and heating and cooling facilities, certain private electric and gas facilities, hydroelectric dam enhancements, qualified green building and sustainable design projects from tax.	$0.2	None.	141, 142
Depreciation recovery periods for energy specific items	Smart electric distribution property is allowed 10-year depreciation under the modified accelerated cost recovery system (MARCs). Certain electric transmission property is allowed a 15-year depreciation. Natural gas distribution lines are also allowed a 15-year depreciation.	$2.1	Various.	168(e)
Deferral of gains from the sale of electric transmission property[a]	A taxpayer may elect to recognize the gain from the sale of certain electric transmission property over an eight year period.	$1.1	12/31/2011.	451
Subtotal, Other/Miscellaneous Energy Tax Preferences		***$7.6***		
Total, Energy Tax Preferences		***$70.2***		

[a]Indicates that the provision was extended or modified by The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (P.L. 111-312).

[b]Qualifying property that was under construction prior to the end of 2011 may be eligible for the Section 1603 Grant in Lieu of Tax Credit.