



Renewable Energy and Energy Efficiency Incentives: A Summary of Federal Programs

Lynn J. Cunningham
Information Research Specialist

Beth A. Roberts
Information Research Specialist

October 18, 2013

Congressional Research Service

7-5700

www.crs.gov

R40913

Summary

Energy is crucial to the operation of a modern industrial and services economy. Recently, there have been growing concerns about the availability and cost of energy and about environmental impacts of fossil energy use. Those concerns have rekindled interest in energy efficiency, energy conservation, and the development and commercialization of renewable energy technologies.

Many of the existing energy efficiency and renewable energy programs have authorizations tracing back to the 1970s. Many of the programs have been reauthorized and redesigned repeatedly to meet changing economic factors. The programs apply broadly to sectors ranging from industry to academia, and from state and local governments to rural communities.

Since 2005, Congress has enacted several major energy laws: the Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); the Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); the Energy Improvement and Extension Act (EIEA), enacted as Division B of the Emergency Economic Stabilization Act (EESA; P.L. 110-343); and the American Reinvestment and Recovery Act (ARRA; P.L. 111-5). Each of those laws established, expanded, or modified energy efficiency and renewable energy research, development, demonstration, and deployment (RDD&D) programs. The Department of Energy (DOE) operates the greatest number of efficiency and renewable energy incentive programs. The Department of the Treasury and the Department of Agriculture (USDA) operate several programs. A few programs can also be found among the Departments of Interior (DOI), Labor (DOL), Housing and Urban Development (HUD), Veterans Affairs (VA), and the Small Business Administration (SBA).

This report describes federal programs that provide grants, loans, loan guarantees, and other direct or indirect incentives for energy efficiency, energy conservation, and renewable energy. For each program, the report provides the administering agency, authorizing statute(s), annual funding, and the program expiration date. The appendixes provide summary information in a tabular format and also list recently expired programs.

Contents

Introduction.....	1
FY2013 Appropriations Uncertainty	2
I. Department of Energy Office of Energy Efficiency and Renewable Energy	3
Renewable Energy	3
Biomass	3
1. Bioenergy Technologies Program (formerly the Biomass and Biorefinery Systems R&D Program)	3
2. Regional Biomass Energy Grant Programs.....	4
Geothermal.....	4
3. Geothermal Technologies Program (GTP).....	4
Hydrogen and Fuel Cells.....	5
4. Hydrogen & Fuel Cell Technologies Program.....	5
Solar	6
5. Solar Energy Technologies Program (SETP).....	6
Water Power	7
6. Water Power Program (formerly Wind and Hydropower Technologies Program)	7
Wind Energy Program.....	7
7. Wind Energy Program (formerly Wind and Hydropower Technologies Program)Administered by: EERE.....	7
Energy Efficiency	8
Buildings	8
8. Building Technologies Program.....	8
9. Weatherization Assistance Program (WAP).....	9
Industrial	10
10. Advanced Manufacturing Office (AMO, formerly the Industrial Technologies Program - ITP).....	10
11. Inventions and Innovations Program.....	10
Vehicles	11
12. Vehicle Technologies Program.....	11
Other Energy Efficiency and Renewable Energy Programs	12
13. Conservation Research and Development Grants.....	12
14. Energy Efficiency and Renewable Energy Information Dissemination, Outreach, Training, and Technical Analysis/Assistance Grant Program	12
15. Energy Efficiency and Renewable Energy Technology Deployment, Demonstration, and Commercialization Grant Program.....	13
16. Renewable Energy Production Incentive (REPI).....	13
17. Renewable Energy Research and Development Program.....	14
18. State Energy Program (SEP).....	15
19. Tribal Energy Program.....	15
Other DOE Offices/Cross-Cutting Programs	16
20. Advanced Research Projects Energy Financial Assistance Program (ARPA-E).....	16
21. Electricity Delivery and Energy Reliability, Research, Development and Analysis Grant Program (Office of Electricity Delivery and Energy Reliability - OE).....	17
22. Federal Energy Management Program (FEMP).....	18

23. Financial Assistance Program (Office of Science).....	18
24. Loan Guarantee Program (Office of the Chief Financial Officer).....	19
25. Small Business Innovation Research Program (SBIR)/Small Business Technology Transfer Program (STTR).....	20
II. U.S Department of the Treasury.....	20
Homeowner.....	20
1. Residential Energy Efficiency Tax Credit.....	20
2. Residential Renewable Energy Tax Credit.....	21
Business.....	21
3. Business Energy Investment Tax Credit.....	21
4. Energy Efficient Commercial Buildings Tax Deduction.....	22
5. Energy-Efficient New Homes Tax Credit for Home Builders.....	22
Industry.....	23
6. Energy Efficient Appliance Tax Credit for Manufacturers.....	23
7. Qualifying Advanced Energy Manufacturing Investment Tax Credit (48C).....	23
8. Renewable Electricity Production Tax Credit (PTC).....	24
9. Residential Energy Conservation Subsidy Exclusion (Corporate).....	25
10. Residential Energy Conservation Subsidy Exclusion (Personal).....	25
State, Local and Tribal Governments.....	25
11. Qualified Energy Conservation Bonds (QECCBs).....	25
Cross-Cutting.....	26
12. Modified Accelerated Cost-Recovery System (MACRS).....	26
13. Alternative Motor Vehicle Credit.....	27
III. Department of Agriculture.....	27
1. Assistance to High Energy Cost Rural Communities Program.....	27
2. Bioenergy Program for Advanced Biofuels.....	28
3. Biomass Crop Assistance Program (BCAP; Sec. 9011).....	28
4. Biorefinery Assistance Program (Sec. 9003).....	29
5. Community Wood Energy Program.....	30
6. New Era Rural Technology Competitive Grants Program.....	31
7. Repowering Assistance Program (RAP).....	31
8. Rural Energy For America Program (REAP) Grants and Loans.....	32
9. Sustainable Agriculture Research and Education Program (SARE).....	33
IV. Department of the Interior.....	34
1. Energy and Mineral Development Program: Minerals and Mining on Indian Lands.....	34
2. Tribal Energy Development Capacity Grant Program.....	34
V. Small Business Administration.....	35
1. 7(a) Loan Guarantees.....	35
2. 504 Loan Guarantees.....	35
VI. U.S. Department of Housing and Urban Development.....	36
1. Energy Efficient Mortgages (EEMs).....	36
VII. Department of Labor.....	37
1. Program of Competitive Grants for Worker Training and Placement in High Growth and Emerging Industry Sectors.....	37
VIII. Department of Veterans Affairs.....	38
1. Energy Efficient Mortgages (EEMs).....	38

Tables

Table A-1. Federal Incentives by Agency	39
Table A-2. Alternative Motor Vehicle Credit (26 USC §30B)	46
Table B-1. Index of Programs by Applicant Eligibility	47
Table B-2. Index of Programs by Technology Type	48
Table D-1. Expired Federal Incentives by Agency	54

Appendixes

Appendix A. Summary of Federal Renewable Energy and Energy Efficiency Incentives/Index of Programs	39
Appendix B. Index of Programs by Applicant Eligibility and Technology Type	47
Appendix C. Expired Federal Energy Efficiency and Renewable Energy Incentive Programs	50
Appendix D. Summary of Expired Federal Renewable Energy and Energy Efficiency Incentives/Index of Programs	54

Contacts

Author Contact Information.....	55
---------------------------------	----

Introduction

The United States has an abundance of natural resources. For much of the nation's history, energy was not a concern as commerce and industry needs could be met by domestic supplies. However, industrialization and population growth, and the continuing development of a consumer-oriented society, soon led to the necessity of obtaining foreign sources of energy to supplement the demands of a growing economy.

Recognition of the implications of dependence on foreign sources of energy, coupled with concerns over the volatility of prices driven by fluctuations in supply spurred by world events, have led to efforts to increase U.S. energy independence and reduce domestic consumption. The result has been the emergence of a number of programs focused on energy efficiency and conservation of domestic resources and on research programs that target the development of renewable sources of energy. Many of these programs have roots going back almost 40 years and have been redesigned many times over that period.

Many of the current programs have been reauthorized and redesigned periodically to meet changing economic conditions and national interests. The programs apply broadly to sectors ranging from industry to academia, and from state and local governments to rural communities. Each program has been designed to meet current needs as well as future anticipated challenges.

Since 2005, Congress has enacted several major energy laws: the Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); the Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); the Energy Improvement and Extension Act (EIEA), enacted as Division B of the Emergency Economic Stabilization Act (EESA; P.L. 110-343); and the American Reinvestment and Recovery Act (ARRA; P.L. 111-5). Each of those laws established, expanded, or modified energy efficiency and renewable energy research, development, demonstration, and deployment (RDD&D) programs. The Department of Energy (DOE) operates the greatest number of efficiency and renewable energy incentive programs. The Department of the Treasury and the Department of Agriculture (USDA) operate several programs. A few programs can also be found among the Departments of Interior (DOI), Labor (DOL), Housing and Urban Development (HUD), Veterans Affairs (VA), and the Small Business Administration (SBA).

This report outlines current federal programs and provisions providing grants, loans, loan guarantees, and other direct or indirect incentives for energy efficiency, energy conservation, and renewable energy RDD&D. The programs are grouped by administering agency with information links to applicable federal agency websites. Incentives are summarized and indexed in the appendixes.

Most program descriptions were compiled from authorizing statutes, the U.S. Code, and Administration budget request documents. Other program descriptions and some funding information were compiled from The Database of State Incentives for Renewables and Efficiency (DSIRE), the *Catalog of Federal Domestic Assistance* (CFDA) and the Energy Star website. Most budgetary figures were compiled from executive agency budget justifications and congressional committee reports. For more information on agriculture-related grant programs, please see CRS Report R41985, *Renewable Energy Programs and the Farm Bill: Status and Issues*, by Randy Schnepf. For more information on programs supporting the development and deployment of alternatives to conventional fuels and engines in transportation, please also see CRS Report

R42566, *Alternative Fuel and Advanced Vehicle Technology Incentives: A Summary of Federal Programs*, by Lynn J. Cunningham et al.

FY2013 Appropriations Uncertainty

The final amount of FY2013 Energy and Water Development appropriations for DOE energy technologies has not yet been established.¹ These appropriations were considered in the context of the Budget Control Act of 2011 (BCA; P.L. 112-25), which established discretionary spending limits for FY2012-FY2021.

On September 28, 2012, President Obama signed into law the Continuing Appropriations Resolution, 2013 (P.L. 112-175). For Energy and Water Development programs, the act continued appropriations through March 27, 2013, at 0.612% above the FY2012-enacted levels. Pursuant to the BCA, as amended,² President Obama ordered that the joint committee sequester be implemented on March 1, 2013.

On March 26, 2013, the President signed the FY2013 Defense and Military Construction/VA, Full Year Continuing Resolution (P.L. 113-6). The act funded Energy and Water Development accounts for DOE energy technologies at the FY2012 enacted level for the remainder of FY2013, subject to the BCA sequestration requirements.

The sequester will ultimately be applied at the program, project, and activity (PPA) level within each account. Because the sequester was implemented at the time that a temporary continuing resolution was in force, the reductions were calculated on an annualized basis and will be apportioned throughout the remainder of the fiscal year. Although full-year FY2013 funding has been enacted, the effect of these reductions on the funding amounts that will ultimately be available for energy technology programs at either the account or PPA level remain unclear until further guidance is provided by the Office of Management and Budget (OMB) on how agencies should apply these reductions.

In addition, the House-passed FY2014 Energy and Water Development appropriations bill (H.R. 2609, Title V) proposes to rescind \$157 million of unobligated prior-year balances from within the DOE Energy Efficiency and Renewable Energy account.³

¹ For more details, see CRS Report R42498, *Energy and Water Development: FY2013 Appropriations*, coordinated by Carl E. Behrens.

² The American Taxpayer Relief Act (ATRA, P.L. 112-240), enacted on January 2, 2013, made a number of significant changes to the procedures in the BCA that apply during FY2013.

³ H.Rept. 113-135, p. 87.

I. Department of Energy Office of Energy Efficiency and Renewable Energy

Renewable Energy

Biomass

1. Bioenergy Technologies Program (formerly the Biomass and Biorefinery Systems R&D Program)

- Administered by: Office of Energy Efficiency and Renewable Energy (EERE)
- Authorization: Federal Nonnuclear Energy Research and Development Act of 1974 (P.L. 93-577); Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163); Energy Conservation and Production Act of 1976 (ECPA; P.L. 94-385); Department of Energy Organization Act of 1977 (P.L. 95-91); Energy Tax Act (P.L. 95-618); National Energy Conservation Policy Act of 1978 (NECPA; P.L. 95-619); Powerplants and Industrial Fuel Use Act of 1978 (P.L. 95-620); Energy Security Act of 1980 (P.L. 96-294); National Appliance Energy Conservation Act of 1987 (P.L. 100-12); Federal Energy Management Improvement Act of 1988 (P.L. 100-615); Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (P.L. 101-218); Clean Air Act Amendments of 1990 (P.L. 101-549); Solar, Wind, Waste, and Geothermal Power Production Incentives Act of 1990 (P.L. 101-575); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Biomass Research and Development Act of 2000 (Title III of Agricultural Risk Protection Act of 2000; P.L. 106-224); Farm Security and Rural Investment Act of 2002 (P.L. 107-171); Healthy Forest Restoration Act of 2003 (P.L. 108-148); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); The Food, Conservation, and Energy Act of 2008 (P.L. 110-234); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$89.8 million for FY2006; \$196.3 million for FY2007; \$195.6 million for FY2008; \$214 million for FY2009; an additional \$777 million in FY2009 from ARRA; \$220 million for FY2010; \$180 million for FY2011; \$195 million for FY2012; \$200.5 million for FY2013; and \$282 million requested for FY2014
- Scheduled termination: None
- Description: This program works with industrial partners, national laboratories, universities, and other stakeholders to develop the technologies and systems needed to cost-effectively transform the nation's renewable and abundant domestic biomass resources into clean, affordable, and sustainable biofuels, bioproducts, and biopower. In recent years, the program has been primarily geared toward development and deployment of ethanol from non-food feedstocks, but is now expanding its scope to additional alternative fuels, such as bio-butanol, green gasoline, jet fuel, and diesel.

