



North Carolina Green Incentives



Centralina Economic Development Commission
Updated July 2009



CEDC BOARD MEMBERS

Chairman

Bill Thunberg
Mayor, Town of Mooresville

Vice-Chairman

Jim Puckett
Electro Painters, Inc.

Treasurer

Keith Arbuckle
Home Care of the Carolinas

President

Al Sharp
Centralina Council of Governments

LOCAL GOVERNMENT REPRESENTATIVES**Anson County**

Jarvis Woodburn
Commissioner

Cabarrus County

Jonathan B. Marshall
Director, Department of Commerce

Charlotte

Andy Dulin
Representative District 6, City Council

Gaston County

Joe Carpenter
Commissioner, Board of Commissioners

Gastonia

Michelle Nance
Development Services Manager, City of Gastonia

Iredell County

Steve Warren
Commissioner, Board of Commissioners

Lincoln County

George Arena
Commissioner, Board of Commissioners

Mecklenburg County

George Dunlap
Commissioner, Board of Commissioners

Rowan County

Robert Van Geons
Executive Director, Salisbury-Rowan EDC

Stanly County

Andy Lucas
Manager

Union County

Lanny Openshaw
Commissioner

BUSINESS & INDUSTRY REPRESENTATIVES

Mark Brady
VP, Fidelity Bank

Thomas R. Anderson,
All American Fitness

Astrid Chirinos
President, DIVERSO Global Strategies

Tim Gause
Customer Relations Manager
Duke Energy

Michael Geis
VP of Logistics, Blum, Inc.

Ron Leeper
RJ Leeper Co.

Jeanie Moore,
VP of Continuing Education
Rowan-Cabarrus Community College

John McKay
President, SPCC

Joel Randolph
VP Business Development
Randolph & Son Builders

Manuel Rey
President, Banco de la Gente

Dan Ramirez
NOVA Engineering

Chris Wease
Operations Manger
CMH Flooring Products, Inc.

Eldridge Williams
Community Service Coordinator
Livingstone College

The Centralina Economic Development Commission is a 501c3 organization that serves the greater Charlotte region (North Carolina) and supports the key activities in the Centralina Regional Comprehensive Economic Development Strategy. The Strategy outlines an approach to regional growth and prosperity that builds on the region's strengths, emphasizes key regional industry clusters, and prioritizes economic development projects. The Commission is supported by the Board of County Commissioners in nine North Carolina counties (Anson, Cabarrus, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, Stanly, and Union) and by the cities: Gastonia, Mooresville, Concord and Charlotte. Please check our website for further details: www.4noboundaries.org.



Compiled by: Victoria Rittenhouse, Program Assistant
Community & Economic Development
Centralina Economic Development Commission
1300 Baxter Street, Suite 450
Charlotte, NC 28204
704-372-2416



TABLE OF CONTENTS

North Carolina Incentives/Policies for Renewables & Efficiency

FINANCIAL INCENTIVES:

State Loan Programs:	
Energy Improvement Loan Program (EILP).....	4
Corporate Tax Credit:	
Renewable Energy Tax Credit.....	5
Personal Tax Credit:	
Renewable Energy Tax Credit.....	7
State Grant Program:	
NC Green Business Fund.....	9
Production Incentive:	
NC Green Power Production Incentive.....	11
TVA- Green Power Switch Generation Partners Program.....	13
Property Tax Assessment	
Property Tax Abatement for Solar Electric Systems.....	15
Property Tax Exemption:	
Active Solar Heating and Cooling Systems Exemption.....	16
Green Building Incentives:	
Local Option Green Building Incentives.....	17
Utility Loan Program:	
Progress Energy Carolinas - Energy Efficiency Financing Program.....	18
Utility Rate Discount	
Duke Energy- Energy Star Homes Rate Discount Program.....	19
Progress Energy Carolinas-Rate Discount for Energy Star Homes.....	20
Utility Rebate Program	
Piedmont Natural Gas-Energy Efficiency Program.....	21
Progress Energy Carolinas-Commercial Energy Efficiency Program.....	22
Progress Energy Carolinas-Home Advantage Builder Rebate Program.....	24
Duke Energy- Non-Residential Energy Efficiency Rebate Program.....	25

RULES, REGULATIONS AND POLICIES

Building Energy Code	
NC State Building Energy Codes.....	26
Energy Standards for Public Building	
Conservation of Energy and Water Use in State Buildings.....	28
Net Metering	
NC-Net Metering.....	30
Interconnection:	
Interconnections Standards.....	32
Renewables Portfolio Standard:	
Renewable Energy and Energy Efficiency Portfolio Standard.....	34
Solar Access Law/Guidelines	
Solar Access Laws.....	37
Solar/Wind Permitting Standards	
NC Model Wind Ordinance.....	39

NORTH CAROLINA SOLAR CENTER

Tax Credits: Residential Solar.....	41
Tax Incentives: Commercial Solar.....	44
NC Incentives: Transportation.....	50
Incentives: Alternative Fuel Production.....	54
Tax Incentives: Alternative Fuel Distributors.....	56



TABLE OF CONTENTS CONTINUED

NORTH CAROLINA STATE ENERGY OFFICE

State Energy Program Federal Recovery Act	
State Energy Plan.....	59
Energy Efficiency Community Block Grant Program.....	61

Federal Incentives/Policies for Renewables & Efficiencies

FINANCIAL INCENTIVES

Corporate Deduction	
Energy Efficient Commercial Building Tax Deduction.....	64
Corporate Depreciation	
Modified Accelerated Cost-Recovery System (MACRS).....	66
Corporate Exemption	
Residential Energy Conservation Subsidy Exclusion.....	68
Corporate Tax Credit	
Business Energy Investment Tax Credit (ITC).....	70
Energy Efficient Appliance Tax Credit for Manufacturers.....	73
Energy Efficient New Homes Tax Credit for Home Builders.....	75
Renewable Electricity Production Tax Credit(PTC).....	77
Federal Grant Program	
U.S. Department of Treasury-Renewable Energy Grants.....	80
USDA-Rural Energy for American Program (REAP) Grants.....	83
Federal Loan Program	
Clean Renewable Energy Bonds (CREBs).....	85
Energy Efficient Mortgages.....	88
Qualified Energy Conservation Bonds (QECBs).....	91
US Department of Energy-Loan Guarantee Program.....	93
USDA-Rural Energy for America (REAP) Loan Guarantees.....	95
Industry Recruitment/Support	
Qualifying Advanced Energy Project Investment Tax Credit.....	97
Personal Energy Exemption	
Residential Energy Conservation Subsidy Exclusion.....	99
Personal Tax Credit	
Residential Energy Efficiency Tax Credit.....	101
Residential Renewable Energy Tax Credit.....	104
Production Incentive	
Renewable Energy Production Incentive (REPI).....	107

RULES, REGULATIONS & POLICIES

Appliance/Equipment Efficiency Standards	
Federal Appliances Standards.....	111
Energy Standards for Public Buildings	
Energy Goals and Standards for Federal Buildings.....	113
Energy Reduction Goals for Federal Agencies.....	115
Green Power Purchasing/Aggregation	
U.S. Federal Government-Green Power Purchasing Goal.....	117
Interconnection	
Interconnection Standards for Small Generations.....	119



TABLE OF CONTENTS CONTINUED

ENERGY STAR

Federal Tax Credits for Energy Efficiency
Tax Credits for Consumers.121

MECKLENBURG COUNTY

Code Enforcement’s Green Permit Rebate Program.....127

CITY OF STATESVILLE

Residential Energy Efficiency Rebate Program.....128

Appendix A

Energy Efficiency Related Programs in North Carolina.....130

Appendix B

CONNECT-Regional Environmental Cabinet.....131





North Carolina Financial Incentives State Loan Program

Energy Improvement Loan Program (EILP)

Incentive Type: State Loan Program

Eligible Efficiency Technologies: Lighting, Lighting Controls/Sensors, Chillers, Furnaces, Boilers, Heat pumps, Air conditioners, Heat recovery, Caulking/Weather-stripping, Duct/Air sealing, Building Insulation, Windows, Doors, Siding, Roofs, Motor-ASDs/VSDs

Eligible Renewable/Other Technologies: Solar Water Heat, Solar Space Heat, Solar Thermal Electric, Solar Thermal Process Heat, Photovoltaics, Wind, Biomass, Hydroelectric

Applicable Sectors: Commercial, Industrial, Nonprofit, Schools, Local Government

Amount: Varies by project

Maximum Amount: \$500,000

Terms: 1% interest rate for renewables; 3% interest rate for energy efficiency; 10-year maximum term

Authority 1: N.C. Gen. Stat. § 143-345.18

Date Enacted: 8/3/2001

Website: <http://www.energync.net/funding/eilp.html>

Summary:

North Carolina's Energy Improvement Loan Program (EILP) is available to businesses, local governments, public schools, community colleges, and nonprofit organizations for projects that include energy efficiency improvements and renewable energy systems. Loans with an interest rate of 1% are available for certain renewable-energy and energy-recycling projects. Eligible renewable-energy projects generally include solar, wind, small hydropower (less than 20 megawatts) and biomass. Loans with a rate of 3% are available for projects that demonstrate energy efficiency, energy cost savings or reduced energy demand. Energy conservation projects usually include improvements to HVAC systems, energy management controls, high efficiency lighting and building envelope improvements. Loans are secured by bank letter-of-credit (non-applicable for local governments and school systems).

In order to qualify for the EILP, a project must (1) be located in North Carolina; (2) demonstrate energy efficiency, use of renewable-energy resources, energy cost savings or reduced energy demand; (3) use existing, reliable, commercially-available technologies; (4) meet federal and state air and water-quality standards; and (5) be able to recover capital costs within the loan's maximum term of 10 years through energy cost savings. Note that letter-of-credit fees do not apply to government agencies and public schools.

May 2008





North Carolina Financial Incentives Corporate Tax Credit

Renewable Energy Tax Credit (Corporate)

Incentive Type: Corporate Tax Credit

Eligible Renewable/Other Technologies: Passive Solar Space Heat, Solar Water Heat, Solar Space Heat, Solar Thermal Electric, Solar Thermal Process Heat, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Renewable Transportation Fuels, Spent pulping liquor, Solar Pool Heating, Daylighting, Anaerobic Digestion, Ethanol, Methanol, Biodiesel

Applicable Sectors: Commercial, Industrial

Amount: 35%

Maximum Incentive: \$2.5 million per installation

Carryover Provisions: Credit is taken in five equal installments; allowable credit may not exceed 50% of a taxpayer's liability for the year, reduced by the sum of all other credits.

Eligible System Size: No stated size limits for systems. Maximum of 50 kWh battery storage capacity per kW of hydro generator capacity (DC rated); maximum of 35 kWh battery storage capacity per kW for other technologies

Equipment/Installation Requirements: System must be new and in compliance with all applicable performance and safety standards. Specific equipment and installation requirements vary by technology.

Authority 1: N.C. Gen. Stat. § 105-129.15 et seq.

Date Enacted: 1977 (subsequently amended)

Effective Date: 1977

Expiration Date: 12/31/2010

Authority 2: [NC Tax Credit Guidelines](#)

Summary:

North Carolina offers a tax credit equal to 35% of the cost of eligible renewable energy property constructed, purchased or leased by a taxpayer and placed into service in North Carolina during the taxable year. The credit is subject to various ceilings depending on sector and the type of renewable-energy system. The following credit limits for various technologies and sectors apply:

- A maximum of \$3,500 per dwelling unit for residential active space heating, combined active space and domestic water-heating systems, and passive space heating;



- A maximum of \$1,400 per dwelling unit for residential solar water-heating systems, including solar pool-heating systems;
- A maximum of \$10,500 per installation for photovoltaic systems (also known as PV systems or solar-electric systems), wind-energy systems or certain other renewable-energy systems for residential use;
- A maximum of \$2.5 million per installation for all solar, wind, hydro and biomass applications for commercial or industrial facilities, including PV, daylighting, solar water-heating and space-heating technologies.

Renewable-energy equipment expenditures eligible for the tax credit include the cost of the equipment and associated design; construction costs; and installation costs less any discounts, rebates, advertising, installation-assistance credits, name-referral allowances or other similar reductions.

The allowable credit may not exceed 50% of a taxpayer's liability for the year, reduced by the sum of all other credits. Single-family homeowners who purchase and install a qualifying renewable-energy system must take the maximum credit amount allowable for the tax year in which the system is installed. If the credit is not used entirely during the first year, the remaining amount may be carried over for the next five years.

For all other taxpayers, the credit is taken in five equal installments beginning with the year in which the property is placed in service. If the credit is not used entirely during these five years, the remaining amount may be carried over for the next five years. The credit can be taken against franchise tax, income tax or, if the taxpayer is an insurance company, against the gross premiums tax.

SB 3 of 2007 amended North Carolina's renewable energy tax credit statute to allow a taxpayer who donates money to a tax-exempt nonprofit to help fund a renewable energy project to claim a tax credit. The donor may claim a share of the credit -- proportional to the project costs donated - - that the nonprofit could claim if the organization were subject to tax. HB 2436 of 2008 applied this same mechanism to donations made to units of state and local governments.

May 2008





North Carolina Financial Incentives **Personal Tax Credit**

Renewable Energy Tax Credit (Personal)

Incentive Type: Personal Tax Credit

Eligible Renewable/Other Technologies: Passive Solar Space Heat, Solar Water Heat, Solar Space Heat, Solar Thermal Electric, Solar Thermal Process Heat, Photovoltaics, Wind, Biomass, Hydroelectric, Renewable Transportation Fuels, Spent pulping liquor, Solar Pool Heating, Daylighting, Ethanol, Methanol, Biodiesel

Applicable Sectors: Commercial, Residential, Multi-Family Residential

Amount: 35%

Maximum Incentive: \$1,400 - \$10,500 (varies by technology); \$2.5 million for commercial applications

Carryover Provisions: Single-family dwellings: excess credit may be carried forward five years; all other property: credit taken in five equal installments; allowable credit not to exceed 50% of taxpayer's liability for the year, reduced by the sum of all other credits.

Eligible System Size: No stated size limits for systems. Maximum of 50 kWh battery storage capacity per kW of hydro generator capacity (DC rated); maximum of 35 kWh battery storage capacity per kW for other technologies

Equipment/Installation Requirements: System must be new and in compliance with all applicable performance and safety standards. Specific equipment and installation requirements vary by technology.

Authority 1: N.C. Gen. Stat. § 105-129.15 et seq.

Date Enacted: 1977 (subsequently amended)

Effective Date: 1977

Expiration Date: 12/31/2010

Authority 2: [NC Tax Credit Guidelines](#)

Summary:

North Carolina offers a tax credit equal to 35% of the cost of eligible renewable energy property constructed, purchased or leased by a taxpayer and placed into service in North Carolina during the taxable year. The credit is subject to various ceilings depending on sector and the type of renewable-energy system. The following credit limits for various technologies and sectors apply:

- A maximum of \$3,500 per dwelling unit for residential active space heating, combined active space and domestic water-heating systems, and passive space heating;
- A maximum of \$1,400 per dwelling unit for residential solar water-heating systems, including solar



- pool-heating systems;
- A maximum of \$10,500 per installation for photovoltaic systems (also known as PV systems or solar-electric systems), wind-energy systems or certain other renewable-energy systems for residential use;
- A maximum of \$2.5 million per installation for all solar, wind, hydro and biomass applications for commercial or industrial facilities, including PV, day lighting, solar water-heating and space-heating technologies.

Renewable-energy equipment expenditures eligible for the tax credit include the cost of the equipment and associated design; construction costs; and installation costs less any discounts, rebates, advertising, installation-assistance credits, name-referral allowances or other similar reductions.

The allowable credit may not exceed 50% of a taxpayer's liability for the year, reduced by the sum of all other credits. Single-family homeowners who purchase and install a qualifying renewable-energy system must take the maximum credit amount allowable for the tax year in which the system is installed. If the credit is not used entirely during the first year, the remaining amount may be carried over for the next five years.

For all other taxpayers, the credit is taken in five equal installments beginning with the year in which the property is placed in service. If the credit is not used entirely during these five years, the remaining amount may be carried over for the next five years. The credit can be taken against franchise tax, income tax or, if the taxpayer is an insurance company, against the gross premiums tax.