- Qualified applicant: Colleges and universities; profit organizations
- Qualified technologies: Biomass
- For more information: See CRS Report R42566, *Alternative Fuel and Advanced Vehicle Technology Incentives: A Summary of Federal Programs*, by Lynn J. Cunningham et al.; DOE's Bioenergy Technologies Program overview; DOE's Bioenergy Technologies Office – Financial Opportunities online resource; and program number 81.087 at the *Catalog of Federal Domestic Assistance* (CFDA) website

2. Regional Biomass Energy Grant Programs

- Administered by: Bioenergy Technologies Office, EERE
- Authorization: Department of Energy Organization Act of 1977 (P.L. 95-91); Energy and Water Development Appropriations Act for FY1987 (P.L. 99-500)
- Annual funding: \$395,000 for FY2007; an estimated \$75,131 for FY2008; an estimated \$25,705 for FY2009; an estimated \$4.8 million for FY2010; \$0 for FY2011; \$0 for FY2012; \$0 for FY2013; data for FY2014 is currently unavailable
- Scheduled termination: None
- Description: This program provides assistance to increase America's use of fuels, chemicals, materials, and power made from domestic biomass on a sustainable basis. Assistance may be used to develop and transfer any of several biomass energy technologies to the scientific and industrial communities. For regional programs, such technologies will be appropriate for the needs and resources of particular regions of the United States.
- Qualified applicants: State and local governments; colleges and universities; profit organizations; nonprofit organizations
- Qualified technologies: Biomass
- For more information: See program number 81.079 at the CFDA website

Geothermal

3. Geothermal Technologies Program (GTP)

- Administered by: EERE
- Authorization: Geothermal Energy Research, Development, and Demonstration Act (P.L. 93-410); Department of Energy Organization Act (P.L. 95-91); Energy Tax Act of 1978 (P.L. 95-618); Energy Security Act of 1980 (P.L. 96-294); Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (P.L. 101-218); Solar, Wind, Waste, and Geothermal Power Production Incentives Act of 1990 (P.L. 101-575); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)

- Annual funding: \$68.2 million for FY2006; \$5 million for FY2007; \$19.3 million for FY2008; \$43.3 million for FY2009; an additional \$393 million appropriated in FY2009 from ARRA; \$44 million for FY2010; \$37 million for FY2011; \$37 million for FY2012; \$38.1 million for FY2013; and \$60 million requested for FY2014
- Scheduled termination: None
- Description: This program partners the federal government with industry, academia, and research facilities to further the development of geothermal energy technologies. Competitive solicitations issued as Funding Opportunity Announcements (FOAs) are the principal mechanism used by the GTP to contract for cost-shared research, development, and demonstration projects.
- Qualified applicants: Profit organizations; colleges and universities
- Qualified technology: Geothermal
- For more information: See EERE's Geothermal Technologies Program website; and program number 81.087 at the CFDA website

Hydrogen and Fuel Cells

4. Hydrogen & Fuel Cell Technologies Program

- Administered by: EERE
- Authorization: Federal Energy Administration Act of 1974 (P.L. 93-275); Federal Nonnuclear Energy Research and Development Act of 1974 (P.L. 93-577); Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163); Electric and Hybrid Vehicle Research, Development and Demonstration Act (P.L. 94-413); Department of Energy Organization Act of 1977 (P.L. 95-91); Automotive Propulsion Research and Development Act of 1978 (Title III of Department of Energy Act of 1978-Civilian Applications; P.L. 95-238); Methane Transportation Research, Development and Demonstration Act of 1980 (P.L. 96-512); Energy Security Act of 1980 (P.L. 96-294); Alternative Motor Fuels Act of 1988 (P.L. 100-494); Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 (P.L. 101-566); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Hydrogen Future Act of 1996 (P.L. 104-271); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$153.4 million for FY2006; \$190 million for FY2007; \$206.2 million for FY2008; \$164.6 million for FY2009; an additional \$43 million appropriated in FY2009 from ARRA; \$174 million for FY2010; \$95.8 million for FY2011; \$101.3 million for FY2012; \$104.3 million for FY2013; and \$100 million requested for FY2014
- Scheduled termination: None
- Description: This program partners with industry, academia, and national laboratories and works in close coordination with Vehicle Technologies and other programs at DOE to: overcome technical barriers through R&D of hydrogen

production, delivery, and storage technologies; overcome technical barriers to fuel cell technologies for transportation, distributed stationary power, and portable power applications; address safety issues and facilitate the development of model codes and standards; validate and demonstrate hydrogen and fuel cells in real-world conditions; and educate key stakeholders whose acceptance of these technologies will determine their success in the marketplace.

- Qualified applicants: Federal government; national laboratories; colleges and universities; and profit organizations
- Qualified technologies: Hydrogen and fuel cells
- For more information: See EERE's Hydrogen and Fuel Cell Technologies website; and program number 81.087 at the CFDA website

Solar

5. Solar Energy Technologies Program (SETP)

- Administered by: EERE
- Authorization: Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163); Energy Conservation and Production Act of 1976 (ECPA; P.L. 94-385); Department of Energy Organization Act of 1977 (P.L. 95-91); Solar Photovoltaic Energy Research, Development and Demonstration Act of 1984 (P.L. 95-590); National Energy Conservation Policy Act of 1978 (NECPA; P.L. 95-619); Energy Security Act of 1980 (P.L. 96-294); Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (P.L. 101-218); Solar, Wind, Waste, and Geothermal Power Production Incentives Act of 1990 (P.L. 101-575); Solar, Wind, Waste, and Geothermal Power Production Incentives Technical Amendments Act of 1991 (P.L. 102-46); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$81.8 million for FY2006; \$157 million for FY2007; \$166.3 million for FY2008; \$172.4 million for FY2009; an additional \$116 million appropriated in FY2009 from ARRA; \$247 million for FY2010; \$259.6 million for FY2011; \$284.7 million for FY2012; \$290.7 million for FY2013; and \$356 million requested for FY2014
- Scheduled termination: None
- Description: SETP partners with industry, national laboratories, and universities to develop and bring reliable and affordable solar energy technologies to the marketplace. This program finances R&D in four major subprograms: Photovoltaics (PV); Concentrating Solar Power (CSP); Systems Integration for Solar Technologies; and Market Transformation for Solar Technologies.
- Qualified applicants: Industry; national laboratories; colleges and universities
- Qualified technology: Solar

- For more information: See EERE's Solar Energy Technologies Program website; and program number 81.087 at the CFDA website

Water Power

6. Water Power Program (formerly Wind and Hydropower Technologies Program)

- Administered by: EERE
- Authorization: Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163); Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (P.L. 101-218); Solar, Wind, Waste, and Geothermal Power Production Incentives Act of 1990 (P.L. 101-575); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$495,000 for FY2006; \$0 for FY2007; \$9.7 million for FY2008; \$39.1 million for FY2009; an additional \$31.7 million appropriated in FY2009 from ARRA; \$50 million for FY2010; \$29.2 million for FY2011; \$58.1 million for FY2012; \$59.1 million for FY2013; and \$55 million requested for FY2014
- Scheduled termination: None
- Description: This program partners with the national laboratories, industry, universities, and other federal agencies to promote the development and deployment of technologies capable of generating environmentally sustainable and cost-effective electricity from the nation's water resources (both conventional and marine and hydrokinetic technologies).
- Qualified applicants: Federal, state, local, and tribal governments; national laboratories; industry; small businesses; colleges and universities
- Qualified technologies: Hydroelectric; hydrokinetic energy; wave energy; tidal energy; ocean thermal energy conversion
- For more information: See EERE's Water Power Program; or program number 81.087 at the CFDA website

Wind Energy Program

7. Wind Energy Program (formerly Wind and Hydropower Technologies Program) Administered by: EERE

- Authorization: Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163); Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (P.L. 101-218); Solar, Wind, Waste, and Geothermal Power Production Incentives Act of 1990 (P.L. 101-575); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)

- Annual funding: \$38.3 million for FY2006; \$48.7 million for FY2007; \$49 million for FY2008; \$54.4 million for FY2009; an additional \$106.9 million appropriated in FY2009 from ARRA; \$80 million for FY2010; \$78.8 million for FY2011; \$91.8 million for FY2012; \$93.8 million for FY2013; and \$144 million requested for FY2014
- Scheduled termination: None
- Description: This program partners with federal, state, and other stakeholder groups to conduct research and development activities through competitively selected, cost-shared research and development projects with industry to improve the performance, lower the costs, and accelerate the deployment of wind energy technologies.
- Qualified applicants: Federal, state, local, and tribal governments; national laboratories; industry; small businesses; colleges and universities
- Qualified technologies: Wind
- For more information: See EERE's Wind Energy Program website; and program number 81.087 at the CFDA website

Energy Efficiency

Buildings

8. Building Technologies Program

- Administered by: EERE
- Authorization: Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163); Energy Conservation and Production Act of 1976 (ECPA; P.L. 94-385); Department of Energy Organization Act of 1977 (P.L. 95-91); Energy Tax Act of 1978 (P.L. 95-618); National Energy Conservation Policy Act of 1978 (NECPA; P.L. 95-619); Power Plant and Industrial Fuel Use Act of 1978 (P.L. 95-620); Energy Security Act (P.L. 96-294); National Appliance Energy Supply Act of 1987 (P.L. 100-12); National Appliance Energy Conservation Amendments of 1988 (P.L. 100-357); Federal Energy Management Improvement Act of 1988 (P.L. 100-615); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$68.2 million for FY2006; \$103 million for FY2007; \$107.4 million for FY2008; \$138.1 million for FY2009; an additional \$319.2 million appropriated in FY2009 from ARRA; \$222 million for FY2010; \$207.3 million for FY2011; \$214.7 million for FY2012; \$220.5 million for FY2013; and \$300 million requested for FY2014
- Scheduled termination: None
- Description: In partnership with the private sector, state and local governments, national laboratories, and universities, the Building Technologies Program works

to improve the efficiency of buildings and the equipment, components, and systems within them. The program supports research and development (R&D) activities and provides tools, guidelines, training, and access to technical and financial resources.

- Qualified applicants: State and local governments; universities; national laboratories
- Qualified technologies: Energy-efficient innovations for building envelopes, equipment, lighting, daylighting, and windows; passive solar; photovoltaics; fuel cells; advanced sensors and controls; and combined heating, cooling, and power systems
- For more information: See EERE's Building Technologies Program website

9. Weatherization Assistance Program (WAP)

- Administered by: EERE
- Authorization: Energy Supply and Production Act of 1976 (ECPA; P.L. 94-385); National Energy Conservation Policy Act of 1978 (NECPA; P.L. 95-619); Energy Security Act of 1980 (P.L. 96-294); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$227.2 million for FY2008; \$450 million for FY2009; an additional \$5 billion appropriated in FY2009 from ARRA; \$270 million for FY2010; \$171 million for FY2011; \$68 million for FY2012; \$68.4 million for FY2013; and \$184 million requested for FY2014
- Scheduled termination: None
- Description: This program reduces energy costs for low-income households by increasing the energy efficiency of their homes while ensuring their health and safety. DOE provides funding and technical guidance to states, which manage the day-to-day details of the program. Low-income families receive services from a network of more than 900 local weatherization service providers who install energy efficiency measures in the homes of qualifying homeowners free of charge.
- Qualified applicants: State and tribal governments, including U.S. territories
- Qualified technologies: Weatherization technologies include a wide range of energy efficiency measures for retrofitting homes and apartment buildings. Weatherization service providers choose the best package of efficiency measures for each home based on an energy audit of the home. Typical measures may include installing insulation, sealing ducts, tuning and repairing heating and cooling systems and if indicated, replacement of the same; mitigating air infiltration; and reducing electric base load consumption.
- For more information: See EERE's Weatherization Assistance Program website; and program number 81.042 at the CFDA website

Industrial

10. Advanced Manufacturing Office (AMO, formerly the Industrial Technologies Program - ITP)

- Administered by: EERE
- Authorization: Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163); Energy Conservation and Production Act of 1976 (ECPA; P.L. 94-385); Department of Energy Organization Act of 1977 (P.L. 95-91); National Energy Conservation Policy Act of 1978 (NECPA; P.L. 95-619); Powerplant and Industrial Fuel Use Act of 1978 (P.L. 95-620); Energy Security Act of 1980 (P.L. 96-294); Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (P.L. 101-218); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$55.9 million for FY2006; \$55.8 million for FY2007; \$63.2 million for FY2008; \$88.2 million for FY2009; an additional \$261.5 million appropriated in FY2009 from ARRA; \$96 million for FY2010; \$105.9 million for FY2011; \$112.7 for FY2012; \$116.3 million for FY2013; and \$365 million requested for FY2014
- Scheduled termination: None
- Description: AMO works with industry to improve industrial energy efficiency and environmental performance while increasing productivity by: conducting R&D on new energy efficient technologies; supporting commercialization of emerging technologies; providing plants with access to proven technologies, energy assessments, software tools, and other resources; and promoting energy and carbon management in industry.
- Qualified applicants: Industrial organizations
- Qualified technologies: Crosscutting technologies that improve the efficiency of technologies that are common to many industrial processes and can benefit multiple industries. Crosscutting technology R&D areas include combustion; distributed energy; energy intensity processes; fuel and feedstock liability; industrial materials for the future; nanomanufacturing; and sensors and automation.
- For more information: See EERE's Advanced Manufacturing Office website

11. Inventions and Innovations Program

- Administered by: EERE
- Authorization: Federal Nonnuclear Energy Research and Development Policy Act (P.L. 93-577), Section 14; 42 USC 5913
- Annual funding: \$2.8 million for FY2007; \$145,000 for FY2008; \$1.8 million for FY2009; \$3 million for FY2010; \$0 for FY2011; \$940,000 for FY2012; an

estimated \$914,000 for FY2013; the FY2014 budget request does not provide details on this program

- Scheduled termination: None
- Description: This program provides financial and technical assistance for research and development of innovative, energy-saving ideas and inventions with future commercial market potential. Inventions and Innovations support energy efficiency and renewable energy technology development in focus areas that align with Office of Energy Efficiency and Renewable Energy programs.
- Qualified applicants: Individuals; small businesses
- Qualified technologies: Specific energy efficiency and renewable energy technologies not listed
- For more information: See program number 81.036 at the CFDA website. The U.S. Department of Energy's Inventions & Innovations website has been retired. To access information on financial opportunities and current solicitations, visit the Advanced Manufacturing Office's (formerly the Industrial Technologies Program's) financial opportunities website.

Vehicles

12. Vehicle Technologies Program

- Administered by: EERE
- Authorization: Department of Energy Organization Act of 1977 (P.L. 95-91); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$178.4 million for FY2006; \$183.6 million for FY2007; \$208.4 million for FY2008; \$267.1 million for FY2009; an additional \$2.8 billion appropriated in FY2009 from ARRA; \$311.4 million for FY2010; \$293.2 million for FY2011; \$321 million for FY2012; \$330.8 million for FY2013; and \$575 million requested for FY2014
- Scheduled termination: None
- Description: The Vehicle Technologies Program works with industry leaders to develop and deploy advanced transportation technologies that could achieve significant improvements in vehicle fuel efficiency and displace oil with other fuels that ultimately can be domestically produced in a clean and cost-competitive manner. Program activities include research, development, demonstration, testing, technology validation, technology transfer, and education.
- Qualified applicants: Industry; colleges and universities; federal, state and local governments; national laboratories
- Qualified technologies: Hybrid electric systems; biofuels or fuels technology; advanced internal combustion engines; advanced propulsion materials

- For more information: See EERE's Vehicle Technology Program website; and EERE's Vehicle Technologies Program Factsheet

Other Energy Efficiency and Renewable Energy Programs

13. Conservation Research and Development Grants

- Administered by: EERE
- Authorization: Federal Nonnuclear Energy Research and Development Act of 1974 (P.L. 93-577); Department of Energy Organization Act of 1977 (P.L. 95-91); Continuing Appropriations Act for FY1983 (P.L. 97-377); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$87.5 million for FY2008; \$203.7 million for FY2009; \$1.96 billion for FY2010; \$300 million for FY2011; \$188.3 million for FY2012; an estimated \$75.1 million for FY2013; the FY2014 budget request does not provide details on this program
- Scheduled termination: None
- Description: This program provides project grants to conduct balanced, long-term research efforts in buildings technologies, industrial technologies, vehicle technologies, and hydrogen and fuel cell technologies.
- Qualified applicant: State, local, and tribal governments; universities; profit organizations; and private nonprofit institutions/organizations
- Qualified technologies: Hydrogen and fuel cells; energy efficient technologies; advanced battery manufacturing
- For more information: See program number 81.086 at the CFDA website

14. Energy Efficiency and Renewable Energy Information Dissemination, Outreach, Training, and Technical Analysis/Assistance Grant Program

- Administered by: EERE
- Authorization: Energy Reorganization Act of 1974 (P.L. 93-438); Department of Energy Organization Act of 1977 (P.L. 95-91); Energy Policy Act of 1992 (EPACT; P.L. 102-486)
- Annual funding: \$30 million for FY2007; \$39.7 million for FY2008; \$38 million for FY2009; \$80.4 million for FY2010; an estimated \$15 million for FY2011; \$32.2 million for FY2012; an estimated \$8.6 million for FY2013; the FY2014 budget request does not provide details on this program
- Scheduled termination: None
- Description: This program provides financial assistance for information dissemination, outreach, training and related technical analysis/assistance that will (1) stimulate increased energy efficiency in transportation, buildings, industry and the Federal sector and encourage increased use of renewable and alternative energy; and (2) accelerate the adoption of new technologies to

increase energy efficiency and the use of renewable and alternative energy through the competitive solicitation of applications.

- Qualified applicants: State and local governments; Native American organizations; individuals; universities; profit organizations; private nonprofit organizations; public nonprofit organizations; and Alaskan Native corporations
- Qualified technologies: Specific energy efficiency and renewable energy technologies not listed
- For more information: See program number 81.117 at the CFDA website

15. Energy Efficiency and Renewable Energy Technology Deployment, Demonstration, and Commercialization Grant Program

- Administered by: EERE
- Authorization: Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual Funding: \$0 for FY2008; \$21.8 million for FY2009; an estimated \$7.2 million for FY2010. It is anticipated that all funds obligated under this program in FY2010 will be Recovery Act funds. \$1 million for FY2011; \$0 for FY2012; \$0 for FY2013; the FY2014 budget request does not provide details on this program
- Scheduled termination: None
- Description: This program provides financial assistance for the technology deployment, demonstration, and commercialization of energy efficiency and renewable energy technologies. This includes biomass, building technologies, federal energy management, geothermal technologies, projects involving hydrogen, fuel cells and infrastructure technologies, industrial technologies, solar energy technologies, vehicle technologies, weatherization and intergovernmental technologies, and wind and hydropower technologies.
- Qualified applicants: State governments; profit organizations
- Qualified technologies: Biomass; geothermal; hydrogen and fuel cell technologies; solar; hydropower
- For more information: See program number 81.129 at the CFDA website

16. Renewable Energy Production Incentive (REPI)

- Administered by: EERE
- Authorization: Energy Policy Act of 1992 (EPACT; P.L. 102-486), Title XII, Section 1212; Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58), Title II, Subtitle A, Section 202); 42 USC 13317

- Annual funding: \$4.95 million for FY2006; \$4.95 million for FY2007; \$4.95 million for FY2008; \$5 million for FY2009; \$0 for FY2010; \$0 for FY2011; \$0 for FY2012; \$0 for FY2013; and \$0 requested for FY2014
- Scheduled termination: End of FY2026
- Description: This program provides incentive payments for electricity generated and sold by new qualifying renewable energy facilities. Qualifying systems are eligible for annual incentive payments of 1.5¢ per kilowatt-hour in 1993 dollars (indexed for inflation) for the first 10-year period of their operation, subject to the availability of annual appropriations in each federal fiscal year of operation.
- Qualified applicants: State, local, and tribal governments; public utilities; not-for-profit electrical cooperatives; Native American corporations
- Qualified technologies: Solar thermal electric; photovoltaics; landfill gas; wind; biomass; geothermal electric; anaerobic digestion; tidal energy; wave energy; ocean thermal
- For more information: See EERE's Renewable Energy Production Incentive Program website

17. Renewable Energy Research and Development Program

- Administered by: EERE
- Authorization: Department of Energy Organization Act of 1977 (P.L. 95-91); Department of Energy Act of 1978 - Civilian Applications (P.L. 95-238), Section 207; Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (P.L. 101-218); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 111-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$520 million for FY2008; \$472.8 million for FY2009; \$2.3 billion for FY2010 from ARRA funds; \$114.7 million for FY2011; \$233.2 million for FY2012; an estimated \$141.5 million for FY2013; the FY2014 budget request does not provide details on this program. Breakdown of additional funds appropriated from ARRA:
 - Biomass—\$800 million
 - Geothermal—\$400 million
 - Hydrogen/Fuel Cell—\$43.4 million
 - Solar—\$117.6 million
 - Wind and Hydropower—\$118 million
- Scheduled termination: None
- Description: This program provides financial assistance to conduct balanced research and development efforts in the following energy technologies: solar, biomass, hydrogen, fuel cells and infrastructure, wind and hydropower, hydrogen, and geothermal. Assistance may be used to develop and transfer

renewable energy technologies to the scientific and industrial communities, states, and local governments.

- Qualified applicants: State, local, and tribal governments; colleges and universities; profit organizations; private nonprofit organizations
- Qualified technologies: Solar; biomass; hydrogen; fuel cells; wind; hydropower; geothermal
- For more information: See program number 81.087 at the CFDA website

18. State Energy Program (SEP)

- Administered by: EERE
- Authorization: Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163); Energy Supply and Production Act of 1976 (ECPA; P.L. 94-385); National Energy Conservation Policy Act of 1978 (NECPA; P.L. 95-619); State Energy Efficiency Programs Improvement Act of 1990 (P.L. 101-440); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Conservation Reauthorization Act of 1998 (P.L. 105-388); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$44.1 million for FY2008; \$50 million for FY2009; an additional \$3.1 billion appropriated in FY2009 from ARRA; \$50 million for FY2010; \$50 million for FY2011; \$50 million for FY2012; \$50.3 million for FY2013; and \$57 million requested for FY2014
- Scheduled termination: None
- Description: SEP provides grants to states to design and carry out their own renewable energy and energy efficiency programs.
- Qualified applicants: State and tribal governments, including U.S. territories
- Qualified technologies: Emerging renewable energy and energy efficiency technologies
- For more information: See EERE's State Energy Program website; and program number 81.041 at the CFDA website

19. Tribal Energy Program

- Administered by: EERE
- Authorization: Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163); Energy Conservation and Production Act of 1976 (ECPA; P.L. 94-385); Department of Energy Organization Act of 1977 (P.L. 95-91); Energy Tax Act of 1978 (P.L. 95-618); National Energy Conservation Policy Act of 1978 (NECPA; P.L. 95-619); Power Plant and Industrial Fuel Use Act of 1978 (P.L. 95-620); Energy Security Act (P.L. 96-294); National Appliance Energy Supply Act of 1987 (P.L. 100-12); Federal Energy Management Improvement Act of 1988 (P.L. 100-615); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of

2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)

- Annual funding: \$3.96 million for FY2006; \$3.96 million for FY2007; \$5.95 million for FY2008; \$6 million for FY2009; \$10 million for FY2010; \$7 million for FY2011; \$10 million for FY2012; \$10.1 for FY2013; and \$7 million requested for FY2014
- Scheduled termination: None
- Description: This program promotes tribal energy sufficiency, economic growth, and employment on tribal lands through the development of renewable energy and energy efficiency technologies. The program provides financial assistance, technical assistance, education and training to tribes for the evaluation and development of renewable energy resources and energy efficiency measures.
- Qualified applicant: Tribal governments
- Qualified technologies: Energy efficient technologies: clothes washers; refrigerators/freezers; water heaters; lighting; lighting controls/sensors; chillers; furnaces; boilers; air conditioners; programmable thermostats; energy management; systems/building controls; caulking/weather-stripping; duct/air sealing; building insulation; windows; doors; siding; roofs; comprehensive measures/whole building; and other energy efficiency improvements may be eligible. Renewable energy technologies: passive solar space heat; solar water heat; solar space heat; photovoltaics; wind; biomass; hydroelectric; geothermal electric; geothermal heat pumps
- For more information: See EERE's Tribal Energy Program website <http://apps1.eere.energy.gov/tribalenergy/>; and DSIRE's program summary for the Tribal Energy Program

Other DOE Offices/Cross-Cutting Programs

20. Advanced Research Projects Energy Financial Assistance Program (ARPA-E)

- Administered by: Advanced Research Projects Agency-Energy (ARPA-E)
- Authorization: America COMPETES Act (P.L. 110-69), Section 5012
- Annual funding: \$15 million for FY2009; an additional \$388.9 million in FY2009 from ARRA; \$0 for FY2010; \$165.6 million for FY2011; \$275 million for FY2012; \$276.7 million for FY2013; and \$379 million requested for FY2014
- Scheduled termination: After ARPA-E has been in operation for six years, the Secretary of Energy shall offer to enter into a contract with the National Academy of Sciences under which the National Academy shall conduct an evaluation of how well ARPA-E is achieving the goals and mission of ARPA-E. The evaluation shall include the recommendation of the National Academy of Sciences on whether ARPA-E should be continued or terminated.
- Description: This program will fund organizations that have proposed sophisticated energy technology R&D projects that (1) translate scientific discoveries and cutting-edge inventions into technological innovations and (2)

accelerate transformational technological advances in areas that industry by itself is not likely to undertake because of high technical or financial risk.

Transformational energy technologies are those that have the potential to create new paradigms in how energy is produced, transmitted, used, or stored.

- Qualified applicants: ARPA-E welcomes submissions from any type of capable technology research and development entity. This includes, but is not limited to for-profit entities, academic institutions, research foundations, not-for-profit entities, collaborations, and consortia. The lead organization that will enter into the agreement with ARPA-E must be a U.S. entity.
- Qualified technologies: Transformational energy technologies
- For more information: See ARPA-E's Frequently Asked Questions (FAQ) website; and program number 81.135 at the CFDA website

21. Electricity Delivery and Energy Reliability, Research, Development and Analysis Grant Program (Office of Electricity Delivery and Energy Reliability - OE)

- Administered by: Office of Electricity Delivery and Energy Reliability (OE)
- Authorization: Department of Energy Organization Act of 1977 (P.L. 95-91); Energy Security Act of 1980 (P.L. 96-294); National Superconductivity and Competitiveness Act of 1988 (P.L. 100-697); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$82.8 million for FY2008; \$83.1 million for FY2009; an additional \$4.5 billion was appropriated to the Office of Electricity Delivery and Energy Reliability in FY2009 from ARRA. Approximately \$4 billion of that total was used to implement smart grid programs authorized by EISA and accelerate the deployment of smart grid technologies across the transmission and distributions⁴; \$121.4 million for FY2010; \$102 million for FY2011; \$96.2 million for FY2012; \$99.8 million for FY2013; and \$119.4 million requested for FY2014
- Scheduled termination: None
- Description: This grant program aims to develop cost-effective technology that enhances the reliability, efficiency, and resiliency of the electric grid.
- Qualified applicants: State, local, and tribal governments; universities; profit organizations; private nonprofit organizations; research organizations
- Qualified technologies: Specific technologies not listed
- For more information: See program number 81.122 at the CFDA website

⁴ For more information, see Department of Energy, *FY2011 Congressional Budget Request*, vol. 3, p. 500, at [http://www.cfo.doe.gov/budget/11budget/Content/Volume 3.pdf](http://www.cfo.doe.gov/budget/11budget/Content/Volume%203.pdf).

22. Federal Energy Management Program (FEMP)

- Administered by: EERE
- Authorization: Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163); Energy Conservation and Production Act of 1976 (ECPA; P.L. 94-385); Department of Energy Organization Act (P.L. 95-91); National Energy Conservation Policy Act of 1978 (NECPA; P.L. 95-619); Federal Energy Management Improvement Act of 1988 (P.L. 100-615); Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Independence and Security Act of 2007 (EISA; P.L. 110-140)
- Annual funding: \$19 million for FY2006; \$19.5 million for FY2007; \$19.8 million for FY2008; \$22 million for FY2009; an additional \$22.4 million in FY2009 from ARRA; \$32 million for FY2010; \$30.4 million for FY2011; \$29.9 million for FY2012; \$30.1 million for FY2013; and \$36 million requested for FY2014
- Scheduled termination: None
- Description: FEMP assists federal agencies in developing and implementing energy efficient and renewable energy resources to meet energy management regulations and goals.
- Qualified applicants: Federal agencies
- Qualified technologies: Energy efficient technologies; solar; wind; incremental hydro; ocean; biomass; geothermal
- For more information: See EERE's Federal Energy Management Program website

23. Financial Assistance Program (Office of Science)

- Administered by: Office of Science
- Authorization: Atomic Energy Act of 1954 (P.L. 83-703), Section 31; Energy Reorganization Act of 1974 (P.L. 93-438), Title I, Section 107; Federal Nonnuclear Energy Research and Development Act of 1974 (P.L. 93-577); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$974 million for FY2008; \$1.4 billion for FY2009; \$1.3 billion for FY2010; \$1.3 billion for FY2011; \$1 billion for FY2012; an estimated \$962.6 million for FY2013; and an estimated \$962.6 million for FY2014
- Scheduled termination: None
- Description: This program provides financial support for fundamental research in the basic sciences and advanced technology concepts and assessments in fields related to energy.
- Qualified applicants: State, local, and tribal governments; colleges and universities; profit commercial organizations; private nonprofit organizations; public nonprofit organizations; small businesses
- Qualified technologies: Specific advanced technologies not listed

- For more information: See program number 81.049 at the CFDA website; and the Office of Science's Funding Opportunities website

24. Loan Guarantee Program (Office of the Chief Financial Officer)

- Administered by: Office of the Chief Financial Officer
- Authorization: Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58), Title XVII; American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5); 42 USC 16511 et seq.
- Annual funding:
 - Section 1703 Innovative Technology Loan Guarantee Program (permanent): \$4.5 million for FY2008; \$0 for FY2009; \$0 for FY2010; \$169.6 million for FY2011; \$0 for FY2012; \$0 for FY2013; and \$0 requested for FY2014
 - Section 1705 Temporary Loan Guarantee Program: \$0 for FY2008; \$6 billion was appropriated for FY2009. However, \$2 billion of that funding was transferred to the "cash for clunkers" automobile trade-in program by P.L. 111-47.⁵ An additional \$1.5 billion was rescinded for the Education Jobs and Medicaid Assistance Act, P.L. 111-226 (Section 308), leaving a total of \$2.5 billion remaining from the FY2009 appropriations; \$0 for FY2010; \$0 for FY2011; \$0 for FY2012; and \$0 for FY2013
- Scheduled termination: None for the permanent (Section 1703) loan guarantee program. Projects authorized by the temporary loan guarantee (Section 1705) had to begin construction no later than September 30, 2011.
- Description: This program provides federal loan guarantees to encourage early commercial use in the United States of new or significantly improved technologies in energy projects that (1) avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; and (2) employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued. Temporary loan guarantees can also be made under Section 1705 for rapid deployment of certain renewable and electric transmission projects.
- Qualified applicants: State, local, and tribal governments; universities; profit organizations; and public nonprofit organizations. No federal entity may apply
- Qualified technologies: Solar thermal electric; solar thermal process heat; photovoltaics; wind; hydroelectric; renewable transportation fuels; geothermal electric; fuel cells; manufacturing facilities; daylighting; tidal energy; wave energy; ocean thermal; biodiesel
- For more information: See program number 81.126 at the CFDA website; DSIRE's program summary for the Loan Guarantee Program; and DOE's Loan Guarantee Program website

⁵ For more information, see CRS Report R40669, *Energy and Water Development: FY2010 Appropriations*, coordinated by Carl E. Behrens.