[SB 3 of 2007](#) amended North Carolina's renewable energy tax credit statute to allow a taxpayer who donates money to a tax-exempt nonprofit to help fund a renewable energy project to claim a tax credit. The donor may claim a share of the credit -- proportional to the project costs donated -- that the nonprofit could claim if the organization were subject to tax. [HB 2436 of 2008](#) applied this same mechanism to donations made to units of state and local governments.

May 2008

Contact:

Brian Lips
North Carolina Solar Center
Campus Box 7401
Raleigh, NC 27695-7401

Phone: (919) 515-3954

E-Mail: brian_lips@ncsu.edu

Web Site: <http://www.ncsc.ncsu.edu>





North Carolina Financial Incentives State Grant Program

North Carolina Green Business Fund

Incentive Type: State Grant Program

Eligible Efficiency: Comprehensive Measures/Whole Building, Custom/Others pending approval,

Technologies: Yes; specific technologies not identified

Eligible Renewable/Other: Passive Solar Space Heat, Solar Water Heat, Solar Space Heat, Solar

Technologies: Thermal Process Heat, Photovoltaics, Wind, Biomass, Hydroelectric,

Renewable Transportation Fuels, Geothermal Heat Pumps, CHP/Cogeneration, Hydrogen, Renewable Energy Technologies, Tidal Energy, Wave Energy, Refueling Stations, Renewable Fuels, Other Distributed Generation Technologies

Applicable Sectors: Commercial, Nonprofit, Local Government, State Government, Agricultural, Institutional

Amount: Varies by award

Maximum Amount: \$100,000

Funding Source: N.C. General Assembly (general appropriations)

Program Budget: \$950,000 (FY 2008-09)

Authority 1: HB 1473 (2007)

Date Enacted: 7/31/2007

Effective Date: 7/01/2007

Website: <http://www.ncscienceandtechnology.com/gbf/index.htm>

Summary:

The North Carolina Green Business Fund, created in 2007, provides funding to North Carolina small and mid-size businesses, nonprofit organizations, state agencies and local governments to encourage the development and commercialization of "promising" renewable energy and green building technologies. Grants of up to \$100,000 are available for the development of commercial innovations and applications in the biofuels industry, sustainable building practices and private sector investment in renewable energy technologies. North Carolina-based businesses and nonprofits with fewer than 100 employees, as well as state and local governmental entities, are generally eligible.

Grants in the green building sector may be awarded for innovation in areas of installation, certification or distribution of green building materials; energy audits; workforce development; and marketing and sales. For private sector investment in clean technologies, grants may target renewable energy deployment, biomass energy projects, waste reclamation for energy, implementation of energy efficiency technologies



and clean distributed generation infrastructure improvements. Grants are also available for the development, production and distribution of biofuels in North Carolina.

The Fiscal Year 2009 solicitation is available now at the website listed above. Pre-proposals are required and are due January 9, 2009. The pre-proposals will be evaluated and a number selected to submit full proposals in March. See the program website for more information.

May 2008

Contact:

N.C. Board of Science and Technology
ATTN: Green Business Fund Office
301 N. Wilmington Street
1326 Mail Service Center
Raleigh, NC 27699-1326
Phone: (919) 733-6500
Fax: (919) 733-8356
E-Mail: ncbst@nccommerce.com
Web site: <http://www.ncscienceandtechnology.com>





North Carolina Financial Incentives Production Incentives

NC Green Power Production Incentive

Incentive Type: Production Incentive

Eligible Renewable/Other Technologies: Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Anaerobic Digestion

Technologies:

Applicable Sectors: Commercial, Industrial, Residential, Nonprofit, Schools, Local Government, State Government, Agricultural, Institutional

Amount: Varies by technology and customer demand for NC GreenPower

Terms: Payments contingent on program success

Authority 1: [NCUC Order, Docket No. E-100, Sub 90](#)

Date Enacted: 1/28/2003

Website: <http://www.ncgreenpower.org>

Summary:

NC GreenPower, a statewide green-power program designed to encourage the use of renewable energy in North Carolina, offers production payments for grid-tied electricity generated by solar, wind, small hydro (10 megawatts or less) and biomass resources. Payment arrangements for electricity generated by most renewable-energy systems are available through a periodic request for proposals (RFP) process. However, owners of small solar-energy systems and small wind-energy systems (10 kilowatts or less) may apply to receive program incentives at any time. Owners of small solar-energy systems or wind-energy systems are encouraged to review and fill out an [online application](#), available on the NC GreenPower web site. Note that customer-generators who choose to net meter are *not* permitted to sell electricity under the NC GreenPower Program.

Generators are required to enter into power-purchase agreements with their utility and with NC GreenPower. However, because premiums paid to NC GreenPower are funded exclusively by voluntary contributions from North Carolina electric customers, NC GreenPower does not provide guaranteed contracts to generators. Production incentives are based on the amount expected to make the installation of renewable-energy systems approach economic feasibility. The incentives, which include payments from utility power-purchase agreements, are made on a per-kWh basis and vary by technology. Owners of solar-electric systems enrolled in NC GreenPower receive \$0.15/kWh from the program, plus approximately \$0.04/kWh from their utility under the power-purchase agreement, for a total production payment of about \$0.19/kWh. Owners of small wind-energy systems receive \$0.06/kWh from the program, plus approximately \$0.04/kWh from their utility, for a total production payment of about \$0.10/kWh.*

NC GreenPower is an independent, nonprofit organization created by state-government officials, electric



utilities, nonprofit organizations, consumers, renewable-energy advocates and other stakeholders. It began operation in October 2003 as the first statewide green-power program in the United States. North Carolina's three investor-owned utilities -- Progress Energy, Duke Energy and Dominion North Carolina Power -- and many of the state's municipal utilities and electric cooperatives are participating in the NC GreenPower Program.

**Some North Carolina utilities charge an interconnection fee of approximately \$4.00 per month for systems under 10kW.*

May 2008

Contact:

Public Information - NC GreenPower
NC GreenPower
909 Capability Drive, Suite 2100
Raleigh, NC 27606-3870
Phone: (919) 716-6398
Phone 2: (866) 533-6247
E-Mail:> info@ncgreenpower.org
Web site: <http://www.ncgreenpower.org>



TVA - Green Power Switch Generation Partners Program

Incentive Type: Production Incentive

Eligible Renewable/Other Technologies: Photovoltaics, Landfill Gas, Wind, Biomass, Municipal Solid Waste, Small Hydroelectric

Applicable Sectors: Commercial, Residential

Amount: \$1000 plus \$0.12/kWh above the retail rate for solar and \$0.03/kWh above the retail rate for all other eligible renewables

Maximum Incentive: None specified

Web Site: <http://www.gpsgenpartners.com>

Summary:

Tennessee Valley Authority (TVA), through participating TVA power companies, offers a production-based incentive program for the installation of solar photovoltaics (PV), wind, low-impact hydropower, and biomass to customers of the Tennessee Valley called Green Power Switch Generation Partners. The energy generated from participating projects is counted towards the green power resources for TVA's green pricing program, Green Power Switch.

TVA purchases the entire output of a qualifying system at \$0.12 per kilowatt-hour (kWh) above the retail rate for solar and \$0.03/kWh above the retail rate for all other eligible renewables. TVA retains sole rights to any renewable energy credits. The power is purchased through a participating power company and payment is made in the form of a credit issued by the local power company on the monthly power bill for the home or business where the generation system is located. If a system produces more electricity than it consumes, payment for the excess generation will be issued either monthly or annually, at the discretion of the power company. All new participants in the Generation Partners program will receive a \$1000 incentive to offset the upfront cost of the system.

The installed capacity goal for the entire program is 200 megawatts (MW). The production incentive is available for a minimum of 10 years from the signing of the contract, regardless of the amount produced. Systems must have a minimum output of 500 watts AC and a maximum output of 999 kilowatts. Installations must also comply with local codes and adhere to guidelines



established by the program. All equipment must be in compliance with environmental regulations and national standards, certified by a licensed electrician, and meet all applicable codes. Systems are dual-metered and must have an external disconnect switch, must complete an interconnection agreement, and be grid-tied.

As of March 2009, there were 71 distributors in seven states participating in the Generation Partners program; participation is at the discretion of the power company. For a current list of power companies participating in the program, refer to the Green Power Switch Generation Partners program [web site](#).

Last DSIRE Review: 04/28/2009





North Carolina Financial Incentives Property Tax Assessment

Property Tax Abatement for Solar Electric Systems

Last DSIRE Review: 01/20/2009

Incentive Type: Property Tax Assessment

Eligible Renewable/Other Technologies: Solar Thermal Electric, Photovoltaics

Applicable Sectors: Commercial, Industrial, Residential, Agricultural

Amount: 80% of the appraised value

Authority 1: [N.C. Gen. Stat. § 105-275 \(section 45\)](#)

Date Enacted: 8/2/2008

Date Effective: 7/1/2008

Summary:

In August 2008, North Carolina enacted legislation that exempts 80% of the appraised value of a "solar energy electric system" (also known as a photovoltaic, or PV, system) from property tax. For the purposes of this assessment, the term "solar energy electric system" means "all equipment used directly and exclusively for the conversion of solar energy to electricity." This incentive is effective for taxable years beginning on or after July 1, 2008.

Last DSIRE Review: 01/20/2009

Contact:

Taxpayer Assistance - NC DOR

N.C. Department of Revenue

Post Office Box 25000

Raleigh, NC 27640

Phone: (877) 252-3052

Web Site: <http://www.dor.state.nc.us>





North Carolina Financial Incentives Property Tax Exemption

Active Solar Heating and Cooling Systems Exemption

Incentive Type: Property Tax Exemption

Eligible: Solar Water Heat, Solar Space Heat, Solar Space Cooling

**Renewable/Other
Technologies:**

Applicable Sectors: Commercial, Industrial, Residential

Amount: No more than conventional equipment

Max. Limit: None

Authority 1: [N.C. Gen. Stat. § 105-277](#)

Date Enacted: 1977

Summary:

Active solar heating and cooling systems may not be assessed at more than the value of a conventional system for property tax purposes. This law applies only to active solar systems and does not include any land or structural elements of buildings, such as walls and roofs, or other equipment ordinarily contained in a building. Specifically, a "system" includes all controls, tanks, pumps, heat exchangers and other equipment used directly and exclusively for the conversion of solar energy for heating or cooling. Systems placed on residential, commercial and industrial property are eligible for this exclusion.

May 2008

Contact:

Taxpayer Assistance - NC DOR

N.C. Department of Revenue

Post Office Box 25000

Raleigh, NC 27640

Phone: (877) 252-3052

Web site: <http://www.dor.state.nc.us>





North Carolina Financial Incentives Green Building Incentives

Local Option Green Building Incentive

Last DSIRE Review: 09/23/2008

Incentive Type: Green Building Incentive

Eligible Efficiency

Technologies: Comprehensive Measures/Whole Building

Eligible Renewable/Other Technologies: Passive Solar Space Heat, Solar Water Heat, Solar Space Heat, Photovoltaics, Wind, Biomass, Geothermal Heat Pumps, Daylighting, Small Hydroelectric

Applicable Sectors: Commercial, Residential

Authority 1: [N.C. Gen. Stat. Â§ 153A-340](#)

Date Enacted: 8/19/2007

Effective Date: 8/19/2007

Authority 2: [N.C. Gen. Stat. Â§ 160A-381](#)

Date Enacted: 8/19/2007

Effective Date: 8/19/2007

Authority 3: [SB 1597](#)

Date Enacted: 6/30/2008

Effective Date: 6/30/2008

Summary:

To encourage sustainable building practices, North Carolina law allows all counties and cities to provide reductions or partial rebates for building permit fees. To qualify for a fee reduction, buildings must meet guidelines established by the Leadership in Energy and Environmental Design* (LEED) program, the Green Globes program, or another nationally recognized certification program.

SB 1597 of 2008 also granted authority to a few select jurisdictions to provide density bonuses, make adjustments to otherwise applicable development requirements, or provide other incentives to a developer or builder who builds or reconstructs developments which make a significant contribution to the reduction of energy consumption. The local jurisdiction is free to determine their own eligibility criteria based on generally recognized standards including LEED or other certification programs. This authority is only extended to Cabarrus County, the Cities of Asheville, Charlotte, Concord, Durham, Kannapolis, Locust, and Wilmington, and to the Towns of Carrboro, Cary, Chapel Hill, Harrisburg, Midland, Mount Pleasant, and Stanfield.

Last DSIRE Review: 09/23/2008

**The U.S. Green Building Council's LEED rating system is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. Click [here](#) for more information on the LEED program.*





North Carolina Financial Incentives Utility Loan Program

Progress Energy Carolinas - Energy Efficiency Financing Program

Incentive Type: Utility Loan Program

Eligible Efficiency Technologies: Water Heaters, Furnaces, Heat pumps, Air conditioners, Programmable

Thermostats, Building Insulation, Windows, Doors

Applicable Sectors: Residential

Terms: Loans up to \$20,000 are available with up to 10 years to repay

Website: <http://www.progress-energy.com/custservice/carres/financing/index.asp>

Summary:

Progress Energy Carolinas provides financing to help its residential customers install energy saving products in their homes. Loans are available for up to \$20,000 with up to 10 years to repay for energy efficient heating and cooling systems, storm windows and doors, insulation and other energy-saving home improvements. The loans are backed by Fannie Mae and administered through Volt VIEWtech. All work must be completed by an approved EEF contractor. The contractor will also help potential participants fill out the loan application.

Last DSIRE Review: 04/10/2009

Contact:

Progress Energy Carolinas

Customer Service

P.O. Box 1551

Raleigh, NC 27602

Phone: (800) 452-2777

Web site: <http://www.progress-energy.com>





North Carolina Financial Incentives Utility Rate Discount

Duke Energy - Energy Star Homes Rate Discount Program

Incentive Type: Utility Rate Discount

Eligible Efficiency

Technologies: Comprehensive Measures/Whole Building

Applicable Sectors: Residential

Amount: 5% discount

Requirement: Home must be awarded the Energy Star label

Web Site: <http://www.duke-energy.com/north-carolina/understand/electric-rates.asp?sec=content>

Summary:

Duke Energy encourages its residential customers to buy energy efficient homes through their [Energy Star Homes](#) Program, which awards a special 5% rate discount to customers living in Energy Star rated homes. To earn the Energy Star label, homes are tested by a third-party inspector to ensure they meet the DOE's criteria. Generally speaking, a home must be at least 30 percent more efficient than the national Model Energy Code for homes or 15 percent more efficient than the state energy code, whichever is more rigorous. The home test is the responsibility of the customer and/or the builder, and the cost range is from \$300 to \$500. The size of the home and the inspector's travel time may affect the cost. Typical characteristics of an Energy Star home include:

- Effective insulation
- High-performance windows
- Tight construction and tight ducts
- Energy-efficient HVAC equipment
- Independent testing provided by third-party inspectors

Last DSIRE Review: 04/10/2009

Contact:

Duke Energy

Customer Service

PO Box 1090

Charlotte, NC 28201

Phone: (800) 976-4328

E-Mail: ContactUs@duke-energy.com

Web Site: <http://www.duke-energy.com/>



Progress Energy Carolinas - Rate Discount for Energy Star Homes

Incentive Type: Utility Rate Discount

Eligible Efficiency

Technologies: Comprehensive Measures/Whole Building

Applicable Sectors: Residential

Amount: 5% off of total monthly electric bill

Requirement: Must be an Energy Star Home

Web Site: <http://www.progress-energy.com/custservice/carres/energyhome/index.asp>

Summary:

Progress Energy Carolinas offers an incentive to its residential customers for improving the energy efficiency of their homes. To qualify the home must meet the standards of the US Environmental Protection Agency's Energy Star-labeled home program and be verified by a registered third party. Eligible houses will receive a 5% discount on their monthly electric bills from Progress Energy.

Last DSIRE Review: 04/10/2009

Contact:

Progress Energy Carolinas

Customer Service

P.O. Box 1551

Raleigh, NC 27602

Phone: (800) 452-2777

Phone 2: (888) 999-8856

E-Mail: carolinasBusiness@us.KEMA.com

Web Site: <http://www.progress-energy.com>





North Carolina Financial Incentives Utility Rebate Program

Piedmont Natural Gas - Energy Efficiency Program

Incentive Type: Utility Rebate Program

Eligible Efficiency

Technologies: Water Heaters, Furnaces

Applicable Sectors: Commercial, Residential

Incentive Amount: High-efficiency furnace: \$300

Tankless water heater: \$250

Storage tank water heater: \$50

Maximum Incentive: Maximum number of rebates per residential service address is 2 rebates for water heating and 2 rebates for space heating.