25. Small Business Innovation Research Program (SBIR)/Small Business Technology Transfer Program (STTR)

- Administered by: EERE
- Authorization: Small Business Innovation Development Act of 1982 (P.L. 97-219); Small Business Research and Development Act of 1992 (P.L. 102-564); Consolidated Appropriations Act, 2001 (P.L. 106-554), Title I, Small Business Innovation Research Program Reauthorization Act of 2000; Small Business Technology Transfer Program Reauthorization Act of 2001 (P.L. 107-50); SBIR/STTR Reauthorization Act of 2011 (P.L. 112-81, Div. E, Title L)
- Annual funding: \$24.2 million for FY2011; \$29.1 million for FY2012; \$33.3 million for FY2013; and \$52.1 million requested for FY2014
- Scheduled termination: The SBIR/STTR Reauthorization Act of 2011 (P.L. 112-81, Div. E, Title L) reauthorized the program through FY2017.
- Description: Small Business Innovation Research (SBIR) and Small Business Technology Transfers (STTR) are U.S. government programs in which federal agencies with large research and development (R&D) budgets set aside a small fraction of their funding for competitions among small businesses only. DOE's SBIR-STTR program is designed to stimulate technological innovation by small advanced technology firms and provide new, cost-effective scientific and engineering solutions to challenging problems. EERE funds appropriated for SBIR/STTR are allocated to larger EERE technology programs, detailed earlier in this report—including Biomass, Geothermal, Hydrogen & Fuel Cell, Solar Energy, Water Power; Wind Energy, Advanced Manufacturing, Building Technologies, and Vehicle Technologies.
- Qualified applicants: Small businesses
- Qualified technologies: Research areas include energy production (fossil, nuclear, renewable, and fusion energy); energy use (in buildings, vehicles, and industry); fundamental energy sciences (materials, life, environmental, and computational sciences, and nuclear and high energy physics); environmental management; and nuclear nonproliferation
- For more information: See EERE's Small Business Innovation Research/Small Business Technology Transfers (SBIR/STTR) website; and program number 10.212 (SBIR) at the CFDA website

II. U.S Department of the Treasury

Homeowner

1. Residential Energy Efficiency Tax Credit

- Administered by: Internal Revenue Service
- Authority: Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Improvement and Extension Act of 2008 (P.L. 110-343), Division B, Section 302;

American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5), Division B, Section 1121; American Taxpayer Relief Act of 2012 (P.L. 112-240); IRS Form 5695 & Instructions: Residential Energy Credits; 26 USC 25C

- Scheduled Termination: December 31, 2013
- Description: The credit applied to energy efficiency improvements in the building envelope of existing homes and for the purchase of high-efficiency heating, cooling and water-heating equipment. Efficiency improvements or equipment must have served a dwelling in the United States that is owned and used by the taxpayer as a primary residence. The maximum lifetime amount of homeowner credit for all improvements combined for 2011, 2012 and 2013 is \$500 total.
- Qualified applicant: Residential
- Qualifying technologies: Water heaters; furnace; boilers; heat pumps; air conditioners; building insulation; windows; doors; roofs; circulating fans used in a qualifying furnace; biomass and stoves that use qualified biomass fuel
- For more information: See the Internal Revenue Service website

2. Residential Renewable Energy Tax Credit

- Administered by: Internal Revenue Service
- Authority: Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Improvement and Extension Act of 2008 (P.L. 110-343); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5); IRS Form 5695 & Instructions: Residential Energy Credits; 26 USC 25D (amended)
- Scheduled Termination: December 31, 2016
- Description: A taxpayer may claim a credit of 30% of qualified expenditures for a system that serves a dwelling unit located in the United States and used as a residence by the taxpayer.
- Qualified applicant: Residential
- Qualifying technologies: Solar water heat; photovoltaics; wind; fuel cells; geothermal heat pumps; other solar electric technologies
- For more information: See IRS Form 5695 & Instructions: Residential Energy Credits

Business

3. Business Energy Investment Tax Credit

- Administered by: Internal Revenue Service
- Authority: Energy Improvement and Extension Act of 2008 (EISA; P.L. 110-343), Division B; American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5), Division B, Section 1103

- Scheduled termination: December 31, 2016. Geothermal property, with the exception of geothermal heat pumps, has no stated expiration date. The credit for solar energy property returns to 10% after December 31, 2016.
- Description: Credit is 30% for solar, fuel cells and small wind & federal renewable electricity production tax credit-eligible technologies; 10% for geothermal, microturbines and CHP (Combined Heat and Power).
- Qualified Applicants: Commercial; industrial; utilities; agricultural
- Qualified Technologies: Solar water heat; solar space heat; solar thermal electric; solar thermal process heat; photovoltaics; wind; biomass; geothermal electric; fuel cells; geothermal heat pumps; CHP/Cogeneration; solar hybrid lighting; direct-use geothermal; microturbines
- For more information: See the DSIRE website.

4. Energy Efficient Commercial Buildings Tax Deduction

- Administered by: Internal Revenue Service
- Authority: Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58), Title XIII, Subtitle C, Section 1331(a); Tax Relief and Health Care Act of 2006 (P.L. 109-432), Division A, Title II, Section 204; Energy Improvement and Extension Act of 2008 (P.L. 110-343), Division B, Title III, Section 303; 26 USC § 179D
- Scheduled termination: December 31, 2013
- Description: A tax deduction of \$1.80 per square foot is available to owners of new or existing buildings who install (1) interior lighting; (2) building envelope, or (3) heating, cooling, ventilation, or hot water systems that reduce the building's total energy and power cost by 50% or more in comparison to a building meeting minimum requirements set by ASHRAE Standard 90.1-2001. Energy savings must be calculated using qualified computer software approved by the IRS.
- Qualified applicants: Commercial; builder/developer; state government; federal government (deductions associated with government buildings are transferred to the designer)
- Qualified technologies: Equipment insulation; water heaters; lighting; lighting controls/sensors; chillers; furnaces; boilers; heat pumps; air conditioners; caulking/weather-stripping; duct/air sealing; building insulation; windows; doors; siding; roofs; comprehensive measures/whole building
- For more information: See the Energy Star website

5. Energy-Efficient New Homes Tax Credit for Home Builders

- Administered by: Internal Revenue Service
- Authority: Tax Technical Corrections Act of 2007 (P.L. 110-172), Section 11(a)(7); Energy Improvement and Extension Act (P.L. 110-343), Division B, Title III, Section 304; 26 USC § 45L 8/8/2005 (amended 2008); P.L. 111-312 (12/31/2011 extension)); American Taxpayer Relief Act of 2012 (P.L. 112-240).

- Scheduled termination: December 31, 2013
- Description: This program provided tax credits of up to \$2,000 for builders of all new energy-efficient homes, including manufactured homes constructed in accordance with the Federal Manufactured Homes Construction and Safety Standards. This credit was created by the Energy Policy Act of 2005 for homes constructed in 2006 and 2007. It was renewed for homes constructed in 2008 and 2009, but then it expired and was not active in 2010. The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (P.L. 111-312) retroactively reinstated this credit for homes acquired after December 31, 2009, and before January 1, 2012.
- Qualified applicant: Builder/developer
- Qualified technologies: Comprehensive measures/whole building
- For more information: See the IRS website; IRS Certification of Energy Efficient Home Credit Notice; and IRS Energy Efficient Home Credit; Manufactured Homes Notice

Industry

6. Energy Efficient Appliance Tax Credit for Manufacturers

- Administered by: Internal Revenue Service
- Authority: Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58), Title XIII, Subtitle C, Section 1334(a); Energy Improvement and Extension Act of 2008 (P.L. 110-343), Division B, Section 305; 26 USC § 45M subsequently amended; H.R. 4853, Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010; American Taxpayer Relief Act of 2012, (P.L. 112-240)
- Scheduled termination: December 31, 2013
- Description: A tax credit for each manufacturer is limited to a total of \$25 million for 2011, 2012 and 2013 combined.
- Qualified applicants: Industrial; appliance manufacturers
- Qualified technologies: Clothes washers; dishwashers; refrigerators
- For more information: See the IRS website; IRS form 8909

7. Qualifying Advanced Energy Manufacturing Investment Tax Credit (48C)

- Administered by: Internal Revenue Service
- Authority: American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5), Division B, Section 1302; 26 USC 48C; IRS Notice 2013-12 Qualifying Advanced Energy Project Credit Phase II.
- Scheduled termination: Applications are no longer being accepted. Phase II concept papers were due to the U.S. Department of Energy (DOE) by April 9, 2013. DOE will review concept papers and select which companies will be allowed to submit a full application. Applications were due July 23, 2013.

- Description: The U.S. Treasury Department, in consultation with DOE, is no longer accepting applications for this tax credit. The applications were due to DOE by September 16, 2009, with final applications due to DOE October 16, 2009. Only applicants accepted and ranked by the DOE were allowed to submit final applications to the Internal Revenue Service (IRS) by December 16, 2009. Approved projects were announced in January 2010.

This tax credit was designed to encourage a U.S.-based renewable energy manufacturing sector. Projects receiving awards are eligible for a tax credit of 30% of the qualified investment required for an advanced energy project.

- Qualified applicants: Commercial, industrial, manufacturing
- Qualifying technologies: Lighting; lighting controls/sensors; energy conservation technologies: smart grid; solar water heat; solar thermal electric; photovoltaics; wind; geothermal electric; fuel cells; geothermal heat pumps; batteries and energy storage; advanced transmission technologies that support renewable energy generation; renewable fuels; fuel cells using renewable fuels; microturbines
- For more information: See DOE's webpage for the 48C tax credit; the IRS' 48C webpage; and DSIRE's webpage for the tax credit

8. Renewable Electricity Production Tax Credit (PTC)

- Administered by: Internal Revenue Service
- Authority: Energy Policy Act of 1992 (EPACT; P.L. 102-486); Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58), Title XIII, Section 1301; Tax Relief and Health Care Act of 2006 (P.L. 109-432), Division A, Section 201; Energy Improvement and Extension Act of 2008 (P.L. 110-343); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5), Division B, Section 1101 and 1102; American Taxpayer Relief Act of 2012, (P.L. 112-240); IRS Notice 2013-29; 26 USC 45 (amended)
- Scheduled termination: Projects must begin construction by December 31, 2013
- Description: The federal renewable electricity Production Tax Credit (PTC) is a per-kilowatt-hour tax credit for electricity generated by qualified energy resources and sold by the taxpayer to an unrelated person during the taxable year. P.L. 112-240 (American Taxpayer Relief Act of 2012) extended the PTC through the end of 2013 and allowed projects that begin construction by the end of 2013 to qualify for the PTC. Previously, the law required that qualifying projects be placed in service before the PTC expiration date.
- Qualified applicants: Commercial; industrial
- Qualifying technologies: Landfill gas; wind; biomass; hydroelectric; geothermal electric; municipal solid waste; hydrokinetic power (i.e., flowing water); anaerobic digestion; small hydroelectric; tidal energy; wave energy; ocean thermal
- For more information: See the IRS website and DSIRE website

9. Residential Energy Conservation Subsidy Exclusion (Corporate)

- Administered by: Internal Revenue Service
- Authority: Energy Policy Act of 1992 (EPACT; P.L. 102-486), Section 1912; Small Job Protection Act of 1996 (P.L. 104-188), Section 1617; 26 USC 136 (amended)
- Scheduled termination: None
- Description: Energy conservation subsidies provided by public utilities, either directly or indirectly, are nontaxable: “Gross income shall not include the value of any subsidy provided (directly or indirectly) by a public utility to a customer for the purchase or installation of any energy conservation measure.”
- Qualified applicants: Residential; multi-family residential
- Qualifying technologies: Technologies installed to reduce electricity or natural gas consumption or improve the management of energy demand in a dwelling unit, including, but not limited to, solar water heat; solar space heat; photovoltaics; and other energy efficiency technologies not identified.
- For more information: See the IRS Publication 525 (2012), Taxable and Nontaxable Income website

10. Residential Energy Conservation Subsidy Exclusion (Personal)

- Administered by: Internal Revenue Service
- Authority: Energy Policy Act of 1992 (EPACT; P.L. 102-486); Small Job Protection Act of 1996 (P.L. 104-188), Section 1617; 26 USC 136 (amended)
- Scheduled termination: None
- Description: Energy conservation subsidies provided by public utilities, either directly or indirectly, are nontaxable: “Gross income shall not include the value of any subsidy provided (directly or indirectly) by a public utility to a customer for the purchase or installation of any energy conservation measure.”
- Qualified applicant: Residential; multi-family residential
- Qualifying technologies: Technologies installed to reduce electricity or natural gas consumption or improve the management of energy demand in a dwelling unit, including, but not limited to, solar water heat; solar space heat; photovoltaics; and other energy efficiency technologies not identified.
- For more information: See the IRS Publication 525 (2012), Taxable and Nontaxable Income website