Equipment Storage tank water heater: EF = 0.62 or higher

Requirements: Tankless water heater: EF = 0.82 or higher

High-efficiency furnace: AFUE = 90% or higher

Installation Rebates are only available for qualifying natural gas equipment

Requirements: that is installed to replace existing natural gas-fired equipment.

Equipment must be installed by a NC licensed HVAC or plumbing contractor.

Project Rebates apply only to equipment purchased and installed after

Review/Certification: March 23, 2009, when the Commission approved the program.

Web Site: [http://www.piedmontng.com/
residential/aboutNaturalGasSection/efficiencyPrograms1](http://www.piedmontng.com/residential/aboutNaturalGasSection/efficiencyPrograms1)

Summary:

Piedmont Natural Gas Company provides its commercial customers with a \$250 rebate ONLY on a tankless natural gas water heater replacing less efficient natural gas equipment. Residential customers can also obtain rebates for a high efficiency furnace or storage tank water heater.

Last DSIRE Review: 05/18/2009

Contact:

Piedmont Natural Gas

Marketing / Rebate Form

Piedmont Natural Gas Company, Inc.

PO Box 33068

Charlotte, NC 28233

Phone: (877) 279-3636

E-Mail: save-energy@piedmontng.com

Web Site: <http://www.piedmontng.com/>



Progress Energy Carolinas - Commercial Energy Efficiency Program

Incentive Type: Utility Rebate Program

Eligible Efficiency Technologies: Refrigerators/Freezers, Lighting, Lighting Controls/Sensors, Chillers, Heat

pumps, Air conditioners, Motors, Motor-ASDs/VSDs, Comprehensive Measures/Whole Building, Custom/Others pending approval

Applicable Sectors: Commercial, Industrial, Nonprofit, Local Government, Construction, State Government, Multi-Family Residential

Incentive Amount: Lighting: \$0.50-\$55 per lamp
High Performance New Fixtures: \$0.35 per watt saved
Occupancy Sensors: \$0.06 per watt controlled
Air Conditioners/Heat Pumps: \$25-\$55 per ton
Chillers: \$18, \$35 per ton
VSDs and HVAC Fans: \$45 per horsepower
Commercial Refrigeration Measures: \$20-\$140 per unit
Ice Makers: \$75-\$600 per unit
Motors: \$10-\$450 per motor based on horsepower
Custom: \$0.08 per kiloWatt hour saved
Whole Building: \$0.09-\$0.14 per kiloWatt hour saved in first year
Feasibility studies: \$10,000-\$20,000

Maximum Incentive: 75% of the incremental measure costs or total cost of the Project
50% of cost for technical efficiency studies

Equipment

Requirements: Qualifications vary and are listed in detail on the applications.

Expiration Date: February 28, 2010

Project Pre-approval incentive application should be submitted to

Review/Certification: Progress Energy

Web Site: <http://www.progress-energy.com/custservice/carbusiness/efficiency/programs/eebiz/details.asp>

Summary:

Progress Energy provides New Construction, Retrofit, and Feasibility Study rebates to commercial, industrial, and government organizations. Incentives can be based on prescriptive rebate amounts listed above or custom amounts based on kiloWatt hours saved. Custom measures are required to have at least a 1.0 on the Total Resource Cost Test to qualify for an incentive. Incentives earned up to \$100,000 will be paid at 100% of earned amount; \$100,001 - \$500,000 at 50% of the earned amount; \$500,001 - \$1,000,000 at 25% of the earned amount; and all incentives over \$1,000,000 will be paid at 10% of the earned amount.

There are also technical assistance incentives. One for building energy modeling designs that have a projected first-year electrical savings of at least 15 percent beyond the applicable building code, and a facility design incentive: \$.05 per kWh of projected first year savings up to a



maximum of \$50,000. The Building Energy Modeling Incentives are offered, up to a maximum of \$20,000, not to exceed the total cost of the modeling service. A customer may select an incentive for either a building energy modeling service or facility design, but not both. Customers can receive up to 50 percent of the cost of an energy or feasibility study for a facility every three years.

Once a project is identified, a pre-approval incentive application should be submitted to Progress Energy and when approved, proceed with installation. Pre-approval is required for some lighting prescriptive measures, and all custom projects and technical assistance and is strongly encouraged for all projects to reserve funding. Final Application and all required documentation must be received by PEC within 60 days of Project completion. All Equipment must be purchased and installed prior to submitting the Final Application. Final Applications and all required supporting documentation should be received by February 28, 2010.

Last DSIRE Review: 05/19/2009

Contact:

Progress Energy Carolinas

Customer Service

P.O. Box 1551

Raleigh, NC 27602

Phone: (800) 452-2777

Phone 2: (888) 999-8856

E-Mail: carolinasBusiness@us.KEMA.com

Web Site: <http://www.progress-energy.com>

Kathleen Stahl

Progress Energy

100 E. Davie

Raleigh, NC 27601

Phone: (919) 54-6-21

E-Mail: kathleen.stahl@pgnmail.com

Web Site: www.progress-energy.com/carolinasbusiness



Progress Energy Carolinas - Home Advantage Builder Rebate Program

Incentive Type: Utility Rebate Program

Eligible Efficiency

Technologies: Heat pumps, Air conditioners, Comprehensive Measures/Whole Building

Eligible Geothermal Heat Pumps

Renewable/Other

Technologies:

Applicable Sectors: Construction, Builders, and Manufactured Housing
Manufacturers and Retailers

Incentive Amount: Energy Star Qualified New Home: \$400
Energy Star Qualified Manufactured Home: \$300
Cooperative Advertising: 50% match, up to \$50 per dwelling
Sales-lot Incentive: \$100 (for selling an Energy Star
manufactured home)
Enhanced HVAC options for Energy Star Manufactured and
Site-Built Homes:
Air-source Heat Pump: \$300 per unit
Central AC: \$300 per unit
Geothermal Heat Pump: \$600 per unit

Maximum Incentive: The additional HVAC rebates are limited to two units per
dwelling.

Equipment Requirements: Energy Star Qualified New Home: HVAC must meet minimum
rating of 14 SEER
Enhanced HVAC Options:
Air-source Heat Pump: 15 SEER or higher
Central AC: 15 SEER or higher
Geothermal Heat Pump: 17 EER or higher

Web Site: [http://www.progress-energy.com/
custservice/carres/efficiency/programs/habuilder/](http://www.progress-energy.com/custservice/carres/efficiency/programs/habuilder/)

Summary:

The Progress Energy Carolinas' Home Advantage Program is designed to reward home builders, manufactured housing manufacturers, and manufactured housing retailers with incentives for building and selling ENERGY STAR Homes. Cash rebates are available to builders or developers of new single family, multifamily, high-rise multifamily dwellings and manufactured housing. In order to qualify for the whole home rebates, homes must be certified Energy Star. Additional incentives, ranging from \$300 - \$600 per unit, are available for HVAC equipment that surpasses the Energy Star Certified Home requirements. The [rebate application](#) is located on the program website. Progress Energy Carolinas will also match 50% of the builders' advertising costs up to \$100 and pay a sales lot incentive of \$100 to retailers for selling an Energy Star manufactured home.

Last DSIRE Review: 02/17/2009



Duke Energy - Non-Residential Energy Efficiency Rebate Program

Incentive Type: Utility Rebate Program

Eligible Efficiency Technologies: Refrigerators/Freezers, Water Heaters, Lighting, Lighting Controls/Sensors, Chillers, Heat pumps, Air conditioners, Windows, Motors, Motor-ASDs/VSDs, Processing and Manufacturing Equipment, LED Exit Signs and Traffic Signals, Thermal Storage Units, Food Service Equipment

Applicable Sectors: Commercial, Industrial, Nonprofit, Schools, Local Government, Institutional

Incentive Amount: Lighting: varies depending on fixture type
Occupancy Sensors: \$20-\$40/sensor
Air Conditioners: \$20-\$40 per ton, depending on type and size
Heat Pumps: \$20-\$40 per ton, depending on type and size
Window/Sleeve A/C Units: \$25-\$50 per unit, depending on size
Heat Pump Water Heaters: \$2,000-\$9,000 per unit, depending on size
Programmable Thermostats: \$50 per unit
Window Film: \$1 per sq ft
Chillers: \$20-\$25 per ton
Thermal Storage Units: \$190/kW shifted
Motors: \$4-\$10 per HP
Pumps: \$122-\$400 per pump
VFDs: \$40 per HP (for process pumping); \$100 per HP (applied to HVAC equipment)
Barrel Wraps: \$1 per ton
Pellet Dryer Duct Insulation: \$13-\$40 per foot
Engineered Compressed Air Nozzles: \$20 per unit
Vending Equipment Controllers: \$50
Commercial Cooking Equipment: \$150-\$1,000 per unit, depending on type
Food Service Equipment: varies

Maximum Incentive: Window Film: 50% of project cost
Process Equipment: 50% of material cost

Equipment Requirements: All equipment must meet certain efficiency standards located on the program website

Web Site: <http://www.duke-energy.com/north-carolina-business/energy-management/energy-efficiency-incentives.asp>

Summary:

Duke Energy's Smart Saver™ Incentive program offers rebates to non-residential customers to install energy efficient equipment in their facilities. All Duke Energy North Carolina nonresidential electric customers are eligible, except those that have elected to opt out of the Energy Efficiency Rider. Rebates are available for a wide range of equipment including lighting, heating and cooling equipment, chillers and thermal storage units, motors, pumps, VFDs, process equipment, and food service equipment. All equipment must meet certain energy efficiency standards stated on the program website. To receive the rebates, customers should submit a completed application within 60 days after the equipment is installed and operational. A list of frequently asked questions and the program application forms can be found on the program website.

Last DSIRE Review: 06/20/2009





North Carolina Rules, Regulations and Policies

Building Energy Code

North Carolina State Building Energy Codes

Incentive Type: Building Energy Code

Eligible Efficiency

Technologies: Comprehensive Measures/Whole Building

Applicable Sectors: Commercial, Residential

Residential Code: 2006 IECC is the basis for the state-developed 2009 North Carolina Energy Conservation Code. Mandatory statewide; REScheck can be used to show compliance. Builders are allowed to use the previous 2006 North Carolina Energy Conservation Code (based on the 2003 IECC) until June 30, 2009.

Commercial Code: 2006 IECC is the basis for the state-developed code which references ASHRAE 90.1-2004. Mandatory statewide; COMcheck can be used to show compliance. Builders are allowed to use the previous 2006 North Carolina Energy Conservation Code (based on the 2003 IECC) until June 30, 2009.

Code Change Cycle: State Building Code Council develops new codes on a three-year cycle. Most recent update was effective January 1, 2009. The next update is expected in 2012.

Web Site: <http://www.bcap-energy.org/node/82>

Summary:

Much of the information presented in this summary is drawn from the U.S. Department of Energy's (DOE) Building Energy Codes Program and the Building Codes Assistance Project (BCAP). For more detailed information about building energy codes, visit the [DOE](#) and [BCAP](#) websites.

The [North Carolina State Building Code Council](#) is responsible for developing all state codes. By statute, the Commissioner of Insurance has general supervision over the administration and enforcement of the North Carolina state building code. Local government units enforce the code through the permit/inspection process for new construction and additions. The North Carolina Department of Insurance is responsible for general supervision of the effort statewide. Local units of government enforce the code through the permit/inspection process for new construction and additions.

In September 2005, the NC Building Code Council adopted the 2003 IECC with NC



amendments effective July 1, 2006. The amendments include adoption of ASHRAE 90.1-2004. Chapter 11 of the 2003 IRC has also been adopted and includes NC amendments; the effective date for the Residential Code was July 1, 2007.

On March 11, 2008, the 2009 North Carolina Energy Conservation Code was adopted. Based on the 2006 IECC (and referencing ASHRAE 90.1-2004 for commercial buildings), the code includes strengthening [amendments](#) to the base code, requiring fenestration U-factor and SHGC values of 0.40 across the state. Builders are allowed to use the previous code until June 30, 2009.

The NC Building Code Council expects to begin the next code update process in the spring of 2009 with an anticipated effective date of January 1, 2012. While the 2009 IECC will be used as the base code, the state was awarded a \$500,000 federal grant to improve its next code's stringency by 30% and improve compliance through comprehensive training and enforcement.

Last DSIRE Review: 03/30/2009

Contact:

Billy Hinton

North Carolina Department of Insurance
Engineering Division
322 Chapanoke Road
Raleigh, NC 27601

Phone: (919) 661-5880 Ext.239

Fax: (919) 662-4414

E-Mail: bhinton@ncdoi.net

Web Site: http://www.ncdoi.com/OSFM/Engineering/engineering_home.asp





North Carolina Rules, Regulations and Policies

Energy Standards for Public Buildings

Conservation of Energy and Water Use in State Buildings

Incentive Type: Energy Standards for Public Buildings

Eligible Efficiency

Technologies: Comprehensive Measures/Whole Building

Applicable Sectors: Schools, State Government

Equipment/Products: New office equipment and appliances must be Energy Star certified

Requirement: State-owned buildings must be designed, constructed and certified to exceed the energy efficiency requirements of ASHRAE 90.1-2004 by 30% for new buildings, and 20% for major renovations.
The energy consumption per gross square foot for all State buildings in total must be reduced by 20% by 2010, and 30% by 2015 based on consumption during the 2003-2004 fiscal year

Authority 1: [N.C. Gen. Stat. § 143-64.10 et seq.](#)

Date Enacted: 8/31/2007

Date Effective: 8/31/2007

Authority 2: [N.C. Gen. Stat. § 143-135.35 et seq.](#)

Date Enacted: 8/8/2008

Date Effective: 8/8/2008

Summary:

[Senate Bill 668](#) of 2007 and [Senate Bill 1946](#) of 2008 established several policies which will reduce the amount of energy, water and other resources consumed by the State government in their buildings and facilities. These standards apply to all new buildings owned by the State, the University of North Carolina, and the North Carolina Community College system, which are larger than 20,000 gross square feet. Also included are renovation projects when the cost is greater than 50% of the insurance value and the project is greater than 20,000 square feet. These projects must be designed, constructed and certified to exceed the energy efficiency requirements of ASHRAE 90.1-2004 by 30% for new buildings, and 20% for major renovations. Additionally, new buildings must consume 20% less potable water than the North Carolina Plumbing Code requires, and 50% less outdoor water than typical facilities using conventional systems.

Existing buildings purchased by the State must also meet certain energy and water conservation standards. Buildings purchased by the State must meet whatever State law or local ordinance was in effect during the time of its construction. Buildings having historic, architectural or cultural



significance, however, do not have to meet this standard.

This bill goes further than similar standards adopted by other states by also making conservation requirements for existing state-owned buildings. No later than December 31, 2009, all existing State-owned buildings must make specific lighting upgrades including the replacement of standard exit signs with ones that utilize LEDs and the replacement of incandescent light bulbs with compact fluorescent bulbs. Existing buildings must also install faucet aerators and low-flow shower heads, and adopt other methods to reduce either outdoor or indoor water consumption by 20% relative to a 2002-2003 baseline. When replacing HVAC equipment in an existing building, the specifications of the new system must be reviewed to ensure it is properly sized. Replacement motorized equipment must meet minimum performance standards established by the National Electric Manufacturers Association. And, when purchasing new office equipment and appliances, the new equipment must be Energy Star certified.

The bill also refined a previous requirement for State buildings in total to reduce their energy consumption per square foot by 20% by 2010 and 30% by 2015 relative to energy consumption levels during the 2003-2004 fiscal year. To help meet this goal, The Department of Administration through the State Energy Office will develop a comprehensive program to help State agencies and State institutions of higher learning manage their consumption. This will include a requirement for the use of life-cycle cost analysis during the design phase to consider site orientation, the amount and type of fenestration and the potential for daylighting, the amount of insulation used, variable occupancy and operating conditions, and architectural features that affect the consumption of water, energy and other utilities.

Last DSIRE Review: 12/18/2008

Contact:

Len Hoey

State Energy Office

1340 Mail Service Center

Raleigh, NC 27699

Phone: (919) 733-1891

Phone 2: (800) 662-7131

Fax: (919) 733-2953

E-Mail: len.hoey@doa.nc.gov

Web Site: <http://www.energync.net>





North Carolina Rules, Regulations and Policies

Net Metering

North Carolina - Net Metering

Incentive Type: Net Metering

Eligible Renewable/Other Technologies: Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Hydrogen, Waste Heat using Renewable Fuels, Anaerobic Digestion, Tidal Energy, Wave Energy, Fuel Cells using Renewable Fuels

Applicable Sectors: Commercial, Industrial, Residential, Nonprofit, Schools, Local Government, State Government, Tribal Government, Fed. Government, Agricultural, Institutional

Limit on System

Size: 1 MW

Limit on Overall

Enrollment: No limit

Treatment of Net Excess: Credited to customer's next bill at utility's retail rate until the beginning of each summer billing season, at which point any remaining NEG is granted to utility with no compensation for customer. (See summary below for NEG treatment under TOU-demand tariffs.)

Utilities Involved: Investor-owned utilities (Progress Energy, Duke Energy, Dominion North Carolina Power)

Interconnection Standards for Net

Metering? Yes

Date Enacted: 3/31/2009

Date Effective: 6/1/2009

Summary:

Note: North Carolina's three investor-owned utilities filed with the North Carolina Utilities Commission (NCUC) revised tariffs to implement net metering as described below on May 1, 2009. These tariffs will take effect on or before June 1, 2009.

The North Carolina Utilities Commission (NCUC) requires the state's three investor-owned utilities -- Duke Energy, Progress Energy and Dominion North Carolina Power -- to make net metering available to customers that own and operate systems that generate electricity using solar energy, wind energy, hydropower, ocean or wave energy, biomass resources, waste heat derived from eligible renewable resources, or hydrogen derived from eligible renewable resources.* The individual system capacity limit is one megawatt (MW). There is no aggregate capacity limit on net-metered systems.



Customers may net meter under any available rate schedule. However, customers that choose to take service under any tariff other than a time-of-use (TOU) demand tariff must surrender to the utility all renewable energy credits (RECs) associated with the customer's generation – with no compensation for the customer.

For residential systems up to 20 kilowatts (kW) and non-residential systems up to 100 kW in capacity, utilities may not charge any standby charges or any additional metering charges other than those charged to customers who do not net meter under the applicable rate schedule. For larger systems, utilities are allowed to impose standby charges consistent with approved standby rates applicable to other customer-owned generation.

In general, any customer net excess generation (NEG) during a billing period is carried forward to the following billing period at the utility's full retail rate, and then surrendered to the utility – with no compensation for the customer – at the beginning of each summer billing season. However, the treatment of generation and NEG for customers on TOU-demand tariffs is more complicated. For these customers, on-peak generation is used to offset on-peak consumption, and off-peak generation is used to offset off-peak consumption. Any remaining on-peak generation is then used to offset off-peak consumption. Off-peak generation may only be used to offset off-peak consumption.

Utilities must file with the NCUC annual reports indicating the number of net-metering applicants and customer-generators, the aggregate capacity of net-metered generation, the size and types of renewable-energy systems, the amounts of on-peak and off-peak generation credited and ultimately granted to the utility, and the reasons for any rejections or removals of customer-generators from a net-metering arrangement.

Last DSIRE Review: 04/16/2009

** In July 2006, the NCUC extended net metering to eligible systems with battery storage. "Gaming" a net-metering arrangement by using battery storage to manipulate a TOU tariff is not allowed.*

Contact:

Kennie Ellis
North Carolina Utilities Commission
Public Staff
430 N. Salisbury Street
Raleigh, NC 27611
Phone: (919) 733-2267
E-Mail: Kennie.Ellis@ncmail.net
Web Site: <http://www.ncuc.commerce.state.nc.us>

Keith McAllister
N.C. Solar Center
N.C. State University
Box 7401
North Carolina State University
Raleigh, NC 27695-7401
Phone: (919) 515-3480
Phone 2: (800) 336-2786
Fax: (919) 515-5778
E-Mail: keith_mcallister@ncsu.edu

Sam Watson
North Carolina Utilities Commission
430 N. Salisbury Street
Raleigh, NC 27611
Phone: (919) 715-7057
E-Mail: swatson@ncuc.net
Web Site:
<http://www.ncuc.commerce.state.nc.us>





North Carolina Rules, Regulations and Policies

Interconnections

Interconnection Standards

Incentive Type:	Interconnection
Eligible Renewable/Other Technologies:	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Fuel Cells, Municipal Solid Waste, CHP/Cogeneration, Anaerobic Digestion, Small Hydroelectric, Microturbines, Other Distributed Generation Technologies
Applicable Sectors:	Commercial, Industrial, Residential, Nonprofit, Schools, Local Government, State Government, Fed. Government, Agricultural, Institutional
Limit on System Size/Overall Enrollment:	No
Standard Interconnection Agreement?	Yes
Additional Insurance Requirements?	No
External Disconnect Required?	Utility authorized to require; but must reimburse owners of inverter-based systems smaller than 10 kW for the cost of the switch
Rules for Non-Net-Metered DG?	Yes
Authority 1:	NCUC Order, Docket No. E-100, Sub 101
Date Enacted:	6/9/2008
Effective Date:	6/9/2008

Summary:

The North Carolina Utilities Commission (NCUC) adopted comprehensive interconnection standards for distributed generation in June 2008. The NCUC standards, which are similar to the Federal Energy Regulatory Commission’s (FERC) interconnection standards for small generators, govern interconnection to the distribution systems of the state’s three investor-owned utilities: Progress Energy, Duke Energy and Dominion North Carolina Power.* The standards apply to all state-jurisdictional interconnections (including interconnection of three-phase generators) regardless of the capacity of the generator, the voltage level of the interconnection, or whether the customer intends to offset electricity consumption or sell electricity.



The NCUC standards, like the FERC standards, use a three-tiered approach to simplify the interconnection process:

- Systems up to 10 kilowatts (kW) must follow the 10-kW "inverter process" of simplified interconnection;
- Systems larger than 10 kW and up to two megawatts (MW) must follow the "fast-track process;" and
- Systems greater than 2 MW must follow the "study process."

Utilities may not require residential customers to carry liability insurance beyond the amount required by a standard homeowner's policy (\$100,000 minimum). Non-residential generators are required to carry comprehensive general liability insurance (\$300,000 minimum). Customers that meet certain eligibility requirements are allowed to self-insure. Generators are responsible only for the costs of upgrades and improvements directly associated with a system's interconnection, but these costs may be determined by utilities.

As specified in a December 2008 [order](#), utilities are authorized to require an external disconnect switch, but must reimburse owners of systems smaller than 10kW for the cost of the switch. Interconnection agreements are not transferrable; new owners must secure an agreement by filing an interconnection request and submitting a fee of \$50. (However, the interconnection will not need to be re-studied.) The standards include a provision for mutual indemnification and a weak process for dispute resolution.

The NCUC established a fee structure for interconnection applications: \$100 for generators up to 20 kW; \$250 for generators larger than 20 kW but not larger than 100 kW; and \$500 for generators larger than 100 kW but not larger than to 2 MW. The FERC fee structure applies to the interconnection of systems over 2 MW.

The NCUC has ruled that renewable-energy credits (RECs) generally remain the property of the system owner. However, for net-metered systems, any net excess generation (NEG) and the RECs associated with NEG are granted to the utility once annually.

Legislation enacted by North Carolina in August 2007 ([S.B. 3](#)) required the NCUC to establish interconnection standards for distributed generation systems up to of 10 MW in capacity. The law stated that the commission "shall adopt, if appropriate, federal interconnection standards." This law also established North Carolina's Renewable Energy and Energy Efficiency Portfolio Standard (REPS).

**The NCUC's interconnection standards do not govern interconnection to municipal utilities or electric cooperatives.*

Contact: Kennie Ellis

North Carolina Utilities Commission

430 N. Salisbury Street; Raleigh, NC 27611

Phone: (919) 733-2267 **Fax:** (919) 733-4744

E-Mail: Kennie.Ellis@ncmail.net

Last DSIRE Review: 12/19/2008





North Carolina Rules, Regulations and Policies

Renewables Portfolio Standard

Renewable Energy and Energy Efficiency Portfolio Standard

Incentive Type:	Renewables Portfolio Standard
Eligible Efficiency Technologies:	CHP/Cogeneration, Yes; specific technologies not identified
Eligible Renewable/Other Technologies:	Solar Water Heat, Solar Space Heat, Solar Thermal Electric, Solar Thermal Process Heat, Photovoltaics, Landfill Gas, Wind, Biomass, Geothermal Electric, Hydrogen, Anaerobic Digestion, Small Hydroelectric, Tidal Energy, Wave Energy
Applicable Sectors:	Municipal Utility, Investor-Owned Utility, Rural Electric Cooperative
Standard:	12.5% of 2020 retail sales by 2021 for investor-owned utilities; 10% of 2017 retail sales by 2018 for electric cooperatives and municipal utilities
Technology Minimum:	0.2% solar electricity and thermal energy by 2018; 0.2% swine waste by 2018; 900,000 MWh of poultry waste by 2014
Authority 1:	N.C. Gen. Stat. § 62-2 et seq.
Date Enacted:	8/20/2007
Effective Date:	1/1/2008
Authority 2:	NCUC Order, Docket No. E-100, Sub 113
Date Enacted:	2/29/2008
Effective Date:	2/29/2008

Summary:

North Carolina's Renewable Energy and Energy Efficiency Portfolio Standard (REPS), enacted by [Senate Bill 3](#) in August 2007, requires all investor-owned utilities in the state to supply 12.5% of 2020 retail electricity sales (in North Carolina) from eligible energy resources by 2021. Municipal utilities and electric cooperatives must meet a target of 10% renewables by 2018 and are subject to slightly different rules. In February 2008, the North Carolina Utilities Commission (NCUC) adopted final rules implementing the REPS.

Eligible energy resources include solar-electric (photovoltaics), solar thermal, wind, hydropower up to 10 megawatts (MW), ocean current or wave energy, biomass* that uses Best Available Control Technology (BACT) for air emissions, landfill gas, waste heat from renewables, and hydrogen derived from renewables. Up to 25% of the requirements may be met through energy efficiency technologies, including combined heat-and-power (CHP) systems powered by non-renewable fuels. After 2021, up to 40% of the standard may be met through energy efficiency.



The overall target for renewable energy includes technology-specific targets of 0.2% solar by 2018 (which includes photovoltaics, solar water heating, solar absorption cooling, solar dehumidification, solar thermally driven refrigeration, and solar industrial process heat), 0.2% energy recovery from swine waste by 2018, and 900,000 megawatt-hours (MWh) of electricity derived from poultry waste by 2014. The NCUC has required that each electric power supplier submit its first annual REPS compliance plan by September 1, 2008. Beginning in 2009, each power supplier will be required to file a compliance report, detailing the actions it has taken to fulfill the requirements of the REPS.

The compliance schedule for investor-owned utilities appears below. Note that each year's percentage requirement refers to the previous year's electricity sales (i.e. the 2021 goal is 12.5% of 2020 retail sales).

- 2010: 0.02% from solar
- 2012: 3% (including 0.07% from solar + 0.07% from swine waste + 170,000 MWh from poultry waste)
- 2013: 3% (including 0.07% from solar + 0.07% from swine waste + 700,000 MWh from poultry waste)
- 2014: 3% (including 0.07% from solar + 0.07% from swine waste + 900,000 MWh from poultry waste)
- 2015: 6% (including 0.14% from solar + 0.14% from swine waste + 900,000 MWh from poultry waste)
- 2018: 10% (including 0.20% from solar + 0.20% from swine waste + 900,000 MWh from poultry waste)
- 2021: 12.5% (including 0.20% from solar + 0.20% from swine waste + 900,000 MWh from poultry waste)

Electric cooperatives and municipal utilities must meet the solar, swine waste and poultry waste goals, but these utilities only must meet an overall target of 10% by 2018. Cooperatives and municipal utilities are permitted to use demand side management or energy efficiency to satisfy the standard without limitation, and may also use large hydropower to meet up to 30% of the renewable energy requirement.

Utilities demonstrate compliance by procuring renewable energy credits (RECs) earned after January 1, 2008. Under NCUC rules, a REC is equivalent to 1 MWh of renewable energy generation, but the law explicitly states that RECs do not include credit for emissions reductions from oxides of sulfur and nitrogen, mercury or carbon dioxide. Excess RECs may be applied to the next year's compliance target. Utilities may use unbundled RECs from out-of-state renewable energy facilities to meet up to 25% of the portfolio standard. Qualifying out-of-state facilities are (1) hydroelectric power facilities with a generation capacity up to 10 MW, or (2) renewable energy facilities placed into service on or after January 1, 2007. Suppliers with fewer than 150,000 customers are not limited in the amount of out-of-state renewable energy RECs they may procure to meet the standard. In its February 2008 rules, the NCUC decided to pursue a third-party tracking system to track the creation, ownership and retirement of RECs. However, the NCUC declined to develop or require participation in a REC-trading platform.



Utilities may recover the incremental cost of renewable resources and up to \$1 million in alternative energy research expenditures annually from customers. The cost per customer account is capped according to the following schedule:

Sector	2008	2012	2015
Residential	\$10	\$12	\$34
Commercial	\$50	\$150	\$150
Industrial	\$500	\$1000	\$1000

The NCUC is responsible for administering the REPS and may adjust or modify the REPS schedule if the commission deems such modifications to be in the public interest. Under the NCUC's final rules, there are no specified penalties or alternative payments for noncompliance, but the commission has existing authority under [Chapter 62](#) of the N.C. General Statutes to enforce compliance.

** The NCUC decided not to expand the definition of biomass specified in N.C. Gen. Stat. § 62-133.8(a)(8): “agricultural waste, animal waste, wood waste, spent pulping liquors, combustible residues, combustible liquids, combustible gases, energy crops, or landfill methane; or waste heat derived from a renewable energy resource.” Further determination of what constitutes a qualifying biomass resource may be made on a case-by-case basis.*

Last DSIRE Review: 03/19/2009

Contact:

Sam Watson

North Carolina Utilities Commission

430 N. Salisbury Street

Raleigh, NC 27611

Phone: (919) 715-7057

E-Mail: swatson@ncuc.net

Web site: <http://www.ncuc.commerce.state.nc.us>





North Carolina Rules, Regulations and Policies

Solar Access Law/Guideline

Solar Access Laws

Incentive Type: Solar Access Law/Guideline

Eligible Renewable/Other Technologies: Passive Solar Space Heat, Solar Water Heat, Solar Space Heat, Solar Thermal Process Heat, Photovoltaics, Solar Pool Heating

Applicable Sectors: Residential

Authority 1: [SB 670 of 2007](#)

Date Enacted: 7/27/2007

Date Effective: 10/1/2007

Summary:

Cities and counties in North Carolina generally may not adopt ordinances prohibiting the installation of "a solar collector that gathers solar radiation as a substitute for traditional energy for water heating, active space heating and cooling, passive heating, or generating electricity for a detached single-family residence." However, city and county ordinances may prohibit the installation of solar-energy collectors that are visible from the ground and installed (1) on the facade of a structure that faces areas open to common or public access; (2) on a roof surface that slopes downward toward the same areas open to common or public access that the facade of the structure faces; or (3) within the area set off by a line running across the facade of the structure extending to the property boundaries on either side of the facade, and those areas of common or public access faced by the structure.

Furthermore, deed restrictions, covenants or similar binding agreements that run with the land *recorded on or after October 1, 2007*, that would prohibit the installation of solar-energy collectors for a detached single-family home on land subject to the deed restriction, covenant or agreement are void and unenforceable. However, this provision does not apply to solar-energy collectors that are visible from the ground and installed:

- On the facade of a structure that faces areas open to common or public access;
- On a roof surface that slopes downward toward the same areas open to common or public access that the facade of the structure faces; or
- Within the area set off by a line running across the facade of the structure extending to the property boundaries on either side of the facade, and those areas of common or public access faced by the structure.

City and county ordinances, deeds, covenants and other binding agreements may regulate the location or screening of a solar-energy collector, provided they do not have the effect of preventing the reasonable use of a solar-energy collector for a detached single-family home. In



any civil action related to North Carolina's solar-access laws, the court may award costs and reasonable attorneys' fees to the prevailing party.