State, Local and Tribal Governments

11. Qualified Energy Conservation Bonds (QECCBs)

- Administered by: Internal Revenue Service

- Authority: Energy Improvement and Extension Act of 2008 (P.L. 110-343), Division B, Section 301; American Recovery and Reinvestment Act of 2009, (ARRA; P.L. 111-5), Division B, Title I, Subtitle F, Part III, Section 1521(b)(1), (2), and Part IV, Section 1531(c)(2), and Part V, Section 1541(b)(2); 26 USC 54A ; 26 USC 54D; IRS Notice 2009-29; IRS Notice 2010-35; IRS Announcement 2010-54
- Scheduled termination: All funds have been allocated to the states. No new federal funding is available. There may be funding available in certain states.
- Description: QECBs may be used by state, local and tribal governments to finance certain types of energy projects. QECBs, as tax credit bonds, provide federally subsidized financing to all issuers. The original limit on the volume of energy conservation tax credit bonds to be issued by state and local governments was \$800 million. The American Recovery and Reinvestment Act of 2009 expanded the allowable bond volume to \$3.2 billion.
- Qualified applicants: State, local, and tribal governments
- Qualified technologies: Solar thermal electric; photovoltaics; landfill gas; wind; biomass; hydroelectric; geothermal electric; municipal solid waste; hydrokinetic power; anaerobic digestion; tidal energy; wave energy; ocean thermal
- For more information: See the DSIRE website; and CRS Report R41573, *Tax-Favored Financing for Renewable Energy Resources and Energy Efficiency*, by Molly F. Sherlock and Steven Maguire

Cross-Cutting

12. Modified Accelerated Cost-Recovery System (MACRS)

- Administered by: Internal Revenue Service
- Authority: Economic Recovery Tax Act of 1981 (P.L. 97-34); Economic Stimulus Act of 2008 (P.L. 110-185); American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5), Division B, Title I, Subtitle C, Part I, Section 1201(a)(1)-(2)(D), (3)(A), (b)(1); Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (P.L. 111-312); 26 USC 168; IRS Rev. Proc. 2011-26; American Taxpayer Relief Act of 2012 (P.L. 112-240)
- Scheduled termination: None. The five-year schedule for most types of solar, geothermal, and wind property has been in place since 1986.
- Description: Under MACRS, businesses may recover investments in certain property through depreciation deductions. The MACRS establishes a set of class lives for various types of property, ranging from three to 50 years, over which the property may be depreciated. A number of renewable energy technologies are classified as five-year property (26 USC 168(e)(3)(B)(vi)) under MACRS.
- Qualified applicants: Commercial; industrial
- Qualified technologies: Solar water heat; solar space heat; solar thermal electric; solar thermal process heat; photovoltaics; landfill gas; wind; biomass; renewable transportation fuels; geothermal electric; fuel cells; geothermal heat pumps;

municipal solid waste; CHP/cogeneration; solar hybrid lighting; direct use geothermal; anaerobic digestion; microturbines

- For more information: See IRS Publication 946, IRS Form 4562: Depreciation and Amortization, and Instructions for Form 4562

13. Alternative Motor Vehicle Credit

- Administered by: Internal Revenue Service
- Authority: Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Energy Improvement and Extension Act of 2008 (P.L. 110-343), Division B, Section 205; American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5), Division B, Sections 1141-1144
- Scheduled Termination: December 31, 2014 for fuel cell vehicles and qualified plug-in electric drive motor vehicles; expired December 31, 2011 or earlier for all other vehicles.
- Description: Enacted in the Energy Policy Act of 2005, the provision includes separate credits for four distinct types of vehicles: using fuel cells, advanced lean burn technologies, qualified hybrid technology or qualified alternative fuels technologies.
- Qualified applicant: Taxpayers
- Qualifying technologies: Hybrid gasoline-electric; diesel; battery-electric; alternative fuel and fuel cell vehicles; advanced lean-burn technology vehicles; plug-in hybrid electric vehicles
- For more information: See the IRS website for the Alternative Motor Vehicle Credit

III. Department of Agriculture

1. Assistance to High Energy Cost Rural Communities Program

- Administered by: Rural Development (RD)
- Authorization: Rural Electrification Act of 1936 (P.L. 74-605); Grain Standards and Warehouse Improvement Act of 2000 (P.L. 106-472)
- Annual funding: \$9.5 million for FY2012; and \$7.6 million for FY2013
- Scheduled termination: None
- Description: This program provides financial assistance to rural communities with extremely high energy costs (exceeding 275% of the national average).
- Qualified applicants: State, local, and tribal governments (including U.S. territories); for-profit businesses; non-profit businesses; cooperatives; individuals
- Qualified technologies: Not specifically identified
- For more information: See CFDA program number 10.859 and the USDA program website

2. Bioenergy Program for Advanced Biofuels

- Administered by: Rural Development
- Authorization: P.L. 110-234, Food, Conservation, and Energy Act of 2008, Title IX, section 9001, subsection 9005
- Annual Funding:
 - Mandatory Farm Bill authorization: \$55 million for FY2009; \$55 million for FY2010; \$85 million for FY2011; \$105 million for FY2012 was authorized to remain available until expended. P.L. 112-55 limits mandatory spending to \$65 million
 - Discretionary: \$25 million authorized for FY2009-FY2013; No discretionary funding has been appropriated through FY2013
- Scheduled Termination: Mandatory funding authorized through FY2013.
- Description: To support and ensure an expanding production of advanced biofuels by providing payments to eligible advanced biofuel producers.
- Qualified applicants: Eligible advanced biofuels producers
- Qualified technologies: Payments will be made to eligible advanced biofuel producers for the production of fuel derived from renewable biomass, other than corn kernel starch, to include biofuel derived from cellulose, hemicellulose, or lignin; biofuel derived from sugar and starch (other than ethanol derived from corn kernel starch); biofuel derived from waste material, including crop residue, other vegetative waste material, animal waste, food waste and yard waste; diesel-equivalent fuel derived from renewable biomass, including vegetable oil and animal fat; biogas (including landfill gas and sewage waste treatment gas) produced through the conversion of organic matter from renewable biomass; butanol or other alcohols produced through the conversion of organic matter from renewable biomass; and other fuel derived from cellulosic biomass
- For more Information: See program number 10.867 on the CFDA website; USDA program website; CRS Report R41985, *Renewable Energy Programs and the Farm Bill: Status and Issues*, by Randy Schnepf

3. Biomass Crop Assistance Program (BCAP; Sec. 9011)

- Administered by: Farm Services Agency (FSA)
- Authorization: Title IX of the Farm Security and Rural Investment Act of 2002 (FSRIA; P.L. 107-171) is amended by Title IX, Section 9001 of the Food, Conservation, and Energy Act of 2008 (P.L. 110-246), creating new Section 9011 under FSIRA
- Annual funding: Original mandatory funding authorization for FY2009-FY2012 authorizes “such sums as necessary.” The Supplemental Appropriations Act of 2010 (P.L. 111-212) limits mandatory spending on BCAP by allowing no more than \$552 million in FY2010 and \$432 million in FY2011. The Department of Defense and Full-Year Continuing Appropriations Act, 2011 (P.L. 112-10), further reduced BCAP funding for FY2011 to \$112 million. With respect to

FY2012 funding, the President's FY2012 budget proposed to limit funding for CHST to \$70 million. The remaining annual and establishment payment portion of BCAP would remain at such sums as necessary (SSAN). On June 16, 2011, the House passed an FY2012 appropriations bill (H.R. 2112) that would have eliminated funding for BCAP for FY2012. In contrast, the Senate FY2012 spending bill left BCAP mandatory spending untouched. In the final FY2012 Agriculture appropriations act (P.L. 112-55), BCAP mandatory spending was limited to \$17 million. Under ATRA, no new mandatory funding was included for BCAP; however, discretionary funding of \$20 million was authorized to be appropriated for FY2013.

- For more on these changes in mandatory program spending, see CRS Report R41245, *Reductions in Mandatory Agriculture Program Spending*, by Jim Monke and Megan Stubbs. For more information on the 2010 supplemental, see CRS Report R41255, *FY2010 Supplemental Appropriations for Agriculture*, by Jim Monke.
- Scheduled termination: Funding authorized through FY2013
- Description: BCAP provides assistance to support the production of eligible biomass crops on land within approved BCAP project areas. In exchange for growing eligible crops, the FSA will provide annual payments through 10- to 15-year contracts. Under these contracts up to 75% of establishment costs may also be provided. FSA will also provide matching payments to eligible material owners at a rate of \$1 for each \$1 per dry ton paid by a qualified biomass conversion facility. Payments may not exceed \$45 per ton for a two-year period and matching payments are available for no more than two years per participant.
- Qualified applicants: Eligible biomass material owners and eligible biomass producers
- Qualified technologies: Eligible material for a matching payment is renewable biomass, as defined by the 2008 farm bill, with several important exclusions including harvested grains, fiber or other commodities eligible to receive payments under the Commodity Title (Title I) of the 2008 farm bill (the residues of these commodities, however, are eligible and may qualify for payment); animal waste and animal waste by-products including fats, oils, greases and manure; food waste and yard waste; and algae. Eligible crops include renewable biomass, with the exception of crops eligible to receive a payment under Title I of the 2008 farm bill and plants that are invasive or noxious, or have the potential to become invasive or noxious.
- For more Information: See the USDA BCAP website; CRS Report R41985, *Renewable Energy Programs and the Farm Bill: Status and Issues*, by Randy Schnepf; and CRS Report R41296, *Biomass Crop Assistance Program (BCAP): Status and Issues*, by Randy Schnepf

4. Biorefinery Assistance Program (Sec. 9003)

- Administered by: Rural Development
- Authorization: Title IX of the Farm Security and Rural Investment Act of 2002 (FSRIA, P.L. 107-171) is amended by Title IX, Section 9001 of the Food,

Conservation and Energy Act of 2008 (P.L. 110-246) creating new Section 9003 under FSIRA

- Annual Funding:
 - Mandatory authorization: \$75 million for FY2009; \$245 million for FY2010. \$0 for FY2011; \$0 for FY2012; any mandatory funding unspent from the FY2010 allocation (\$245 million) remains available in FY2013.
 - Discretionary authorization: \$150 million authorized annually for FY2009-FY2013. No discretionary funding has been appropriated for BAP through FY2013.
- Scheduled Termination: Funding authorized through FY2013
- Description: The purpose is to assist in the development of new and emerging technologies for the development of advanced biofuels, so as to increase the energy independence of the United States; promote resource conservation, public health, and the environment; diversify markets for agricultural and forestry products and agriculture waste material; and create jobs and enhance the economic development of the rural economy. Loan guarantees are made to fund the development, construction, and retrofitting of commercial-scale biorefineries using eligible technology. The maximum loan guarantee is \$250 million.
- Qualified applicants: Individuals, tribal entities, state government entities, local government entities, corporations, farm cooperatives, farmer cooperative organizations, associations of agricultural producers, national laboratories, institutions of higher education, rural electric cooperatives, public power entities, and consortia of any of the previous entities
- Qualified technologies: Technologies being adopted in a viable commercial-scale operation of a biorefinery that produces an advanced biofuel; and technologies that have been demonstrated to have technical and economic potential for commercial application in a biorefinery that produces an advanced biofuel
- For more Information: See the USDA program website at; CFDA program number 10.865; CRS Report R41985, *Renewable Energy Programs and the Farm Bill: Status and Issues*, by Randy Schnepf

5. Community Wood Energy Program

- Administered by: Forest Service
- Authorization: Title IX of the Farm Security and Rural Investment Act of 2002 (FSRIA, P.L. 107-171 is amended by Title IX Section 9001 of the Food, Conservation, and Energy Act of 2008 (P.L. 110-246), creating new Section 9013 under FSIRA
- Annual funding: Discretionary funding of \$5 million annually was authorized to be appropriated for FY2009-FY2012. The Forest Service awarded \$49 million in funding from the American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5) for wood-to-energy projects, and the appropriations committee reports in FY2010 and FY2011 have directed the use of \$5 million in hazardous fuels funds for biomass energy projects. Under the American Taxpayer Relief Act

of 2012 (ATRA; P.L. 112-240), discretionary funding of \$15 million was authorized to be appropriated for FY2013.

- Scheduled Termination: Funding authorized through FY2013
- Description: Grants awarded for systems smaller than 5 million Btu per hour for heating (or 2 megawatts) for electric power production as directed by statute. At least a 50% match is required from Non-Federal funds for grants. Technical assistance will be based on previous work and commitment to future work demonstrated by the applicant. The program is authorized \$5 million annually when funded. Grant awards are limited to \$50,000 by statute.
- Qualified applicants: State and local governments
- Qualified technology: Biomass
- For more information: See CRS Report R41985, *Renewable Energy Programs and the Farm Bill: Status and Issues*, by Randy Schnepf

6. New Era Rural Technology Competitive Grants Program

- Administered by: National Institute of Food and Agriculture (NIFA)
- Authorization: National Agricultural Research, Extension, and Teaching Policy Act of 1977 (P.L. 95-113); Food, Conservation, and Energy Act of 2008 (P.L. 110-246)
- Annual funding: \$875,000 for FY2010; an estimated \$875,000 for FY2011; the Consolidated and Further Continuing Appropriations Act, P.L. 112-55, did not provide funding for the New Era Rural Technology Competitive Grants Program (RTP) in FY2012. As a result, NIFA will not offer the RTP funding opportunity in FY2012.
- Scheduled termination: Authorized through FY2013
- Description: This program provides grant funding for approved technology development, applied research, and training to develop an agriculture-based renewable energy workforce. The initiative shall support the following fields: (A) bioenergy; (B) pulp and paper manufacturing; and (C) agriculture-based renewable energy resources.
- Qualified applicants: Public or private nonprofit community colleges; advanced technology centers
- Qualified technologies: Biomass; bioenergy
- For more information: See the CFDA website, program number 10.314 and the USDA website

7. Repowering Assistance Program (RAP)

- Administered by: Rural Development
- Authorization: Title IX, Section 9003 of the Farm Security and Rural Investment Act of 2002 (FSIRA, P.L. 107-171 is amended by Title IX, Section 9001 of the

Food, Conservation and Energy Act of 2008 (P.L. 110-246), creating new Section 9004 under FSIRA

- Annual funding:
 - Mandatory authorization: \$35 million for FY2009, to remain available until expended. \$15 million in FY2010 was appropriated through FY2012. Any mandatory funding unspent from the FY2009 allocation of \$35 million is available in FY2013
 - Discretionary authorization: Discretionary funding of \$15 million annually for FY2009-FY2013 was authorized to be appropriated under the 2008 farm bill and the ATRA extension; however, only \$15 million in FY2010 has been appropriated through FY2013. No new mandatory funding was included for RAP under the ATRA farm bill extension; however, any mandatory funding unspent from the FY2009 allocation of \$35 million remains available through FY2013.
- Scheduled termination: Authorized through FY2013
- Description: The Repowering Assistance Program (RAP) makes payments to eligible biorefineries (those in existence on the date of enactment of the 2008 farm bill, June 18, 2008) to encourage the use of renewable biomass as a replacement for fossil fuels used to provide heat for processing or power in the operation of these eligible biorefineries. Not more than 5% of the funds shall be made available to eligible producers with a refining capacity exceeding 150 million gallons of advanced biofuel per year.
- Qualified applicants: Eligible biorefinery. The biorefinery must have been in existence on or before June 18, 2008
- Qualified technologies: Renewable biomass
- For more Information: See program number 10.866 on the CFDA website and the USDA program website; CRS Report R41985, *Renewable Energy Programs and the Farm Bill: Status and Issues*, by Randy Schnepf

8. Rural Energy For America Program (REAP) Grants and Loans

- Administered by: Rural Development
- Authority: Title IX, Section 9006 of the Farm Security and Rural Investment Act of 2002 (FSIRA, P.L. 107-171) is amended by Title IX, Section 9001 of the Food Conservation, and Energy Act of 2008 (P.L. 110-246), creating new Section 9007 under FSIRA. The new Section 9007 converted the federal Renewable Energy Systems and Energy Efficiency Improvements Program into the Rural Energy for America Program (REAP)
- Annual funding:
 - Mandatory authorization: The FY2011 appropriations act (Department of Defense and Full-Year Continuing Appropriations Act, 2011; P.L. 112-10) reduced REAP discretionary funds from \$25 million to \$5 million, but left REAP's mandatory funding of \$70 million intact. The FY2012 Agriculture Appropriations Act (P.L. 112-55) limited REAP mandatory

spending to \$22 million while discretionary funding was authorized at \$3.4 million, split evenly between grants and loan guarantees.