Last DSIRE Review: 08/21/2008

Contact:

Bob Leker

North Carolina Department of
Administration

State Energy Office

1830 Tillery Place

Raleigh, NC 27604

Phone: (919) 733-1907

E-Mail: bob.leker@ncmail.net

Web Site: <http://www.energync.net>





North Carolina Rules, Regulations and Policies

Solar/Wind Permitting Standards

North Carolina Model Wind Ordinance

Incentive Type: Solar/Wind Permitting Standards

Eligible Wind

Renewable/Other

Technologies:

Applicable Sectors: Commercial, Industrial, Residential, Nonprofit, Schools, Local Government, Utility, State Government, Fed. Government, Agricultural, Institutional

Authority 1: [Model Wind Ordinance for Wind Energy Facilities in North Carolina](#)

Summary:

Note: This model ordinance was designed to provide guidance to local governments that wish to develop their own siting rules for wind turbines. While it was developed as part of a cooperative effort involving several state agencies, the model itself has no legal or regulatory authority.

In July, 2008 the North Carolina Wind Working Group, a coalition of state government, non-profit and wind industry organizations, published a model wind ordinance to provide guidance for communities seeking to promote wind energy. For the purposes of this model, wind-energy systems are classified as "small" if they consist of a single wind turbine with a rated generating capacity of 20 kilowatts (kW) or less, "medium" if they have a total rated capacity of more than 20 kW but not greater than 100 kW and "large" if they have a total rated capacity of more than 100 kW.

Height Requirements: Wind turbine height is the distance measured from grade at the center of the tower to the highest point of the turbine rotor or tip of the turbine blade when it reaches its highest elevation. The setbacks (addressed below) are minimum requirements, designed to protect public safety and mitigate the impacts of noise and shadow flicker. By addressing these concerns through minimum setback requirements, the model wind ordinance omits lot size requirements and height restrictions.

Setbacks: The setback is calculated by multiplying the required setback number by the wind turbine height and measured from the center of the wind turbine base to the property line, building or road. Setbacks are generally determined by the following table:



Wind Energy Facility Type	Occupied Buildings on Participating Landowner Property	Occupied Buildings on Non-Participating Landowner Property	Property Lines on Non-Participating Landowner Property	Public Roads
Small System	0.0	1.5	1.1	1.5
Medium System	1.1	2.0	1.5	1.5
Large Scale	1.1	2.5	1.5	1.5

Setbacks may be waived under certain conditions when all affected parties agree to different terms.

Noise Requirements: Noise and shadow flicker issues for small and medium wind energy facilities are addressed by setbacks, or will be addressed by existing noise ordinances. Audible sound from a large wind energy facility should not exceed fifty-five dBA, as measured at any occupied building of a non-participating landowner. Restrictions may be waived under certain conditions.

Installation and Appearance: The installation and design of the wind energy facility should conform to applicable industry standards and meet all local, state and national codes. The wind energy facility should be a non-obtrusive color such as white, off-white or gray, should not be artificially lighted, except to the extent required by the Federal Aviation Administration and should not display advertising or decorative items.

The permit application should contain information about the size, type and location of the wind energy facility; a detailed site plan; proof of compliance with local, state and federal regulations; an environmental assessment; decommissioning plans and any agreements among participating parties.

Last DSIRE Review: 08/28/2008

Contact:

Bob Leker

NC Department of Administration

State Energy Office

1830 Tillery Place

Raleigh, NC 27604

Phone: (919) 733-1907

E-Mail: bob.leker@ncmail.net

Web Site: <http://www.energync.net>





State & Federal Tax Credits for Residential Solar Energy

[North Carolina's tax credit](#) for renewable energy combined with the expanded [federal tax credit](#) for solar energy makes purchasing a solar water heater or a photovoltaic (PV) system more affordable than ever.

Residential Solar Tax Credits at a Glance

Tax Credit Details	North Carolina Tax Credit	Federal Residential Tax Credit
Eligible Solar Technologies:	<ul style="list-style-type: none"> Solar Water Heating Photovoltaics Solar Pool Heating Active Solar Space Heating Passive Solar Space Heating Solar Thermal Process Heat Solar Thermal Electric 	<ul style="list-style-type: none"> Solar Water Heating Photovoltaics
Credit Amount:	35% of installed cost	30% of installed cost
Maximum Credit:	<ul style="list-style-type: none"> Solar Water Heating & Solar Pool Heating: \$1,400 Active & Passive Space Heating; Combined Space & Water Heating: \$3,500 Photovoltaics: \$10,500 	<ul style="list-style-type: none"> Solar Water Heating and Photovoltaics placed into service before 1/1/2009: \$2,000 Solar Water Heating and Photovoltaics placed into service after 12/31/2008: No limit
Window of Opportunity:	Equipment placed in service before January 1, 2011	Equipment placed in service before January 1, 2017
Forms & Instructions:	<ul style="list-style-type: none"> Guidelines for NC Tax Credit NC-478 2008 NC-478 2008 Instructions NC-478G 2008 NC-478G 2008 Instructions NC-478 Series 2008 General Instructions 	<ul style="list-style-type: none"> IRS Form 5695 & Instructions: Residential Energy Credits for Tax Year 2008





Tax Credits: Residential Solar

Version: April 2009

North Carolina Renewable Energy Tax Credit

North Carolina offers a tax credit of 35% of the cost of renewable energy property constructed, purchased or leased by a taxpayer and placed into service in North Carolina during any taxable year through 2010. The credit is subject to various limits (shown above) depending on the type of renewable energy system. Although the focus of this fact sheet is residential solar projects, note that the NC tax credit also applies to wind, hydroelectric, biomass and biofuels equipment.

Expenditures eligible for the tax credit include the cost of the equipment and associated design, construction costs and installation costs less any discounts, rebates, advertising, installation assistance credits, name referral allowances or other similar reductions. Under North Carolina's tax code, the allowable credit may not exceed 50% of a taxpayer's liability for the year, reduced by the sum of all other credits.

Single-family homeowners who purchase and install a qualifying renewable energy system must take the maximum credit amount allowable for the tax year in which the system is installed. If the credit is not used entirely during the first year, the remaining amount may be carried over for the next five years.

Other Solar Incentives in North Carolina

In addition to the tax credit, North Carolina provides for a [property tax exemption](#) for solar water heating and active space heating and cooling systems. This means that the additional value of your solar system (relative to a conventional heating or cooling system) is excluded in the appraisal for property tax purposes. North Carolina also provides for a [property tax abatement](#) for photovoltaic (PV) systems. The abatement exempts 80% of the appraised value of a PV system from property tax.

[NC GreenPower](#), a statewide program designed to encourage the use of renewable energy in North Carolina, offers [production payments](#) (based on electricity production) for grid-tied electricity generated by solar, wind, small hydropower and biomass resources. As of April 2009, NC GreenPower provides payments of \$0.15 per kilowatt-hour for the renewable energy credits (RECs) generated by PV systems 10 kW or smaller. Participating in this program could mean an additional revenue stream of several hundred dollars per year for a PV system. Contact Vicky McCann at NC GreenPower at (919) 716-6398 for more information.





Tax Credits: Residential Solar

Version: April 2009

In October 2005, the North Carolina Utilities Commission required the state's three investor-owned utilities – Progress Energy, Duke Power and Dominion North Carolina Power – to offer [net metering](#) to utility customers. With net metering, during times when a system's electricity generation exceeds the facility's use, the excess electricity flows back to the electricity grid and essentially "spins the meter backwards" to offset electricity consumed at another time. Note that a customer may not simultaneously participate in the NC GreenPower production program and a utility's net metering program. A subsequent April 2009 ruling by the NC Public Utilities Commission made several changes to net metering. All renewable energy sources eligible under the [Renewable Energy and Efficiency Portfolio Standard](#) can now net meter. The system size limit was increased to 1 MW. There is no longer an aggregate cap on the amount of net metered systems. And customer-generators can choose to net meter under any rate tariff they prefer, but the utility will be granted all RECs if the customer chooses any rate other than a time-of-use rate. Progress Energy, Duke Power and Dominion North Carolina Power have until May 1, 2009 to file new net metering tariffs with the commission.

Federal Solar Tax Credit

The federal government offers a 30% tax credit for the purchase and installation of PV systems and solar water heating property for residential use. The tax credits for PV and solar water heating systems installed before January 1, 2009, is capped at \$2,000; but there is no cap for systems installed after December 31, 2008. Eligible expenditures include labor costs for the on-site preparation, assembly, or original installation of the system and for piping or wiring to interconnect the system to the dwelling. The equipment must serve a dwelling unit in the United States used as a residence by the taxpayer. Remember that as a tax credit – not a deduction – the amount of the credit is subtracted from the bottom line of your federal tax bill, dollar for dollar. Any credit that can not be claimed in the first year may be carried forward to the following year. To be eligible for the credit, equipment must be "placed in service" before January 1, 2017.

The federal and state tax credits can be combined. See the [FAQs](#) for more information.

For more information:

To learn more about North Carolina's tax credit for solar energy and other renewables, contact Brian Lips at (919) 515-3954 or brian_lips@ncsu.edu, or call the N.C. Solar Center's toll free number at (800) 33-NC-SUN. To learn more about the federal Business Energy Tax Credit for solar and other renewables, contact the Internal Revenue Service at (800) 829-4933 or visit www.irs.gov.

Visit the *Database of State Incentives for Renewables & Efficiency (DSIRE)* at www.dsireusa.org for more information on these credits and other incentives in North Carolina and elsewhere in the United States. Funded by the U.S. Department of Energy, DSIRE is an ongoing project of the N.C. Solar Center and the Interstate Renewable Energy Council (IREC).





State & Federal Tax Incentives for Commercial Solar Energy

[North Carolina's tax credit](#) and other state incentives, combined with the expanded [federal tax credit](#) and [accelerated depreciation](#) benefits, make purchasing a solar water heater or a photovoltaic (PV) system more cost-effective than ever.

Commercial Solar Tax Credits at a Glance...

Tax Credit Details	North Carolina Tax Credit	Federal Tax Credit
Eligible Solar Technologies:	<ul style="list-style-type: none"> • Solar Water Heating • Photovoltaics • Active Solar Space Heating • Passive Solar Space Heating • Solar Pool Heating • Daylighting • Solar Thermal Electric • Solar Thermal Process Heat 	<ul style="list-style-type: none"> • Solar Water Heating • Photovoltaics • Active Solar Space Heating • Solar Thermal Process Heat • Solar Thermal Electric • Solar Hybrid Lighting
Credit Amount:	35% of installed cost	30% of installed cost
Maximum Credit:	\$2.5 million	No limit
Window of Opportunity:	Equipment placed in service before January 1, 2011	Equipment placed in service before January 1, 2017
Forms & Instructions:	<ul style="list-style-type: none"> • Guidelines for NC Tax Credit • NC-478 2008 • NC-478 2008 Instructions • NC-478G 2008 • NC-478G 2008 Instructions • NC-478 Series 2008 General Instructions 	Form 3468: Investment Credit





Federal Business Energy Investment Tax Credit (ITC)

The federal *Energy Policy Act of 2005* increased the existing federal tax credit for solar-energy property from 10% to 30% for a two-year period (2006 and 2007). This tax credit was later extended through December 31, 2008. The *Energy Improvement and Extension Act of 2008* extended the federal credit through December 31, 2016; allowed electric utilities to claim the credit, and allowed the credit to be used to offset the alternative minimum tax (AMT). Most recently, the American Recovery and Reinvestment Act of 2009 removed a provision which reduced the basis for the tax credit to the extent “subsidized energy financing” was used, and created a mechanism for eligible projects to receive a cash grant from US Department of Treasury in lieu of the tax credit. There is no maximum limit to the credit. If the credit is not used entirely in the year the equipment is placed into service, then the remaining credit may be carried back one year or forward 20 years. Eligible technologies are those that use solar energy to generate electricity, to heat or cool (or provide hot water for use in) a structure, or to provide solar process heat. Hybrid solar lighting systems (those using solar energy to illuminate the inside of a structure using fiber-optic distributed sunlight) installed on or after January 1, 2006, are also eligible for the 30% credit. Passive solar systems, solar pool heating and solar equipment used to generate steam for industrial or commercial processes are not eligible for the federal credit.

Evolution of the Federal Business Energy Tax Credit

Installation Period	Solar	Solar Hybrid Lighting	Fuel Cells	Micro-turbines	Geothermal Electric	Geothermal Heat Pumps	Small Wind Turbines	Combined Heat & Power
Pre-2006	10%	--	--	--	10%	--	--	--
2006 - 2008	30%	30%	30%	10%	10%	--	--	--
2009 - 2016	30%	30%	30%	10%	10%	10%	30%	10%





US Department of Treasury Grants

The American Recovery and Reinvestment Act of 2009 created a [renewable energy grant program](#) that will be administered by the U.S. Department of Treasury. This cash grant will be generally available to projects that are otherwise eligible for the ITC but can not take advantage of it due to diminished tax liability resulting from the recent economic decline. The grants may only be taken in lieu of the ITC, not in addition to it. Grants are available for eligible property placed in service in 2009 or 2010, or a technology-specific “credit termination date” if construction began in 2009 or 2010. Only tax-paying entities are eligible for this grant. Federal, state and local government bodies, non-profits, qualified energy tax credit bond lenders, and cooperative electric companies are not eligible to receive this grant. The grant is also only available to corporate income tax payers, not personal income tax payers. The grants are likely to reduce the basis for determining state tax credits, and taxpayers are strongly encouraged to consult a tax professional before applying for the grant. As of April 2009, the U.S. Department of Treasury has not yet released guidelines and is not accepting applications for this grant. It is expected that guidelines will be released by July of 2009. Once applications are available, the Department of Treasury will be required by law to process applications and issue checks within 60 days of receiving a completed application from a taxpayer, or within 60 days from the date the project is placed in service, whichever is later.

North Carolina Renewable Energy Tax Credit

North Carolina offers a tax credit of 35% of the cost of renewable energy property constructed, purchased or leased by a taxpayer and placed into service in North Carolina during the taxable year. The maximum credit for eligible non-residential renewable energy equipment is \$2.5 million for equipment placed in service in 2006 through December 31, 2010. Although the focus of this fact sheet is on commercial solar projects, note that the N.C. tax credit also applies to wind, hydroelectric, biomass and biofuels equipment.

Expenditures eligible for the tax credit include the cost of the equipment and associated design, construction costs and installation costs less any discounts, rebates, advertising, installation assistance credits, name referral allowances or other similar reductions. Under North Carolina's tax code, the allowable credit may not exceed 50% of a taxpayer's liability for the year, reduced by the sum of all other credits. For multi-family and non-residential projects, the credit is taken in five equal installments beginning with the year in which the property is placed in service. Single-family homeowners take the maximum credit amount allowable for the tax year in which the system is installed. If the credit is not used entirely during these five years, the remaining





amount may be carried forward for the next five years, but it may not be carried back. The credit for non-residential projects may be taken against franchise tax or income tax.

Federal Accelerated Depreciation

Under the federal Modified Accelerated Cost-Recovery System (MACRS), businesses can recover investments in solar, wind and geothermal property through depreciation deductions. 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. For solar, wind and geothermal property, the current MACRS property class life is five years. Systems placed in service in 2008 and 2009 are also eligible for 50% bonus depreciation in the first year. The remaining 50% of the adjusted basis of the property is depreciated over the ordinary 5-year MACRS schedule. (For more information, refer to IRS Publication 946, IRS Form 4562: Depreciation and Amortization, and Instructions for Form 4562, available on the IRS web site at www.irs.gov.)

Note that the basis for calculating depreciation deductions is reduced by only half the value of the federal tax credit. For example, if a business makes an \$80,000 investment and claims a 30% federal tax credit of \$24,000, the basis is reduced by \$12,000, not the entire \$24,000 value of the tax credit. Therefore, the depreciation basis before bonus depreciation would be \$68,000. The adjusted basis after bonus depreciation would then be \$34,000. The chart below illustrates the resulting annual federal tax deductions for the investment – totaling \$23,121 – assuming a tax rate of 34%.

Federal Depreciation Deductions (\$68,000 basis)

Depreciation rate for 5-year recovery period:	Depreciation Deduction	Effective Tax Savings*
Year 1: 50% Bonus Depreciation	\$34,000	\$11,560
Year 1: 20%	\$6,800	\$2,312
Year 2: 32%	\$10,880	\$3,699
Year 3: 19.2%	\$6,528	\$2,220
Year 4: 11.52%	\$3,917	\$1,332
Year 5: 11.52%	\$3,917	\$1,332
Year 6: 5.76%	\$1,958	\$666
Total	\$68,000	\$23,121

* Based on 34% federal tax rate





Combining Federal and State Tax Incentives

Businesses may claim both the 35% state tax credit and the 30% federal tax credit for solar energy. Note that the state credit applies to some solar technologies not eligible for the federal credit (and vice versa). See the “Commercial Solar Tax Credits” table above for technology eligibility.