- Discretionary authorization: \$25 million authorized annually for FY2009-FY2013. Actual discretionary appropriations have been \$5 million in FY2009, \$40 million in FY2010, \$5 million in FY2011, and \$3.4 million in FY2012
- Scheduled termination: Authorized through FY2013
- Description: REAP promotes energy efficiency and renewable energy for agricultural producers and rural small businesses through the use of (1) grants and loan guarantees for energy efficiency improvements and renewable energy systems, and (2) grants for energy audits and renewable energy development assistance.
- Qualified applicants: Commercial; schools; state, local, and tribal governments; rural electric cooperatives; agricultural; public power entities
- Qualified technologies: Solar water heat; solar space heat; solar thermal electric; photovoltaics; wind; biomass; hydroelectric; renewable transportation fuels; geothermal electric; geothermal heat pumps; CHP/cogeneration; hydrogen; direct-use geothermal; anaerobic digestion; small hydroelectric; tidal energy; wave energy; ocean thermal; renewable fuels; fuel cells using renewable fuels; microturbines. Specific energy efficiency technologies not identified
- For more information: See the program website and CRS Report R41985, *Renewable Energy Programs and the Farm Bill: Status and Issues*, by Randy Schnepf

9. Sustainable Agriculture Research and Education Program (SARE)

- Administered by: National Institute of Food and Agriculture; Agricultural Research Service; and other appropriate agencies
- Authorization: Food, Agriculture, Conservation and Trade Act of 1990 (P.L. 101-624); Food, Agriculture, Conservation and Trade Act Amendments of 1991 (P.L. 102-237); Federal Agriculture Improvement and Reform Act of 1996 (P.L. 104-127); Food, Conservation, and Energy Act of 2008 (P.L. 110-246)
- Annual funding: \$12.5 million for FY2006; \$12.4 million for FY2007; \$9.1 million for FY2008; \$14.5 million for FY2009; \$14.5 million for FY2010, \$19.2 million for FY2011; \$13.5 for FY2012; and an estimated \$12.5 million for FY2013.
- Scheduled termination: None
- Description: The purpose of the Sustainable Agriculture Research and Education Program (SARE) is, in part, to encourage research designed to increase our knowledge concerning agricultural production systems that conserve soil, water, energy, natural resources, and fish and wildlife habitat. SARE provides grants through the agricultural bioenergy feedstock and energy efficiency research and extension initiative for projects with the purpose of enhancing the production of biomass energy crops and the energy efficiency of agricultural operations.

- Qualified applicants: Federal and state governments; colleges and universities; state agricultural experiment stations; state cooperative extension services; nonprofit organizations; individuals with demonstrable expertise
- Qualified technologies: Biomass; biofuels; other technologies not identified.
- For more information: See CFDA program website, program number 10.215
- For information on additional USDA programs, see CRS Report R41985, *Renewable Energy Programs and the Farm Bill: Status and Issues*, by Randy Schnepf

IV. Department of the Interior

1. Energy and Mineral Development Program: Minerals and Mining on Indian Lands

- Administered by: Bureau of Indian Affairs. Energy and Mineral Development Program
- Authority: Indian Self-Determination and Education Assistance Act (P.L. 93-638), 25 USC 450; Snyder Act of 1921 (P.L. 67-85), 25 USC 13; Indian Minerals Development Act (P.L. 97-382), 25 USC 2101 et seq.; Umatilla Basin Project Act (P.L. 101-557), 16 USC 1271 et seq.
- Annual funding: \$12.972 million for FY2010; \$12.87 million for FY2011; \$12.7 million for FY2012; \$12 million for FY2013
- Scheduled termination: None
- Description: Funding may be used to facilitate the inventory, assessment, promotion and marketing of both renewable and nonrenewable energy and mineral resources on Indian lands. Funds are awarded competitively to support assessment and inventory programs or to develop baseline data, but cannot be used for development purposes.
- Qualified applicants: Federally recognized Indian tribes; individual American Indian mineral owners
- Qualified technologies: Renewable energy technologies
- For more information: See program number 15.038 at the CFDA website

2. Tribal Energy Development Capacity Grant Program

- Administered by: Bureau of Indian Affairs
- Authorization: Energy Policy Act of 1992 (EPACT; P.L. 102-486); Tribal Energy Resource Development and Self-Determination Act of 2005 (Title V of Energy Policy Act of 2005; P.L. 109-58)
- Annual funding: \$375,000 for FY2007; \$1 million for FY2008; no estimate available for FY2009; \$138,839 for FY2010; \$250,000 for FY2011; \$0 for FY2012; an estimated \$400,000 for FY2013

- Scheduled termination: None
- Description: This program provides grants to Indian tribes to (1) develop and sustain the managerial and technical capacity needed to develop their energy resources; and (2) properly account for resulting energy production and revenues.
- Qualified applicant: Tribal governments
- Qualified technologies: Renewable energy technologies
- For more information: See program number 15.148 at the CFDA website; or contact IEED, the Division of Indian Energy at (202) 219-0740

V. Small Business Administration

1. 7(a) Loan Guarantees

- Administered by: Small Business Administration (SBA)
- Authority: Small Business Act of 1953 (Public Law 83-163)
- Scheduled termination: None
- Annual Funding: \$168.0 million for FY2011 (\$80.0 million for 7(a) loan guaranty credit subsidies and \$88.0 million for administration); \$233.0 million for FY2012 (\$139.4 million for 7(a) loan guaranty credit subsidies and \$93.6 million for administration); \$303.1 million for FY2013 (approximately \$214.2 million for 7(a) loan guaranty credit subsidies and \$88.9 million for administration) in FY2013; and \$107.4 million budget requested for FY2014 (no funding is requested for 7(a) loan guaranty credit subsidies and \$107.4 million for administration).
- Description: To guarantee loans from lenders to small businesses which are unable to obtain financing on reasonable terms and conditions in the private credit marketplace, but can demonstrate an ability to repay loans if granted, in a timely manner. Guaranteed loans are made available to for-profit small businesses. The SBA's 7(a) lending authority includes (1) regular 7(a); (2) SBAExpress Program; (3) Patriot Express Program; (4) the CapLines Program (5) Small/Rural Lender Advantage initiative; (6) Export Express Program; (7) Export Working Capital Program; (8) Preferred Lenders Program; (9) International Trade; and (10) Small Loan Advantage and Community Advantage initiatives.
- Qualified applicant: Small businesses (meeting the size and eligibility standards)
- Qualified technologies: Not specifically listed
- For more information: See CRS Report R41146, *Small Business Administration 7(a) Loan Guaranty Program*, by Robert Jay Dilger; the SBA website; and program number 59.012 at the CFDA website

2. 504 Loan Guarantees

- Administered by: Small Business Administration (SBA)

- Authority: Small Business Investment Act of 1958 (Public Law 85-699)
- Scheduled termination: None
- Annual Funding: \$38.9 million for administration in FY2011; \$107.3 million for FY2012 (\$67.7 million for 504/CDC loan guaranty credit subsidies and \$39.6 million for administration); \$140.2 million for FY2013 (approximately \$102.7 million for 504/CDC loan guaranty credit subsidies and \$37.5 million for administration); and \$146.5 million budget request for FY2014 (\$107.0 million for 504/CDC loan guaranty credit subsidies and \$39.5 million for administration).
- Description: provides long-term fixed rate financing for major fixed assets, such as land, buildings, equipment, and machinery. Of the total project costs, a third-party lender must provide at least 50% of the financing, the Certified Development Company provides up to 40% of the financing through a 100% SBA-guaranteed debenture, and the applicant provides at least 10% of the financing. Qualified projects are required to modernize or upgrade facilities by: (1) reducing energy use by at least 10 percent; or (2) employing sustainable design, or low-impact design, that reduces fossil fuel use; or (3) planning, equipping, and/or installing process upgrades or renewable energy sources—such as the small-scale (micropower) production of energy for individual buildings or communities consumption; or (4) supporting renewable fuels production by biodiesel and ethanol producers.
- Qualified applicant: Small businesses (meeting the size and eligibility standards)
- Qualified technologies: fossil fuels; energy efficiency equipment; renewable energy sources (unspecified); renewable fuels, including biodiesel and ethanol
- For more information: See CRS Report R41184, *Small Business Administration 504/CDC Loan Guaranty Program*, by Robert Jay Dilger; the SBA website; and program number 59.041 at the CFDA website

VI. U.S. Department of Housing and Urban Development

1. Energy Efficient Mortgages (EEMs)

- Administered by: Federal Housing Administration (FHA) and Department of Veterans Affairs (VA). Conventional mortgages: Private lenders that sell mortgage loans to Fannie Mae or Freddie Mac may offer Energy Efficient Mortgages (EEMs)
- Authority: EEMs were initially introduced by lenders in the 1980s. In 1992, three pieces of legislation passed by Congress worked towards standardizing and expanding the use of EEMs. In 1992, Congress established an FHA Energy Efficient Mortgage Pilot Program (P.L. 102-550). The program was later expanded beyond five states to become a national program. The Housing Economic Recovery Act of 2008 (HERA; P.L. 110-289) increased the maximum amount that can be added to an FHA mortgage for energy efficient improvements. The 111th Congress also passed some incentives to encourage

green home improvements in the American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5).

- Scheduled termination: None
- Description: Homeowners can take advantage of EEMs to finance a variety of energy efficiency measures, including renewable energy technologies, in a new or existing home. The U.S. federal government directly provides these loans through the FHA and VA lending programs. Fannie Mae and Freddie Mac will also purchase EEMs from primary lenders. Primary lenders may issue EEMs that do not conform to underwriting standards.
- Qualified applicants: The loan is available to anyone who meets the income requirements for FHA's Section 203 (b), provided the applicant can meet the monthly mortgage payments. New and existing owner-occupied homes of up to two units qualify for this loan. Cooperative units are not eligible. VA: available to qualified military personnel, reservists and veterans; Conventional: Applicants qualifying for a conventional mortgage are also eligible for an energy efficient mortgage
- Qualifying technologies: Passive solar space heat; solar water heat; solar space heat; photovoltaics; daylighting; and other technologies not specifically identified
- For more information: See the HUD, Energy Star and DSIRE websites

VII. Department of Labor

1. Program of Competitive Grants for Worker Training and Placement in High Growth and Emerging Industry Sectors

- Administered by: Employment Training Administration
- Authority: American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5), Title VIII
- Annual funding: (Project Grants) \$0 for FY2008; \$750 million for FY2009 (ARRA) which remained available through June 30, 2010; \$0 for FY2010-FY2013
- Scheduled termination: None
- Description: This program provides competitive grants for worker training and placement in high growth and emerging industry sectors.
- Qualified applicants: State, local, and tribal governments; colleges and universities; private nonprofit institutions/organizations
- For more information: See the U.S. Department of Labor's (DOL's) *Training and Employment Notice* for this program; and program number 17.275 at the CFDA website

VIII. Department of Veterans Affairs

1. *Energy Efficient Mortgages (EEMs)*

- Administered by: FHA and VA. Conventional mortgages: Private lenders that sell mortgage loans to Fannie Mae or Freddie Mac may offer EEMs
- Authority: EEMs were initially introduced by lenders in the 1980s. In 1992, three pieces of legislation passed by Congress worked towards standardizing and expanding the use of EEMs. In 1992, Congress established an FHA Energy Efficient Mortgage Pilot Program (P.L. 102-550). The program was later expanded beyond five states to become a national program. The Housing Economic Recovery Act of 2008 (HERA; P.L. 110-289) increased the maximum amount that can be added to an FHA mortgage for energy efficient improvements. The 111th Congress also passed some incentives to encourage green home improvements in the American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Scheduled termination: None
- Description: Homeowners can take advantage of EEMs to finance a variety of energy efficiency measures, including renewable energy technologies, in a new or existing home. The U.S. federal government directly provides these loans through the FHA and VA lending programs. Fannie Mae and Freddie Mac will also purchase EEMs from primary lenders. Primary lenders may issue EEMs that do not conform to underwriting standards.
- Qualified applicants: The loan is available to anyone who meets the income requirements for FHA's Section 203 (b), provided the applicant can meet the monthly mortgage payments. New and existing owner-occupied homes of up to two units qualify for this loan. Cooperative units are not eligible. VA: available to qualified military personnel, reservists and veterans; Conventional: applicants qualifying for a conventional mortgage are also eligible for an energy efficient mortgage
- Qualifying technologies: Passive solar space heat; solar water heat; solar space heat; photovoltaics; daylighting; and other technologies not specifically identified
- For more information: See the HUD, Energy Star and DSIRE websites

Appendix A. Summary of Federal Renewable Energy and Energy Efficiency Incentives/Index of Programs