The example below illustrates the interaction of the state and federal tax credits and depreciation deduction benefits. The tax credits are not directly additive as the value of the state tax credit is essentially taxed at the federal level. The combined incentives reduce the initial cost of an \$80,000 solar-energy system to \$15,768 if the business is able to take advantage of all of the tax incentives. Note this calculation does not account for state depreciation deductions.

North Carolina follows the federal MACRS schedule for depreciation, but does not provide for bonus depreciation. The basis for calculating state deductions is reduced by the value of federal and state tax credits. Using the example on the next page, this would be \$80,000 (investment) minus \$24,000 (federal credit) minus \$28,000 (state credit) = \$28,000. Additionally, North Carolina disallows 85% of federal bonus depreciation, resulting in an adjustment to state taxes. In practice this requires taxpayers to add 85% of the federal bonus depreciation claimed during the prior year back into their state taxable income. The value added back may then be deducted over the succeeding five years on a straight line basis (20% annually). The table on the next page reflects the state adjustment as an increase in state taxes, but does not include the future allowable deductions.

Net Cost of a 10-kW Commercial Photovoltaic System

Cost & Savings	Amount
Eligible Expenditures	\$80,000
State Tax Credit	(\$28,000)
Federal Tax Credit	(\$24,000)
Federal Tax Adjustment*	\$9,520
Federal and State Depreciation Deductions**	(\$23,473)
State Tax Adjustment for Fed Bonus Depreciation***	\$1,994
Net Cost	\$15,768





Other Solar Incentives in North Carolina

North Carolina provides for a [property tax exemption](#) for solar water heating and active space heating or cooling systems. This means that the additional value of your solar system (relative to a conventional heating or cooling system) is excluded in the appraisal for property tax purposes. North Carolina also provides a [property tax abatement](#) for photovoltaic (PV) and solar thermal electric systems. The abatement exempts 80% of the appraised value of a PV system from property tax.

Businesses and other non-residential organizations in North Carolina are eligible for a low-interest [Energy Improvement Loan](#) from the N.C. State Energy Office. Loans of up to \$500,000 with an interest rate of 1% and a 10-year re-payment term are available for renewable energy projects.

[NC GreenPower](#), a statewide program designed to encourage the use of renewable energy in North Carolina, offers [production payments](#) (based on electricity production) in exchange for renewable energy credits (RECs) for grid-tied electricity generated by solar, wind, small hydropower and biomass resources. As of January 2009, NC GreenPower provides payments of \$0.15 per kilowatt-hour generated by PV systems 10 kW or smaller. Participating in this program could mean an additional revenue stream of several hundred dollars per year for a PV system. Contact Vicky McCann at NC GreenPower at (919) 716-6398 for more information.

In October 2005, the North Carolina Utilities Commission required the state's three investor-owned utilities – Progress Energy, Duke Power and Dominion North Carolina Power – to offer [net metering](#) to utility customers. With net metering, during times when a system's electricity generation exceeds the facility's use, the excess electricity flows back to the electricity grid and essentially "spins the meter backwards" to offset electricity consumed at another time. Note that a customer may not simultaneously participate in the NC GreenPower production program and a utility's net metering program. A subsequent April 2009 ruling by the NC Public Utilities Commission made several changes to net metering. All renewable energy sources eligible under the [Renewable Energy and Efficiency Portfolio Standard](#) can now net meter. The system size limit was increased to 1 MW. There is no longer an aggregate cap on the amount of net metered systems. Customer-generators can choose to net meter under any rate tariff they prefer, but the utility will be granted all RECs if the customer chooses any rate other than a time-of-use rate. Progress Energy, Duke Power and Dominion North Carolina Power have until May 1, 2009 to file new net metering tariffs with the commission.





North Carolina has an array of incentives to support and encourage the use of alternative fuels.

Why are incentives important?

- ✓ North Carolina has a rich agricultural heritage that can benefit from the production of agriculturally based renewable fuels in our state. Currently our state imports all of the energy used in transportation from other states and countries.
- ✓ Alternative fuels burn cleaner than conventional gasoline and diesel. Statewide, highway and off-road mobile sources account for a significant source of our state's air quality problems. In larger cities, mobile sources (highway and off-road) are the single greatest source of emissions, generating 48% of volatile organic compounds (VOCs) and oxides of nitrogen (NOx)- primary components of our ozone problem.

Renewable Energy Property Tax Credit (2005 Senate Bill 1149):

- Taxpayers who construct, purchase, or lease renewable energy property are eligible for a tax credit equal to 35% of the cost of the property. Renewable energy property includes: equipment that uses renewable biomass resources to produce ethanol, methanol, biodiesel, or methane produced via anaerobic biogas utilizing agricultural and animal waste or garbage; and related devices for converting, conditioning, and storing the liquid fuels and gas produced with biomass equipment.
- A ceiling of \$250,000 per installation applies to renewable energy property placed in service for any purpose other than residential and must be taken in five equal installments beginning with the taxable year in which the property is placed in service. Property must be placed in service before January 1, 2011
- For more information: http://www.eere.energy.gov/afdc/progs/view_ind.cgi?afdc/5483/0

Tax Credit for Alternative Fuel Refueling and Production Facilities (2004 House Bill 1636):

- A tax credit is available for facilities that dispense biodiesel and ethanol/gasoline mixtures consisting of at least 70% ethanol.
- The credit is equal to 15% the taxpayer's cost to construct and install the dispensing facility, including pumps, storage tanks and related equipment, that is directly and exclusively used for dispensing or storing the fuel. Equipment for storing and dispensing must clearly be identified as being associated with renewable fuel.





NC Incentives: Transportation

- The credit must be taken in three equal annual installments beginning with the taxable year in which the facility is placed in service.
- A taxpayer that constructs and places in service in a commercial facility for processing renewable fuel is allowed a credit equal to 25% of the cost to the taxpayer of constructing and equipping the facility. The entire credit may not be taken for the taxable year in which the facility is placed in service, but must be taken in seven equal annual installments beginning with the taxable year in which the facility is placed in service.
- Facilities must be placed in service before January 1, 2008.

Alternative Fuel Tax Exemption:

- The retail sale, use, storage or consumption of alternative fuels is exempt from the state retail sales and use tax.
- For more information: http://www.eere.energy.gov/afdc/progs/view_ind.cgi?afdc/5664/0

Mobile Source Emission Reduction Grants:

- More than \$500,000 in funding is available annually through a competitive grant program administered by the Department of Environment and Natural Resources Division of Air Quality.
- The purpose of the Mobile Source Emissions Reduction Grants program is to achieve actual reductions from on- and off- road mobile source related emissions in North Carolina.
- Funds are available for the incremental cost of purchasing alternative fuel vehicles and constructing publicly accessible facilities for dispensing alternative fuel and other projects that reduce mobile emissions.
- Annual grant deadline is December 31. Award announcements are generally made in March of the following year.
- For more information and grant application : http://daq.state.nc.us/motor/ms_grants/

Clean Fuel Advanced Technology Grants:

- More than \$1.5 million in funding will be available through the NC Solar Center for a program supported by the NC Department of Transportation, NC Division of Air Quality and the State Energy Office.
- Grants will be provided for a portion of the incremental costs of alternative fuel vehicles, refueling infrastructure and other projects that reduce mobile emissions in national ambient air quality non-attainment and maintenance counties in North Carolina.
- Annual Mobile Clean Air Renewable Energy (CARE) awards will be established to recognize exemplary efforts throughout North Carolina.

For more information:

Visit the Clean Transportation website at www.ncsc.ncsu.edu or contact Anne Tazewell at (919)513-7831 or email her at anne_tazewell@ncsu.edu





Tax Incentives for Alternative Fuel and Advanced Technology Vehicles

Fast Facts:

- ✓ Imported petroleum has accounted for over 50% of petroleum consumed by the U.S. each year since 1998 and in 2004 was nearly 60%. Increasing petroleum demand, along with declining U.S. production of oil are main causes for this reliance on imported oil.
- ✓ Transportation (cars, trucks and buses) consumes two thirds of all oil used in the U.S.
- ✓ All other energy sectors have diversified while transportation is still 95-98% reliant on petroleum products- gasoline and diesel.

What incentives are available?

Federal Tax Credits for Purchase of Hybrids (available 2006-2010):

- Hybrid electric vehicles and vehicles with cleaner burning diesel engines (advanced lean-burn engines), can earn you a tax credit of up to \$3,400 for light duty vehicles (under 8,500 lbs).
- Credit is calculated based on vehicle's fuel economy rating and lifetime fuel savings as compared to 2002 vehicle standards and models.
- Credit will phase out shortly after an automaker sells 60,000 eligible cars. After the manufacturer has sold 60,000 eligible hybrids, the credit is reduced by 50% for the following two quarters, 25% for the next two quarters and then none after that. Customers will have to check with their dealer at the time of purchase to see if the vehicles they are interested in are still eligible.
- For vehicles that weigh more 8500 lbs, the credit is calculated based on a percentage of the qualified "incremental hybrid cost" as certified by the manufacturer. The credit will range from 20-40% of the incremental cost.

The Internal Revenue Service (IRS) published a guide (www.irs.gov/pub/irs-drop/n-06-09.pdf) that describes how manufacturers can certify to the purchasers of these vehicles that the vehicles are indeed eligible for the tax credit and what size tax credit they will earn, which removes most of the burden from the purchaser. For manufacturers that are selling high volumes of eligible vehicles, such as Toyota and Honda, people seeking to earn the credit should act quickly. Diesel vehicles eligible for the tax credit with advanced lean-burn technology are outlined by the Diesel Technology Forum (www.dieselforum.org/policy-insider/fuel-efficiency/federal-clean-diesel-tax-credit/), which notes that eligible vehicles will probably not be available until the 2007 model year. Other sites that keep up-to-date information on these tax credits are the Electric Drive Transportation Association (www.electricdrive.org) and the Alliance to Save Energy (www.ase.org).

For a side by side comparison of vehicles visit: www.fueleconomy.gov or <http://www.epa.gov/greenvehicles/>





Alternative Fuel Vehicle Tax Credits (available 2006-2010)

- Provides a 50% tax credit based on the incremental cost of a new, dedicated alternative fuel vehicle, plus an additional 30 percent if the vehicle meets certain tighter emission standards. The amount of the credit is limited by caps on the incremental cost as follows: \$5,000 for a vehicle up to 8,500 pounds; \$10,000 for a vehicle of 8,500 pounds up to 14,000 pounds; \$25,000 for a vehicle of 14,000 pounds up to 26,000 pounds; and, \$40,000 for a vehicle above 26,000 pounds. These limits result in maximum credits ranging from \$2,500 to \$32,000 depending on the size of the vehicle. For non-tax-paying entities, the seller of the vehicle can take the credit. Administrative procedures for claiming the credit are currently being developed by the IRS.

For more information:

Anne Tazewell ~ Alternative Fuel Program Manager/NCSC
Phone: (919)-513-7831 Email: anne_tazewell@ncsu.edu





Federal and State Incentives to Produce Alternative Fuels

Why are incentives important?

- ✓ North Carolina has a rich agricultural heritage that can benefit from the production of agriculturally based renewable fuels. Currently our state imports all of the energy used in transportation from other states and countries. Incentives will increase demand and support in state production and use.
- ✓ Alternative fuels burn cleaner than conventional gasoline and diesel. Statewide, highway and off-road mobile sources account for a significant source of our state's air quality problems. Mobile sources are the single greatest source of emissions, generating 50% of the oxides of nitrogen (NOx)- a primary component of our ground level ozone problem.

Renewable Energy Property Tax Credit (2005 NC Senate Bill 1149):

- Taxpayers who construct, purchase, or lease renewable energy property are eligible for a tax credit equal to 35% of the cost of the property. Renewable energy property includes: equipment that uses renewable biomass resources to produce ethanol, methanol, biodiesel, or methane produced via anaerobic biogas utilizing agricultural and animal waste or garbage; and related devices for converting, conditioning, and storing the liquid fuels and gas produced with biomass equipment.
- A ceiling of \$250,000 per installation applies to renewable energy property placed in service for any purpose other than residential and must be taken in five equal installments beginning with the taxable year in which the property is placed in service. Property must be placed in service before January 1, 2011

For more information: http://www.eere.energy.gov/afdc/progs/view_ind.cgi?afdc/5483/0

Tax Credit for Alternative Fuel Production Facilities (2004 NC House Bill 1636):

- A taxpayer that constructs and places in service a commercial facility for processing renewable fuel is allowed a credit equal to twenty-five percent (25%) of the cost to the taxpayer of constructing and equipping the facility. The entire credit may not be taken for the taxable year in which the facility is placed in service but must be taken in seven equal annual installments beginning with the taxable year in which the facility is placed in service.
- Facilities must be placed in service before January 1, 2008. Reference North Carolina General Statutes 105 129.16D)

Commodity Corporation Credits for production of ethanol and biodiesel

- The U.S. Department of Agriculture established the Commodity Credit Corporation (CCC) Bioenergy Program in Fiscal Year 2001. Under the program, the CCC makes payments to eligible bioenergy producers to encourage increased purchases of agricultural commodities for the purpose of expanding production of bioenergy (ethanol and biodiesel) and to encourage the construction of new production capacity.
- The 2002 Farm Bill continued the program through Fiscal Year 2006, providing \$150 million annually. Payments are based on the increase in bioenergy production compared to the previous year's production.





Incentives: Alternative Fuel Production

- The program is structured to encourage participation by smaller producers. Producers with less than 65 million gallons of annual production capacity are reimbursed on a ratio of one feedstock unit for every 2.5 feedstock used, while larger facilities are reimbursed on a ratio of one to 3.5. Additionally, a payment limitation restricts the amount of funds any single producer may obtain annually under the program to 5% of the total funds available.
- Producers wishing to enroll in the program should obtain a Bioenergy Program Agreement by calling 816-926-6525. For additional information, contact James Goff at 202-720-5396.

Renewable Fuels Standard:

- A renewable fuel standard (RFS) requires that transportation fuel sold in the United States contain a total of 4 billion gallons of biofuels in 2006, increasing to 7.5 billion gallons in 2012.
- Provides refiners flexibility by creating a credit trading program that allows refiners to use renewable fuels where and when it is most efficient and cost-effective for them to do so. The credit trading program will result in lower costs to refiners and thus, consumers. RFS credits have a lifespan of 12 months.
- Provides for 2.78% by volume renewable fuel use in 2006, if federal regulations have not yet been promulgated by the U.S. Environmental Protection Agency.
- The RFS eliminates the reformulated gasoline (RFG) requirements. In the Clean Air Act, Congress specified that RFG contain oxygen — two percent by weight. Ethanol and MTBE (methyl tertiary butyl ether) have been the two most commonly used substances that add oxygen to gasoline. The Energy Policy Act of 2005 (H.R. 6) removes the oxygenate requirement 270 days after enactment, in lieu of a nationwide renewable fuels standard (RFS).
- Every gallon of cellulose-derived ethanol is equal to 2.5 gallons of renewable fuel. Beginning in 2013, a minimum of 250 million gallons a year of cellulosic derived ethanol be included in the RFS.
- The RFS will promote low blends of ethanol added to gasoline as an octane enhancer and oxygenate and low blends of biodiesel as a lubricity additive in ultra low sulfur diesel.

Phase Out the Use of MTBE in Gasoline (NC House Bill 1336)

- Requires the NC Department of Environment and Natural Resources to develop and implement a plan to phase out the use of the fuel additive methyl tertiary butyl ether (MTBE) by the end of 2007.
- MTBE is classified by the U.S. Environmental Protection Agency as a possible human carcinogen.
- In NC, MTBE has leaked out of more than 1,200 underground fuel storage tanks into groundwater, contaminating a significant number of underground drinking water supplies across the state.
- Ethanol is a replacement for MTBE.

For more information, contact:

Anne Tazewell
Phone: (919)513-7831
Fax: (919)715-6159
Email: anne_tazewell@ncsu.edu





There are several state and federal tax incentives for alternative fuel use and refueling infrastructure development.

Why are incentives important? Fast Facts:

- ✓ Imported petroleum has accounted for over 50% of petroleum consumed by the U.S. each year since 1998 and in 2004 was nearly 60%. Increasing petroleum demand, along with declining U.S. production of oil are main causes for this reliance on imported oil.
- ✓ Transportation (cars, trucks and buses) consumes two thirds of all oil used in the U.S.
- ✓ All other energy sectors have diversified while transportation is still 95-98% reliant on petroleum products- gasoline and diesel.

What incentives are available?

Biodiesel Blenders Tax Credit (available 2005-2008):

- A \$1.00/ gallon tax credit for “agri-biodiesel” (1st use vegetable oils and animal fats-including palm and fish oil) and a \$.50/gallon tax credit for biodiesel produced from recycled oils and animal fats is available for biodiesel blended with petroleum diesel. The benefit of the credit is calculated based on the percent of biodiesel blended with petroleum diesel, so that a 20% of “agri-biodiesel” is worth .20 per gallon. Biodiesel blended fuel is defined as any blend equal or greater than 1 gallon of diesel fuel with 999 gallons of biodiesel.
- Blenders must register with the IRS to claim the tax credit by completing Form 637-M. Contact local IRS field office for further information about the registration process and timing. Registration can take a considerable amount of time. Contact: IRS Southeast field office manager: Willie Clayton (407) 660-5822 Ext. 210.
- Registered blenders claim the tax credit on Form 720. A direct link to IRS forms is: <http://www.irs.gov/formspubs/lists/0,,id=97817,00.html>. A blender does not have to have a tax liability to receive the credit.
- On-road and off-road diesel fuel are eligible for the blenders credit.

For more information contact: <http://www.biodiesel.org/>





Volumetric Ethanol Excise Tax Credit (VEETC) (available 2005-2010):

- Allows for a tax refund of 51 cents per gallon on each gallon of ethanol blended with gasoline to be paid within 20-28 days of blending gasoline with ethanol. For E85 (85% ethanol, 15% gasoline) the credit is equal to .43 cents per gallon. For E10, the credit is worth .05 cents per gallon.
- VEETC eliminates the need of the alcohol fuels income tax credit which was cumbersome and subject to alternative minimum tax requirements. VEETC provides credit for every gallon of ethanol used in the marketplace without regard to the income of the taxpayer or whether the ethanol is used in a taxed fuel or tax exempt fuel.
- Blenders must register with the IRS to claim the tax credit by completing Form 637-M. Contact local IRS field office for further information about the registration process and timing. Registered blenders may claim the credit weekly for refunds greater than \$200 with Form 8849, quarterly with Form 720 or annually with Form 4136. The same refund forms are used for both biodiesel and ethanol blending.

For more information visit: <http://www.ethanolrfa.org/policy/regulations/>

Refueling Infrastructure Tax Credit:

- The 2005 Energy Bill provides a 30% tax credit (up to \$30,000) for refueling equipment for E85 ethanol, compressed natural gas, liquefied petroleum gas, hydrogen, and biodiesel blends containing at least 20 percent biodiesel.
- The 2005 Transportation bill increases credit for infrastructure up to \$50,000. Administrative procedures for claiming the infrastructure credits are currently being developed by the IRS.

NC Tax Credit for Alternative Fuel Refueling infrastructure (2004 House Bill 1636):

- A tax credit is available for facilities that dispense biodiesel and ethanol/gasoline mixtures consisting of at least 70% ethanol.
- The credit is equal to 15% the taxpayer's cost to construct and install the dispensing facility, including pumps, storage tanks, and related equipment, that is directly and exclusively used for dispensing or storing the fuel. Equipment for storing and dispensing must clearly be identified as being associated with renewable fuel.
- The credit must be taken in three equal annual installments beginning with the taxable year in which the facility is placed in service.
- Facilities must be placed in service before January 1, 2008. Reference North Carolina General Statutes 105 129.16D





NC Alternative Fuel Tax Exemption:

- The retail sale, use, storage or consumption of alternative fuels is exempt from the state's sales and use tax. Sales and use tax is applied to conventional off road fuel sales and is 7% of the sales price. For example if the price of B100 is \$3.00 per gallon, the sales tax exemption would be a savings of .042 cents per gallon on a B20 blend. This incentive may be especially attractive for biodiesel blended with fuel oil for heating applications and biodiesel sold to landscaping and construction companies.
- Biofuels distributors must first register with the NC Department of Revenue as an Alcohol Fuel and Biodiesel Provider (Form GAS 1264) and post a minimum of a \$2,000 bond. The amount of the bond is in proportion to on road fuel sales. Fuel sales are reported on Form E500.
- Biodiesel may be splashed blended up to a B20 blend with mechanically dyed off road diesel (as per IRS Transitional Rules).
- To register as a fuel provider, call the North Carolina Motor Fuels and Tax Office in Raleigh for more information: 877- 308- 9092 or 919-733-3409.

For more information about the tax exemption:

http://www.eere.energy.gov/afdc/progs/view_ind.cgi?afdc/5664/0

North Carolina Soybean Producers Association Biodiesel Distributor Rebate Program:

- New dealers and distributors are eligible for a rebate on the first 250 of 500 gallons of soy biodiesel (B100) purchased
- A Biodiesel Equipment Enhancement Rebate for new dealers and distributors will help cover the cost of any equipment changes that may be needed to begin selling soy biodiesel. Rebate is 1/2 of the cost of equipment with a maximum of \$2,500 per dealer.
- Rebates are available as long as funding lasts. Contact Lynn Burgdorf or Jim Wilder at 919-839-5700 for more information.

For more information contact:

Anne Tazewell Alternative Fuels Program Manager/NCSC
Phone: 919-513-7831 Email: anne_tazewell@ncsu.edu



State Energy Plan

\$3.1 billion nationally for state energy programs

- Funds provided to state energy offices

N.C. State Energy Office to receive \$75.9 million

- Application filed with federal Energy Department
- Energy Department approval no later than mid-July

Six focus areas for use of Recovery Act funds through the N.C. State Energy Program:

- Support small business and industry through energy savings
- Grow North Carolina's green workforce
- Foster renewable energy technology and resource innovation
- Improve energy efficiency in local and state government
- Promote residential energy efficiency and renewable energy
- Create and Energy Investment Revolving Loan Fund

Targeted Efforts

North Carolina will work with strategic partners in the public and private sectors and coordinate with other revenue sources, including those provided through the federal Recovery Act, to maximize available resources and drive job creation.

- **Support small business and industry through energy savings (\$11.5 million)**
 - Identify and implement energy saving measures in small business and industry
 - Target "Main Street" communities
 - Commercial renewable energy system grants
 - Nonprofit energy management program

State Energy Program- Federal Recovery Act

- **Grow North Carolina’s green workforce “Jobs Now” (\$8.85 million)**
 - Continuing education for building code inspectors
 - **Workforce Development Initiative: Renewable energy, energy efficiency and alternative fuels technology training, using community colleges, the UNC system, high school and early college programs**

- **Create an energy investment Revolving loan fund (\$18 million)**
 - **Low and/or no interest loans to support energy efficiency and renewable energy projects**
 - Eligible parties include small businesses, industry, nonprofits, local governments, public schools, community colleges and state agencies and universities
 - Up to \$1 million with terms up to 20 years

- **Improve government energy efficiency (\$9.5 million)**
 - **Develop energy assessments and strategic energy plans**
 - **Identified and new projects**
 - 270 energy projects at state agencies, universities and community colleges can be deployed immediately
 - Seek more proposals from public schools, local governments, and state agencies

- **Promote residential energy efficiency and renewable energy (\$10 million)**
 - **Promote energy efficiency in new affordable housing (\$3 million)**
 - “Energy Star” manufactured homes
 - New affordable housing units
 - **Energy audits and implementation for existing homes (\$7 million)**
 - Matching funds and other incentives to owners of existing homes for energy audits and implementation of efficiency and renewable energy measures

- **Foster renewable energy technology and resource innovation (\$13.5 million)**
 - **Alternative fuels and biofuels development (\$3.5 million)**
 - Partner with the N.C. Biofuels Center and others to award competitive grants for promising biofuels and alternative fuel projects
 - **N.C. Green Business Fund (\$10 million)**
 - Competitive grants for innovative energy projects



State Energy Program- Federal Recovery Act

Energy Efficiency and Conservation Block Grant Program:

- Reduce fossil fuel emissions
- Cut total energy use of eligible entities
- Improve energy efficiency in transportation, building and other sectors
- **\$3.2 billion is provided nationally for the Energy Efficiency and Conservation Block Grant**
 - This block grant program had not previously been funded
 - Will be operated under the federal DOE Office of Weatherization and Intergovernmental Programs, Office of Energy Efficiency and Renewable Energy
- **\$400 million will be distributed through a competitive program among state, local and tribal entities.**
- **\$2.8 billion remaining will be distributed:**
 - 16% through the states to counties under 200,000 and municipalities under 35,000
 - 12% directly to state energy offices for the State Energy Program
 - 68% directly to 1,700 larger cities in the nation
 - 2% for competitive program
 - 2% available to tribes

\$58 Million to Cities & Counties

Asheville \$804,700

Burlington \$223,900

Cary \$1,166,800

Chapel Hill \$ 554,900

Charlotte \$6,780,100

Concord \$638,800

Durham \$2,173,600

Fayetteville \$1,652,900

Gastonia \$705,700

Greensboro \$183,600

Greensboro \$2,554,900

Greenville \$ 777,600

Hickory \$209,300

High Point \$998,600

Huntersville \$175,100

Jacksonville \$781,600

Kannapolis \$170,300

Raleigh \$3,820,400

Rocky Mount \$ 572,100

Wilmington \$1,039,900

Wilson \$ 214,900

Winston-Salem \$ 2,262,000

Buncombe \$ 624,800

Cumberland \$ 590,700

Davidson \$ 631,100

Gaston \$525,600

Iredell \$645,100

Johnston \$636,200

Mecklenburg \$649,500

Randolph \$578,200

Union \$751,800

Wake \$3,030,300

Cherokee Indians \$ 253,100

State Energy Office \$20,925,300





State Energy Program- Federal Recovery Act

- Funding for non-designated cities and counties: \$12,555,180
- Funding likely to be competitive
- Funding for State Energy Program: \$8,370,120

Block Grant Timeline

- Early June: Post draft application on *ncrecovery.gov* website for public comment
- June 25: State Energy Office application due
- June 25: Directly funded city and county applications due.
- Energy secretary has up to 120 days to review and comment on applications.
- State Energy Office provides sub-grants no later than 180 days after Energy secretary approval.
- Funds must be obligated within 18 months.
- Performance period is 36 months.

Block Grant Awards

- Special consideration for projects that promote and enhance the objectives of the Recovery Act, especially job creation, preservation, and economic recovery, in a expeditious manner.
- Funds can be used with other spending as necessary to complete projects, but tracking and reporting must be separate.
- No more than 10 percent of the grants can be used for administrative expenses.

Use of Funds

- Develop and implement an energy efficiency and conservation strategy
- Retain technical consultant services to assist in the development of such strategies
- Conduct residential and commercial energy audits
- Establish financial incentive programs for energy efficiency improvements
- Provide grants to nonprofits and government agencies for energy efficiency renovations
- Implement energy efficiency programs for buildings within the appropriate jurisdiction
- Implement programs to conserve energy used in transportation
- Develop building code and inspection services that promote energy efficiency
- Install energy distribution technologies that significantly increase energy efficiency
- Increase participation and efficiency of material conservation programs
- Use technologies that reduce, capture and use methane from landfills and similar sources
-





State Energy Program- Federal Recovery Act

- **Replace traffic signals and street lighting with more energy efficient lighting technologies**
- **Install renewable energy technology on government buildings to generate electricity**

Required Efficiency Strategy

- **Submit an energy efficiency strategy with the application or within 120 days of grant award**
- **Strategy must be approved by the Energy Department**
- **Report energy efficiency gains and status of the strategy annually**

State Energy Office June 4, 2009





Federal Financial Incentives

Corporate Deduction

Energy Efficient Commercial Buildings Tax Deduction

Incentive Type: Corporate Deduction

Eligible Efficiency Technologies: Equipment Insulation, Water Heaters, Lighting, Lighting Controls/Sensors, Chillers, Furnaces, Boilers, Heat pumps, Air conditioners, CHP/Cogeneration, Caulking/Weather-stripping, Duct/Air sealing, Building Insulation, Windows, Doors, Siding, Roofs, Comprehensive Measures/Whole Building

Applicable Sectors: Commercial, Construction, State Government, Fed. Government, (Deductions associated with government buildings are transferred to the designer)

Amount: \$0.30-\$1.80 per square foot, depending on technology and amount of energy reduction

Maximum Incentive: \$1.80 per square foot

Equipment

Requirements: Must meet certification requirements

Web Site: <http://www.efficientbuildings.org>

Authority 1: [26 USC § 179D](#)

Date Enacted: 8/8/2005 (Amended 2008)

Date Effective: 1/1/2006

Expiration Date: 12/31/2013

Authority 2: [H.R. 1424: Div. B, Sec. 303 \(The Energy Improvement and Extension Act of 2008\)](#)

Date Enacted: 10/3/2008

Expiration Date: 12/31/2013

Summary:

The federal Energy Policy Act of 2005 established a tax deduction for energy-efficient commercial buildings applicable to qualifying systems and buildings placed in service from January 1, 2006, through December 31, 2007. This deduction was subsequently extended through 2008, and then again through 2013 by Section 303 of the federal Energy Improvement and Extension Act of 2008 (H.R. 1424, Division B), enacted in October 2008.

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.



Deductions of \$0.60 per square foot are available to owners of buildings in which individual lighting, building envelope, or heating and cooling systems meet target levels that would reasonably contribute to an overall building savings of 50% if additional systems were installed.

The deductions are available primarily to building owners, although tenants may be eligible if they make construction expenditures. In the case of energy efficient systems installed on or in government property, tax deductions will be given to the person primarily responsible for the systems' design. Deductions are taken in the year when construction is completed.

The IRS released interim guidance ([IRS Notice 2006-52](#)) in June 2006 to establish a process to allow taxpayers to obtain a certification that the property satisfies the energy efficiency requirements contained in the statute. [IRS Notice 2008-40](#) was issued in March of 2008 to further clarify the rules. NREL published a report ([NREL/TP-550-40228](#)) in February 2007 which provides guidelines for the modeling and inspection of energy savings required by the statute.

Last DSIRE Review: 10/07/2008

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>





Federal Financial Incentives Corporate Depreciation

Modified Accelerated Cost-Recovery System (MACRS) + Bonus Depreciation (2008-2009)

Incentive Type: Corporate Depreciation

Eligible Renewable/Other 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

Applicable Sectors: Commercial, Industrial

Authority 1: [26 USC § 168](#)

Date Effective: 1986

Authority 2: [26 USC § 48](#)

Summary:

Under the federal Modified Accelerated Cost-Recovery System (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 the MACRS, which refers to 26 USC § 48(a)(3)(A), often known as the energy investment tax credit or ITC to define eligible property. Such property currently includes:

- a variety of solar electric and solar thermal technologies
- fuel cells and microturbines
- geothermal electric
- direct-use geothermal and geothermal heat pumps
- small wind (100 kW or less)
- combined heat and power (CHP).
- The provision which defines ITC technologies as eligible also adds the general term "wind" as an eligible technology, extending the five-year schedule to large wind facilities as well.

In addition, for certain other biomass property, the MACRS property class life is seven years. Eligible biomass property generally includes assets used in the conversion of biomass to heat or to a solid, liquid or gaseous fuel, and to equipment and structures used to receive, handle, collect and process biomass in a waterwall, combustion system, or refuse-derived fuel system to create hot water, gas, steam and electricity.



The 5-year schedule for most types of solar, geothermal, and wind property has been in place since 1986. The federal Energy Policy Act of 2005 (EPAct 2005) classified fuel cells, microturbines and solar hybrid lighting technologies as five-year property as well by adding them to § 48(a)(3)(A). This section was further expanded in October 2008 by the addition of geothermal heat pumps, combined heat and power, and small wind under the The Energy Improvement and Extension Act of 2008.

The federal Economic Stimulus Act of 2008, enacted in February 2008, included a 50% bonus depreciation (26 USC § 168(k)) provision for eligible renewable-energy systems acquired and placed in service in 2008. This provision was extended (retroactively to the entire 2009 tax year) under the same terms by [The American Recovery and Reinvestment Act of 2009](#) enacted in February 2009. To qualify for bonus depreciation, a project must satisfy these criteria:

- the property must have a recovery period of 20 years or less under normal federal tax depreciation rules;
- the original use of the property must commence with the taxpayer claiming the deduction;
- the property generally must have been acquired during 2008 or 2009; and
- the property must have been placed in service during 2008 or 2009 (or, in certain limited cases, in 2010).