Table A-1. Federal Incentives by Agency

Administering Agency	Program	Description	U.S. Code Citation	FY2013 Appropriations^a	Expiration Date
Department of Energy	Advanced Manufacturing Office (formerly Industrial Technologies Program)	Develops and supports the commercialization of new energy efficient technologies to improve industrial efficiency while increasing productivity	42 USC §17111 et seq.	\$116.3 million	None
	Advanced Research Projects Energy Financial Assistance Program (ARPA-E)	Grants to finance sophisticated energy technology R&D projects to accelerate transformation technology advances.	42 USC §16538	\$276.7 million	Program evaluation after FY2012
	Bioenergy Technologies Program (formerly Biomass and Biorefinery Systems R&D Program)	Grants to develop cost-effective technologies and systems to transform domestic biomass resources into biofuels, bioproducts, and biopower.	42 USC §16232	\$200.5 million	None
	Building Technologies Program	Provides financial and technical assistance to improve efficiency of buildings and the equipment, components and systems within them	42 USC §17061-17124	\$220.5 million	None
	Conservation Research and Development Grant Program	Grants to finance long-term R&D efforts in buildings technologies, Industrial technologies, vehicle technologies, and hydrogen/fuel cell technologies.	42 USC §5901 et seq.	Estimated \$75.1 million	None
	Electricity Delivery and Energy Reliability, Research, Development and Analysis Grant Program	Grants to develop cost-effective technology to enhance the reliability, efficiency, and resiliency of the electric grid	42 USC §17381 et seq.	\$99.8 million	None

Administering Agency	Program	Description	U.S. Code Citation	FY2013 Appropriations^a	Expiration Date
	Energy Efficiency and Renewable Energy Information Dissemination, Outreach, Training, and Technical Analysis/Assistance Program	Provides financial assistance to stimulate increased usage of energy efficiency/ renewable energy technologies and accelerate the adoption of these technologies	See Notes field ^b	Estimated \$8.6 million	None
	Energy Efficiency and Renewable Energy Technology Deployment, Demonstration, and Commercialization Grant Program	Provides financial assistance for deployment, demonstration, and commercialization of energy efficiency and renewable energy technologies	42 USC §16191 et seq. and 42 USC §16231 et seq.	\$0	None
	Federal Energy Management Program	Provides assistance to federal agencies in developing and implementing energy efficiency and renewable energy technologies to meet energy management goals	42 USC §17131 et seq.	\$30.1 million	None
	Financial Assistance Program (Office of Science)	Grants support research in the basic sciences and advanced technology concepts and assessments in fields related to energy	42 USC §13503	Estimated \$962.6 million	None
	Geothermal Technologies Program	Partners DOE with industry, academia, and research facilities to develop geothermal energy technologies	42 USC §16231 et seq. and 42 USC §17191 et seq.	\$38.1 million	None
	Hydrogen & Fuel Cell Technologies Program	Partners DOE with industry, academia, and national laboratories to develop hydrogen and fuel cell technologies for the marketplace	42 USC §16151 et seq.	\$104.3 million	None
	Inventions and Innovations Program	Provides financial and technical assistance to develop innovative cost-effective ideas and inventions with future commercial value. Focus on energy efficiency and renewable energy technologies.	42 USC § 5913	Estimated \$914,000	None

Administering Agency	Program	Description	U.S. Code Citation	FY2013 Appropriations^a	Expiration Date
	Loan Guarantee Program	Loan guarantees to encourage commercial use of new or significantly improved technologies that avoid, reduce or sequester air pollutants or greenhouse gas emissions	42 USC §16511 et seq.	\$0 for the Innovative Technology Loan Guarantee Program (Section 1703) \$0 for the Temporary Loan Guarantee Program (Section 1705)	None
	Regional Biomass Energy Programs	Provides financial assistance to increase America's use of fuels, chemicals, materials, and power made from domestic biomass	See Notes field ^b	\$0	None
	Renewable Energy Production Incentive	Provides incentive payments for electricity generated and sold by new qualifying renewable energy facilities	42 USC §13317	\$0	End of FY2026
	Renewable Energy Research and Development Program	Provides financial assistance to conduct R&D efforts in renewable energy technologies	42 USC §16231 et. seq.	\$141.5 million	None
	Small Business Innovation Research/Small Business Technology Transfer Programs	Grants for small businesses to develop and commercialize energy technologies, including energy efficiency and renewable energy technologies	15 USC §638	\$33.3 million	None
	Solar Energy Technologies Program	Program partners with industry, universities, and national laboratories to finance R&D and bring reliable and affordable solar energy technologies to the marketplace	42 USC §16231 et seq. and 42 USC §17171 et seq.	\$290.7 million	None
	State Energy Program	Provides grants to states to design and implement their own renewable energy and energy efficiency programs	42 USC §6321 et seq.	\$50.3 million	None

Renewable Energy and Energy Efficiency Incentives: A Summary of Federal Programs

Administering Agency	Program	Description	U.S. Code Citation	FY2013 Appropriations^a	Expiration Date
	Tribal Energy Program	Provides financial and technical assistance, education, and training to tribes to evaluate and develop renewable energy sources and energy efficiency measures	25 USC §3501 et seq.	\$10.1 million	None
	Vehicle Technologies Program	Program partners with industry leaders to develop and deploy advanced transportation technologies to improve vehicle fuel efficiency and domestically produce clean and affordable alternative fuels	42 USC §17011 et seq.	\$330.8 million	None
	Water Power Program (formerly Wind and Hydropower Technologies Program)	Program partners with industry, states, federal entities, and other stakeholders on R&D projects to improve the performance, lower costs, and accelerate the deployment of water power technologies	42 USC §16231 et. seq and 42 USC §17211 et seq.	\$59.1 million	None
	Weatherization Assistance Program	Provides financial and technical assistance to states to increase the energy efficiency of low-income households	42 USC §6861 et seq.	\$68.4 million	None
	Wind Energy Program (formerly Wind and Hydropower Technologies Program)	Program partners with industry, states, federal entities, and other stakeholders on R&D projects to improve the performance, lower costs, and accelerate the deployment of wind energy technologies	42 USC §16231 et. seq	\$93.8 million	None
Internal Revenue Service	Business Energy Investment Tax Credit	Provides a tax credit for 30% of total expenditures on eligible systems placed in service, except geothermal systems, microturbines, and combined heat and power systems (10%)	26 USC §48	N/A	12/31/2016 for most eligible systems (except geothermal and solar thermal)
	Energy-Efficient Appliance Tax Credit for Manufacturers	Provides a tax credit to manufacturers for appliances that meet Energy Star 2007 requirements	26 USC §45M (amended)	N/A	12/31/2011

Renewable Energy and Energy Efficiency Incentives: A Summary of Federal Programs

Administering Agency	Program	Description	U.S. Code Citation	FY2013 Appropriations^a	Expiration Date
	Energy Efficient Commercial Buildings Tax Deduction	Tax deduction for certain qualifying systems and buildings	26 USC §179D (amended)	N/A	12/31/2013
	Energy-Efficient New Homes Tax Credit for Home Builders	Provides tax credits of up to \$2,000 for builders of new, energy-efficient homes	26 USC §45L (amended)	N/A	12/31/2011
	Qualified Energy Conservation Bonds (QEGBs)	Bond authority is allocated to state, local, and tribal governments to finance a broad range of energy efficiency and renewable energy projects	26 USC § 54A; 26 USC §54D; 26 USC § 643I	N/A	N/A
	Qualifying Advanced Energy Manufacturing Investment Tax Credit	Provides tax credits to encourage a U.S. based renewable energy manufacturing sector	26 USC §48C	N/A	Applications no longer accepted; Phase concept papers were due to DOE by 4/9/2013; final applications were due to DOE on 7/23/2013.
	Renewable Energy Production Tax Credit (PTC)	Provides a per-kilowatt-hour tax credit for electricity generated by qualified renewable energy technologies and sold during the tax year	26 USC §45 (amended)	N/A	Generally, 10 years after the date the facility placed in service (with exceptions for some technology types)
	Residential Energy Conservation Subsidy Exclusion (Corporate)	Corporate tax exemption for energy-conservation subsidies are provided by public utilities, either directly or indirectly	26 USC §136 (amended)	N/A	None
	Residential Energy Conservation Subsidy Exclusion (Personal)	Personal tax exemption for energy-conservation subsidies provided by public utilities, either directly or indirectly	26 USC §136 (amended)	N/A	None
	Residential Energy Efficiency Tax Credit	Provides tax credit to residents/individuals for the installation of qualified energy efficient equipment to existing homes (primary residence)	26 USC §25C	N/A	12/31/2011

Renewable Energy and Energy Efficiency Incentives: A Summary of Federal Programs

Administering Agency	Program	Description	U.S. Code Citation	FY2013 Appropriations^a	Expiration Date
	Residential Renewable Energy Tax Credit	Provides a tax credit to residents/ individuals for the installation of qualified renewable energy systems to existing homes. Home must serve as owner's primary residence.	26 USC §25D (amended)	N/A	12/31/2016
	Alternative Motor Vehicle Credit	Provides tax credit for hybrid and lean-burn vehicles.	26 USC §30B	N/A	Varies by technology type: See Table A-2 below
Department of Agriculture	Assistance to High Energy Cost Rural Communities Program	Provides financial assistance to rural communities with high energy costs	7 USC. §918a	\$7.6 million	None
	Bioenergy Program for Advanced Biofuels	Supports and ensures an expanding production of advanced biofuels by providing payments to advanced biofuels producers	7 USC §8105	\$105 million in mandatory funding to remain available until expended; P.L. 112-55 limits mandatory spending to \$65 million; \$0 in discretionary spending for FY2013	Authorized through FY2012
	Biomass Crop Assistance Program (BCAP)	Provides assistance to support the production of eligible biomass crops on land within approved project areas	7 USC §8111	No new mandatory funding for FY2013; discretionary funding authorized \$20 million for FY2013	Authorized through FY2012
	Biorefinery Assistance Program	Assists in the development of new technologies for development of biofuels	7 USC §8103	\$0 for FY2013; mandatory funding unspent from FY2010 allocation of \$245 million remains available in FY2013	Authorized through FY2012
	Community Wood Energy Program	Provides grants to states and local governments to develop community wood energy plans or acquire or upgrade community wood energy systems	7 USC §8113	\$0 mandatory funding; \$15 million in discretionary funding authorized to be appropriated for FY2013	Authorized through FY2012

Renewable Energy and Energy Efficiency Incentives: A Summary of Federal Programs

Administering Agency	Program	Description	U.S. Code Citation	FY2013 Appropriations^a	Expiration Date
	New Era Rural Technology Competitive Grants Program	Provides grant funding for approved technology development, applied research, and training to develop bioenergy and agriculture-based renewable energy resources	7 USC §3319e	\$0	Authorized through FY2012
	Repowering Assistance Program	Provides financial incentives to biorefineries in existence on June 18, 2008, to replace the use of fossil fuels used to produce heat or power by installing new systems that use renewable biomass or to produce new energy from renewable biomass	7 USC §8104	\$15 million in FY2012 was appropriated through FY2012; Any mandatory funding unspent from the FY2009 allocation of \$35 million remains available through FY2013; \$0 in discretionary funding for FY2013.	Authorized through FY2012
	Rural Energy for America Program	Provides grants and loan guarantees to promote energy efficiency and renewable energy to agricultural producers and rural small businesses	7 USC §8107	\$22 million in mandatory funding; and \$3.4 million in discretionary funding	Authorized through 2012
	Sustainable Agriculture Research and Education	Provides grants for research projects with the purpose of enhancing biomass energy crop production and increasing the energy efficiency of agricultural operations	7 USC §5801 et seq.	Estimated \$12.5 million	None
Department of Housing and Urban Development	Energy Efficient Mortgages	Provides backing of loans for energy efficient mortgages to finance the installation of energy efficiency or renewable energy technologies in new or existing homes	12 USC §1701z-16	N/A	None
Department of the Interior	Energy and Mineral Development Program: Minerals and Mining on Indian Lands	Facilitate the inventory, assessment, promotion and marketing of both renewable and nonrenewable energy and mineral resources on Indian lands	25 USC §450; 25 USC §13; 25 USC §2101 et seq; 16 USC. §1271 et seq.	\$12 million	None

Administering Agency	Program	Description	U.S. Code Citation	FY2013 Appropriations ^a	Expiration Date
	Tribal Energy Development Capacity Grant	Grants to Indian tribes to develop and sustain the managerial and technical capacity needed to develop their energy resources and properly account for resulting energy production and revenues	25 USC §3502	Estimated \$400,000	None
Department of Labor	Program of Competitive Grants for Worker Training and Placement in High Growth and Emerging Industry Sectors	Intended to preserve and create jobs; promote economic recovery; assist those most impacted by the recession; provide investments and invest in infrastructure	See Notes field ^b	\$0	None
Department of Veterans Affairs	Energy Efficient Mortgages	Provides backing of loans for energy efficient mortgages to finance the installation of energy efficiency or renewable energy technologies in new or existing homes	12 USC §1701z-16	N/A	None
Small Business Administration	7(a) Loan Guarantees	Provides guaranteed loans from lenders to small businesses	15 USC § 636(a)	\$214.2 million	None
	504 Loan Guarantees	Provides long-term fixed rate financing for major fixed assets, such as land, buildings, equipment, and machinery.	16 USC §685	\$107 million	None

Source: CRS.

- a. FY2013 Appropriations data compiled by CRS using executive agency budget justifications, congressional committee reports, and program descriptions from the online edition of the *Catalog of Federal Domestic Assistance*. Reflects the FY2013 Continuing Resolution but does not incorporate the reductions from the Budget Control Act sequester.
- b. Some programs are not specifically identified or codified in the United States Code.

Table A-2. Alternative Motor Vehicle Credit (26 USC §30B)

Type of Credit	Expiration Date
Fuel Cell Motor Vehicle Credit	December 31, 2014
Qualified Plug-In Electric Drive Motor Vehicle Credit	December 31, 2014
Qualified Plug-In Electric Motor Vehicle Conversion Credit	December 31, 2011
Advanced Lean Burn Technology Motor Vehicle Credit	December 31, 2010
Qualified Alternative Fuel Motor Vehicle Credit	December 31, 2010
Qualified Hybrid Motor Vehicle Credit	December 31, 2010

Source: U.S. Code and IRS

Appendix B. Index of Programs by Applicant Eligibility and Technology Type

Table B-1. Index of Programs by Applicant Eligibility

Applicant Eligibility	Program Numbers
Advanced Technology Centers	III-6
Agricultural/Extension/Biofuel Producers	II-3, III-2, III-3, III-4, III-7, III-8, III-9
Alaska Native Corporations	I-14
Builder/Developer	II-4, II-5
Commercial/Industrial/For-Profit	I-1, I-2, I-3, I-4, I-5, I-6, I-7, I-10, I-12, I-13, I-14, I-15, I-17, I-20, I-21, I-23, I-24, II-3, II-4, II-6, II-8, II-12, III-1, III-2, III-3, III-4, III-7, III-8
Cooperative/Collaborative/Consortia	I-16, I-20, III-1, III-4, III-8
Federal Government	I-4, I-6, I-7, I-12, I-22, II-4, III-9
Higher Education (Colleges and Universities)	I-1, I-2, I-3, I-4, I-5, I-6, I-7, I-8, I-12, I-13, I-14, I-17, I-20, I-21, I-23, I-24, III-4, III-6, III-9, VII-1
Local Government	I-2, I-6, I-7, I-8, I-12, I-13, I-14, I-16, I-17, I-21, I-23, I-24, III-1, III-4, III-5, III-8, VII-1
National Laboratories	I-4, I-5, I-6, I-7, I-8, I-12, III-4
Nonprofit	I-2, I-13, I-14, I-16, I-17, I-20, I-21, I-23, I-24, III-1, III-9, VII-1
Other/Cross-Cutting	I-20, II-12, II-13
Research Organization	I-20, I-21
Residential/Individual	I-11, I-14, II-1, II-2, II-9, II-10, II-13, III-1, III-4, III-9, IV-1, V-1
Schools	III-8
Small Businesses	I-6, I-7, I-11, I-23, I-25, V-1, V-2
State Government	I-2, I-6, I-7, I-8, I-9, I-12, I-13, I-14, I-15, I-16, I-17, I-18, I-21, I-23, I-24, II-4, II-11, III-1, III-4, III-5, III-8, III-9, VII-1
Tribal Government	I-6, I-9, I-13, I-14, I-16, I-17, I-18, I-19, I-21, I-23, I-24, II-11, III-1, III-4, III-8, IV-1, IV-2, VII-1
U.S. Territories	I-9, I-18
Utilities	I-16, II-3, III-4, III-8
Veterans	VI-1, VIII-1

Source: CRS.

- a. Program numbers correspond to agency (roman numeral) and (arabic) number assigned to each program as displayed in the Table of Contents.

Table B-2. Index of Programs by Technology Type

Qualified Technologies	Program Numbers ^a
Advanced Batteries	I-13
Air Conditioners	I-9, I-19, II-1, II-4
Alternative Vehicles/Vehicle Technologies	I-4, I-12, II-7, II-12, II-13
Anaerobic Digestion	I-16, II-7, II-11, II-12, III-8
Batteries (Energy Storage)	II-7
Biodiesel / Biofuels	I-1, I-12, I-24, III-2, III-4, III-9
Boilers	I-9, I-19, II-1, II-4
Biomass	I-1, I-2, I-15, I-16, I-17, I-19, I-22, II-1, II-3, II-8, II-11, II-12, III-2, III-3, III-4, III-5, III-6, III-7, III-8, III-9
Caulking/Weather Stripping	I-9, I-19, II-4
Chillers	I-19, II-4
Clothes Washers	I-19, II-6
Combined Systems/CHP/Energy Management Systems	I-8, I-19, II-3, II-12, III-8
Comprehensive/Whole Building	I-19, II-4, II-5
Dishwashers	II-6
Doors	I-19, II-1, II-4
Duct/Air Sealing	I-9, I-19, II-4
Equipment (Energy Efficient)	I-8
Fuel Cells	I-4, I-8, I-13, I-15, I-17, I-24, II-2, II-3, II-7, II-12, II-13, III-8
Furnaces	I-9, I-19, II-1, II-4
Geothermal (All)	I-3, I-15, I-17, I-22, II-3, II-12, III-8
—Geothermal (Direct Use)	II-3, II-12, III-8
—Geothermal (Electric)	I-16, I-19, I-24, II-3, II-7, II-8, II-11, II-12, III-8
—Geothermal (Heat Pumps)	I-19, II-2, II-3, II-7, II-12, III-8
Heat Pumps	II-1, II-4
Hybrid Electric	I-12, II-13
Hydrogen	I-4, I-13, I-15, I-17, II-8, III-8
Hydropower (All)	I-6, I-15, I-17, I-22, II-8, II-11
—Hydroelectric	I-6, I-19, I-24, II-8, II-11, III-8
—Hydrokinetic	I-6, II-8, II-11
—Ocean	I-6, I-16, I-22, I-24, II-8, II-11, III-8
—Tidal	I-6, I-16, I-24, II-8, II-11, III-8
—Wave	I-6, I-16, I-24, II-8, II-11, III-8
Insulation	I-9, I-19, II-1, II-4,
Landfill Gas	I-16, II-8, II-11, II-12
Lighting/Lighting Sensors	I-8, I-19, I-24, II-3, II-4, II-7, II-12, VI-1, VIII-1

Qualified Technologies	Program Numbers^a
Manufacturing Facilities	I-24
Microturbines	II-3, II-7, III-8
Municipal Solid Waste	II-8, II-11, II-12
Other Technologies ^b	I-9, I-11, I-13, I-14, I-18, I-19, I-20, I-21, I-23, I-25, II-7, II-9, II-10, III-1, III-8, III-9, IV-1, IV-2, V-1, V-2, VI-1, VIII-1
Programmable Thermostats	I-9, I-19
Refrigerators/Freezers	I-19, II-6
Renewable Transportation Fuels	I-24, II-12, III-8
Roofs	I-19, II-1, II-4
Siding	I-19, II-4
Smart Grid	I-21, II-7
Solar (All)	I-5, I-8, I-15, I-17, I-22, II-2, II-3, II-12, III-8
—Photovoltaics	I-5, I-8, I-16, I-19, I-24, II-2, II-3, II-7, II-9, II-10, II-11, II-12, III-8, VI-1, VIII-1
—Solar Space Heat	I-19, II-2, II-3, II-9, II-10, II-12, III-8, VI-1, VIII-1
—Solar Thermal Electric/Process	I-16, I-24, II-2, II-3, II-7, II-11, II-12, III-8
—Solar Water Heat	II-2, II-3, II-7, II-9, II-10, II-12, III-8, VI-1, VIII-1
Water Heaters	I-19, II-1, II-4
Wind	I-7, I-16, I-17, I-19, I-22, I-24, II-2, II-3, II-7, II-8, II-11, II-12, III-8
Windows	I-8, I-9, I-19, II-1, II-4

Source: CRS.

- a. Program numbers correspond to agency (roman numeral) and (arabic) number assigned to each program as displayed in the Table of Contents.
- b. Other technologies include cross-cutting and advanced technologies, other unspecified technologies, all energy efficiency and/or renewable energy technologies, or not specifically identified.

Appendix C. Expired Federal Energy Efficiency and Renewable Energy Incentive Programs

1. Assisted Housing Stability and Energy and Green Retrofit Investments Program (Recovery Act Funded)

- Administered by: Department of Housing and Urban Development (HUD)
- Authority: American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5), Title XII
- Annual funding: (Project Grants) \$0 for FY2009; \$235 million for FY2010 ; \$0 for FY2011—All obligations were to be made by September 30, 2010
- Scheduled termination: All obligations were to be made by September 30, 2010. Receiving property owners were required to spend the funds on the specific improvements within two years of receipt.
- Description: This program will provide funding for energy and green retrofit investments to certain eligible assisted, affordable multifamily properties. Funding includes incentives for participating property owners, a set-aside for administrative functions, and a set-aside for due diligence and underwriting support. Assistance will be for specific retrofit purposes.
- Qualified applicant: Residential
- Qualifying technologies: Specific technologies not identified
- For more information: See program number 14.318 at the CFDA website

2. Clean Renewable Energy Bonds (CREBs)

- Administered by: Internal Revenue Service
- Authority: Established by the Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58); Tax Relief and Health Care Act of 2006 (P.L. 109-432); Energy Improvement and Extension Act of 2008 (P.L. 110-343), Division B; American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5); 26 USC 54 (old CREBs); 26 USC 54A (new CREBs); 26 USC 54C (new CREBs); IRS Notice 2009-33; IRS Announcement 2010-54
- Annual funding: EPACT originally allocated \$800 million of tax credit bonds to be issued between January 1, 2006, and December 31, 2007. Following the enactment of the federal Tax Relief and Health Care Act of 2006, the IRS made an additional \$400 million in CREBs financing available for 2008 through Notice 2007-26. In November 2006, the IRS announced that the original \$800 million allocation had been reserved for a total of 610 projects. The additional \$400 million (plus surrendered volume from the previous allocation) was allocated to 312 projects in February 2008. Of the \$1.2 billion total of tax-credit bond volume cap allocated to fund renewable-energy projects, state and local government borrowers were limited to \$750 million of the volume cap, with the rest reserved for qualified municipal or cooperative electric companies. The Energy

Improvement and Extension Act of 2008 (Div. A, Section 107) allocated \$800 million for new CREBs. In February 2009, the American Recovery and Reinvestment Act of 2009 (Div. B, Section 1111) allocated an additional \$1.6 billion to expand the total new CREBs allocation to \$2.4 billion

- **Scheduled termination:** The IRS is no longer accepting applications for new CREB bonds. The deadline for new CREB applications from electric cooperatives expired November 1, 2010 and bonds for government entities and public power providers was fully allocated in October 2009.
- **Description:** The IRS is not currently accepting applications for new CREB bond volume. CREBs are used to finance renewable energy projects. CREBs are issued, theoretically, with a 0% interest rate. The borrower pays back only the principal of the bond and the bondholder receives federal tax credits in lieu of the traditional bond interest.
- **Qualified applicants:** State, local, and tribal governments; municipal utility; rural electric cooperative
- **Qualified technologies:** Solar thermal electric; photovoltaics; landfill gas; wind; biomass; hydroelectric; geothermal electric; municipal solid waste; hydrokinetic power; anaerobic digestion; tidal energy; wave energy; ocean thermal

For more information: See the DSIRE website ; Internal Revenue Service Bulletin 2007-14; and Website at; and Internal Revenue Service Notice 2009-33

3. Energy Efficient Appliance Rebate Program (EEARP)

- **Administered by:** EERE
- **Authorization:** Energy Policy Act of 2005 (EPACT 2005; P.L. 109-58), Title I, Part B; American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- **Annual funding:** \$0 for FY2008; \$298.5 million in FY2009 from ARRA; \$0 for FY2010; \$0 for FY2011; \$0 for FY2012; \$0 requested for FY2013
- **Scheduled termination:** This program was authorized through FY2010. An act of Congress is required to reauthorize this program.
- **Description:** The program provided financial and technical assistance to states to establish residential Energy Star rated appliance rebate programs. The program's objectives were: to reduce fossil fuel emissions created as a result of activities within the jurisdictions of eligible entities; and to improve energy efficiency in the residential sector.
- **Qualified applicants:** State governments, including U.S territories and possessions
- **Qualified technologies:** Energy efficient appliances
- **For more information:** See program number 81.127 at the CFDA website

4. Energy Efficiency and Conservation Block Grants Program (EECBG)

- Administered by: EERE
- Authorization: Energy Independence and Security Act of 2007 (EISA; P.L. 110-140), Title V, Subtitle E; American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5)
- Annual funding: \$0 for FY2008; \$3.2 billion for FY2009 from ARRA; \$0 for FY2010; \$0 for FY2011; \$0 for FY2012
- Scheduled termination: This program was authorized through FY2010. An act of Congress is required to reauthorize this program
- Description: This program is part of DOE's Weather and Intergovernmental Program. The EECBG Program provides formula and competitive grants to empower local communities to make strategic investments to meet the nation's long-term goals for energy independence and leadership on climate change. Grants can be used for energy efficiency and conservation programs and projects community-wide, as well as renewable energy installations on government buildings.
- Qualified applicants: State, local, and tribal governments, including U.S. territories
- Qualified technologies: Energy efficient equipment and lighting; combined heating and cooling systems; combined heat and power systems; solar; wind; fuel cells; biomass
- For more information: See EERE's Energy Efficiency and Conservation Block Grants Program website; and program number 81.128 at the CFDA website

5. Renewable Energy Grants (1603 Program)

- Administered by U.S. Department of the Treasury
- Authority: Section 707 of H.R. 4853, Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010; H.R. 1, American Recovery and Reinvestment Act of 2010 (ARRA; P.L. 111-5) Division B, Sec 1104 & 1603, U.S. Department of Treasury: Grant Program Guidance (amended)
- Scheduled Termination: Construction must have begun by December 31, 2011. Applications must have been submitted before October 1, 2012. A project may be eligible for a 1603 award if the developer began construction by the December 31, 2011 date or if the developer satisfied a 5% safe harbor by incurring 5% of the total eligible project costs before the December 31 deadline.

Description: The purpose of the 1603 payment is to reimburse eligible applicants for a portion of the cost of installing specified energy property used in a trade or business or for the production of income.

- Qualified applicants: Commercial, Industrial, Agricultural
- Qualified technologies: Solar water heat; solar space heat; solar thermal electric; solar thermal process heat; photovoltaics; landfill gas; wind; biomass; hydroelectric; geothermal electric; fuel cells; geothermal heat pumps; municipal

- solid waste; CHP/cogeneration; solar hybrid lighting; hydrokinetic; anaerobic digestion; tidal energy; wave energy; ocean thermal; microturbines
- For more information: See the Treasury's 1603 website; 1603 program guidance; and CRS Report R41635, *ARRA Section 1603 Grants in Lieu of Tax Credits for Renewable Energy: Overview, Analysis, and Policy Options*, by Phillip Brown and Molly F. Sherlock

Appendix D. Summary of Expired Federal Renewable Energy and Energy Efficiency Incentives/Index of Programs

Table D-1. Expired Federal Incentives by Agency

Administering Agency	Program	Description	U.S. Code Citation	Expiration Date
Department of Energy	Energy Efficiency and Conservation Block Grants Program	Grants to finance energy efficiency and conservation programs/projects in local communities and renewable energy installations on government buildings	42 USC §17151-17158	None
	Energy Efficient Appliance Rebate Program	Provided financial and technical assistance to states to establish residential Energy Star rated appliance rebate programs	42 USC §15821	End of FY2010
Internal Revenue Service	Clean Renewable Energy Bonds (CREBs)	Bonds finance renewable energy projects	26 USC §54 (Old CREBs);	12/31/2009 (old CREBs); 11/01/2010 (new CREBS)
	Renewable Energy Grants (1603 Program)	Renewable energy grant program to reimburse eligible taxpayers for a portion of the expense of placing in service specified energy property	ARRA (P.L. 111-5) § 1603(a)	Construction must have begun by 12/31/2011 and Applications had to be submitted before 10/1/2012.
Department of Housing and Urban Development			26 USC §54A (New CREBs)	All obligations were to be made by 9/30/2010.

Source: CRS.

Note: Some programs are not specifically identified or codified in the United States Code.

Author Contact Information

Lynn J. Cunningham
Information Research Specialist
lcunningham@crs.loc.gov, 7-8971

Beth A. Roberts
Information Research Specialist
eroberts@crs.loc.gov, 7-9090