If property meets these requirements, the owner is entitled to deduct 50% of the adjusted basis of the property in 2008 and 2009. The remaining 50% of the adjusted basis of the property is depreciated over the ordinary depreciation schedule. The bonus depreciation rules do not override the depreciation limit applicable to projects qualifying for the federal business energy tax credit. Before calculating depreciation for such a project, including any bonus depreciation, the adjusted basis of the project must be reduced by one-half of the amount of the energy credit for which the project qualifies.

For more information on the federal MACRS, see *IRS Publication 946, IRS Form 4562: Depreciation and Amortization*, and *Instructions for Form 4562*. The [IRS web site](#) provides a search mechanism for forms and publications. Enter the relevant form, publication name or number, and click "GO" to receive the requested form or publication.

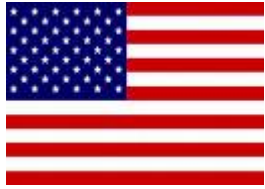
**Note that the definitions of eligible technologies included in this entry are somewhat simplified versions of those contained in tax code, which often contain additional caveats, restrictions, and modifications. Those interested in this incentive should review the relevant sections of the code in detail prior to making business decisions.*

Last DSIRE Review: 02/19/2009

Contact:

Public Information - IRS U.S. Internal Revenue Service
1111 Constitution Avenue, N.W., Washington, DC 20224
Phone: (800) 829-1040, **Web Site:** <http://www.irs.gov>





Federal Financial Incentives Corporate Exemption

Residential Energy Conservation Subsidy Exclusion (Corporate)

Incentive Type: Corporate Exemption

Eligible Efficiency

Technologies: Yes; specific technologies not identified

Eligible Solar Water Heat, Solar Space Heat, Photovoltaics

Renewable/Other

Technologies:

Applicable Sectors: Residential, Multi-Family Residential

Amount: 100% of the subsidy

Terms: Applies to energy conservation measures on dwelling units only

Web Site: <http://www.irs.gov/publications/p525/index.html>

Authority 1: [26 USC § 136](#)

Summary:

According to Section 136 of the IRS Code, 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."

The term "energy conservation measure" includes installations or modifications primarily designed to reduce consumption of electricity or natural gas, or improve the management of energy demand. Eligible dwelling units include houses, apartments, condominiums, mobile homes, boats and similar properties. If a building or structure contains both dwelling and other units, any subsidy must be properly allocated.

Given the definition of "energy conservation measure," there is strong evidence that utility rebates for residential solar thermal and solar electric projects may be nontaxable. However, the IRS has not ruled definitively on this issue. For taxpayers considering using this provision for renewable energy systems, consultation with a tax attorney is advised.

Other types of utility subsidies that may come in the form of credits or reduced rates may also be



nontaxable, according to IRS Publication 525:

"Utility rebates. If you are a customer of an electric utility company and you participate in the utility's energy conservation program, you may receive on your monthly electric bill either: a reduction in the purchase price of electricity furnished to you (rate reduction), or a nonrefundable credit against the purchase price of the electricity. The amount of the rate reduction or nonrefundable credit is not included in your income."

** The term "public utility" is defined as an entity "engaged in the sale of electricity or natural gas to residential, commercial, or industrial customers for use by such customers." The term includes federal, state and local government entities.*

Last DSIRE Review: 06/19/2008

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>





Federal Financial Incentives

Corporate Tax Credit

Business Energy Investment Tax Credit (ITC)

Incentive Type: Corporate Tax Credit

Eligible Renewable/Other 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

Applicable Sectors: Commercial, Industrial, Utility

Amount: 30% for solar, fuel cells and small wind;
10% for geothermal, microturbines and CHP

Maximum Incentive: Fuel cells: \$1,500 per 0.5 kW
Microturbines: \$200 per kW
Small wind turbines placed in service 10/4/08 - 12/31/08:
\$4,000
Small wind turbines placed in service after 12/31/08: no limit
All other eligible technologies: no limit

Eligible System Size: Small wind turbines: 100 kW or less
Fuel cells: 0.5 kW or greater
Microturbines: 2 MW or less
CHP: 50 MW or less

Equipment/Installation Requirements: Fuel cells, microturbines and CHP systems must meet specific energy-efficiency criteria

Authority 1: [26 USC § 48](#)

Summary:

Note: The American Recovery and Reinvestment Act of 2009 (H.R. 1) allows taxpayers eligible for the federal [renewable electricity production tax credit \(PTC\)](#) to take the federal business energy investment tax credit (ITC) or to receive a [grant](#) from the U.S. Treasury Department instead of taking the PTC for new installations. The new law also allows taxpayers eligible for the business ITC to receive a [grant](#) from the U.S. Treasury Department instead of taking the business ITC for new installations. The Treasury Department issued [Notice 2009-52](#) in June 2009, giving limited guidance on how to take the federal business energy investment tax credit instead of the federal renewable electricity production tax credit. The Treasury Department will issue more extensive guidance at a later time.

The federal business energy investment tax credit available under 26 USC § 48 was expanded significantly by the [Energy Improvement and Extension Act of 2008](#) (H.R. 1424), enacted in



October 2008. This law extended the duration -- by eight years -- of the existing credits for solar energy, fuel cells and microturbines; increased the credit amount for fuel cells; established new credits for small wind-energy systems, geothermal heat pumps, and combined heat and power (CHP) systems; extended eligibility for the credits to utilities; and allowed taxpayers to take the credit against the alternative minimum tax (AMT), subject to certain limitations. The credit was further expanded by [The American Recovery and Reinvestment Act of 2009](#), enacted in February 2009.

In general, credits are available for eligible systems placed in service on or before December 31, 2016.*

- **Solar.** The credit is equal to 30% of expenditures, with no maximum credit. Eligible solar energy property includes equipment that uses solar energy to generate electricity, to heat or cool (or provide hot water for use in) a structure, or to provide solar process heat. Hybrid solar lighting systems, which use solar energy to illuminate the inside of a structure using fiber-optic distributed sunlight, are eligible. Passive solar systems and solar pool-heating systems are *not* eligible. (Note that the Solar Energy Industries Association has published a [four-page document](#) that provides answers to frequently asked questions regarding the federal tax credits for solar energy.)
- **Fuel Cells.** The credit is equal to 30% of expenditures, with no maximum credit. However, the credit for fuel cells is capped at \$1,500 per 0.5 kilowatt (kW) of capacity. Eligible property includes fuel cells with a minimum capacity of 0.5 kW that have an electricity-only generation efficiency of 30% or higher. (Note that the credit for property placed in service before October 4, 2008, is capped at \$500 per 0.5 kW.)
- **Small Wind Turbines.** The credit is equal to 30% of expenditures, with no maximum credit for small wind turbines placed in service after December 31, 2008. Eligible small wind property includes wind turbines up to 100 kW in capacity. (In general, the maximum credit is \$4,000 for eligible property placed in service after October 3, 2008, and before January 1, 2009. *The American Recovery and Reinvestment Act of 2009* removed the \$4,000 maximum credit limit for small wind turbines.)
- **Geothermal Systems.** The credit is equal to 10% of expenditures, with no maximum credit limit stated. Eligible geothermal energy property includes geothermal heat pumps and equipment used to produce, distribute or use energy derived from a geothermal deposit. For electricity produced by geothermal power, equipment qualifies only up to, but not including, the electric transmission stage. For geothermal heat pumps, this credit applies to eligible property placed in service after October 3, 2008.
- **Microturbines.** The credit is equal to 10% of expenditures, with no maximum credit limit stated (explicitly). The credit for microturbines is capped at \$200 per kW of capacity. Eligible property includes microturbines up to two megawatts (MW) in capacity that have an electricity-only generation efficiency of 26% or higher.
- **Combined Heat and Power (CHP).** The credit is equal to 10% of expenditures, with no



maximum limit stated. Eligible CHP property generally includes systems up to 50 MW in capacity that exceed 60% energy efficiency, subject to certain limitations and reductions for large systems. The efficiency requirement does not apply to CHP systems that use biomass for at least 90% of the system's energy source, but the credit may be reduced for less-efficient systems. This credit applies to eligible property placed in service after October 3, 2008.

In general, the original use of the equipment must begin with the taxpayer, or the system must be constructed by the taxpayer. The equipment must also meet any performance and quality standards in effect at the time the equipment is acquired. The energy property must be operational in the year in which the credit is first taken.

Significantly, *The American Recovery and Reinvestment Act of 2009* repealed a previous limitation on the use of the credit for eligible projects also supported by "subsidized energy financing." For projects placed in service after December 31, 2008, this limitation no longer applies. Businesses that receive other incentives are advised to consult with a tax professional regarding how to calculate this federal tax credit.

History

The federal [*Energy Policy Act of 2005*](#) (EPAct 2005) expanded the existing federal business energy tax credit for solar and geothermal energy property to include fuel cells, microturbines and hybrid solar lighting systems installed on or after January 1, 2006, and raised the credit for solar to 30%. Prior to the provisions of EPAct 2005, a 10% credit was available to businesses that invested in or purchased solar or geothermal energy property.

** Note that the credit for geothermal property, with the exception of geothermal heat pumps, has no stated expiration date. The credit for solar energy property reverts to 10% after December 31, 2016.*

Last DSIRE Review: 06/10/2009

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>



Energy Efficient Appliance Tax Credit for Manufacturers

Incentive Type: Corporate Tax Credit

Eligible Efficiency

Technologies: Clothes Washers, Dishwasher, Refrigerators/Freezers

Applicable Sectors: Industrial, Appliance Manufacturers

Amount: Dishwashers: \$45 or \$75 per unit, varies by energy and water efficiency;

Clothes washers: \$75 - \$250 per unit, varies by type, and energy and water efficiency;

Refrigerators: \$50 - \$200, depending on energy efficiency rating

Maximum Incentive: The aggregate amount of credit allowed is \$75 million per taxpayer. Certain refrigerators and clothes washers will not add to the aggregate credit amount. See summary below for more details.

Carryover Provisions: Not specified

Equipment/Installation Appliances must meet Energy Star 2007 requirements; must

Requirements: be new and in compliance with all applicable performance and safety standards

Authority 1: [26 USC § 45M](#)

Date Enacted: 8/8/2005

Date Effective: 1/1/2006

Expiration Date: 12/31/2007

Authority 2: [H.R. 1424: Div. B, Sec. 305 \(The Energy Improvement and Extension Act of 2008\)](#)

Date Enacted: 10/3/2008

Date Effective: 1/1/2007

Expiration Date: Varies by appliance and efficiency level

Summary:

The Energy Policy Act of 2005 established tax credits for manufacturers of high-efficiency residential clothes washers, refrigerators, and dishwashers produced in calendar years 2006 and 2007. The Energy Improvement and Extension Act of 2008 (H.R. 1424, Division B) extended the credits for additional years depending on the efficiency rating of the manufactured appliance. Manufacturers only receive these credits for the increase in production of qualifying appliances over a two-year rolling baseline, and only appliances produced in the United States are eligible.

Credits available to manufacturers are as follows:



Dishwashers

- \$45 for models manufactured in calendar year 2008 or 2009 which use no more than 324 kilowatt hours (kWh) per year and 5.8 gallons per cycle.
- \$75 for models manufactured in calendar year 2008, 2009, or 2010 which use no more than 307 kWh per year and 5.5 gallons per cycle .

Clothes washers

- \$75 for residential top-loading models manufactured in 2008 which meet or exceed a 1.72 modified energy factor (MEF) and do not exceed a 8.0 water consumption factor (WCF).
- \$125 for residential top-loading models manufactured in 2008 or 2009 which meet or exceed a 1.8 MEF and do not exceed a 7.5 WCF.
- \$150 for a residential or commercial models manufactured in 2008, 2009, or 2010 which meet or exceed a 2.0 MEF and does not exceed a 6.0 WCF.
- \$250 for residential or commercial models manufactured in 2008, 2009, or 2010 which meet or exceed a 2.2 MEF and do not exceed a 4.5 WCF.

Refrigerators

- \$50 for models manufactured in 2008 which are between 20% and 22.9% more efficient than the 2001 energy conservation standards.
- \$75 for models manufactured in 2008 or 2009 which are between 23% and 24.9% more efficient than the 2001 energy conservation standards.
- \$100 for models manufactured in 2008, 2009, or 2010 which are between 25% and 29.9% more efficient than the 2001 energy conservation standards.
- \$200 for models manufactured in 2008, 2009, or 2010 which are at least 30% more efficient than the 2001 energy conservation standards.

Each manufacturer is limited to a total of \$75 million for all credits under this provision. However, refrigerators manufactured in 2008, 2009, or 2010 which consume at least 30% less energy than the 2001 energy conservation standards will not add to the aggregate credit amount and have no separate credit limit. Residential and commercial clothes washers manufactured in 2008, 2009 or 2010 which meet or exceed a 2.2 MEF and do not exceed a 4.5 WCF also will not add to the aggregate limit and have no separate credit limit.

Last DSIRE Review: 10/09/2008

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224
Phone:
(800) 829-1040

Web Site: <http://www.irs.gov>



Energy-Efficient New Homes Tax Credit for Home Builders

Incentive Type: Corporate Tax Credit

Eligible Efficiency

Technologies: Comprehensive Measures/Whole Building

Applicable Sectors: Construction

Amount: \$1,000-\$2,000, depending on energy savings and home type

Maximum Incentive: \$2,000

Web Site: <http://www.irs.gov/businesses/small/industries/article/0,,id=155445,00.html>

Authority 1: [26 USC § 45L](#)

Date Enacted: 8/8/2005 (Amended 2008)

Date Effective: 1/1/2006

Expiration Date: 12/31/2009

Authority 2: [H.R. 1424: Div. B, Sec. 304 \(The Energy Improvement and Extension Act of 2008\)](#)

Date Enacted: 10/3/2008

Expiration Date: 12/31/2009

Summary:

The federal Energy Policy Act of 2005 established 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. Initially scheduled to expire at the end of 2007, the tax credit was extended through 2008 by Section 205 of the [Tax Relief and Health Care Act of 2006 \(H.R. 6111\)](#), and then extended again through December 31, 2009 by Section 304 of [The Energy Improvement and Extension Act of 2008 \(H.R. 1424\)](#).

The home qualifies for the credit if:

- It is located in the United States;
- Its construction is substantially completed after August 8, 2005;
- It meets the energy saving requirements outlined in the statute; and
- It is acquired from the eligible contractor after December 31, 2005, and before January 1, 2010, for use as a residence.
-

Energy Saving Requirements

Site-built homes qualify for a \$2,000 credit if they are certified to reduce heating and cooling energy consumption by 50% relative to the International Energy Conservation Code standard and meet minimum efficiency standards established by the Department of Energy. Building envelope component improvements must account for at least one-fifth of the reduction in energy consumption.



Manufactured homes qualify for a \$2,000 credit if they conform to Federal Manufactured Home Construction and Safety Standards and meet the energy savings requirements of site-built homes described above.

Manufactured homes qualify for a \$1,000 credit if they conform to Federal Manufactured Home Construction and Safety Standards and reduce energy consumption by 30% relative to the International Energy Conservation Code standard. In this case, building envelope component improvements must account for at least one-third of the reduction in energy consumption. Alternatively, manufactured homes qualify if they meet Energy Star Labeled Homes requirements.

Certification

The Internal Revenue Service (IRS) has issued guidance to provide information about the certification process that a builder must complete to qualify for the credit. The guidance also provides for a public list of software programs that may be used in calculating energy consumption for purposes of obtaining a certification.

IRS Notice 2006-27 provides guidance for the credit for building energy-efficient homes other than manufactured homes. IRS Notice 2006-28 provides guidance for the credit for building energy-efficient manufactured homes. Click [here](#) to access IRS Form 8908: Energy Efficient Home Credit.

Last DSIRE Review: 10/09/2008

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>



Renewable Electricity Production Tax Credit (PTC)

Incentive Type: Corporate Tax Credit

Eligible Renewable/Other: Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Municipal Solid Waste, Hydrokinetic Power (i.e., Flowing Water),

Technologies: Anaerobic Digestion, Small Hydroelectric, Tidal Energy, Wave Energy, Ocean Thermal

Applicable Sectors: Commercial, Industrial

Amount: 2.1¢/kWh for wind, geothermal, closed-loop biomass; 1.0¢/kWh for other eligible technologies. Generally applies to first 10 years of operation.

Eligible System Size: Marine and Hydrokinetic: Minimum capacity of 150 kW
Agricultural Livestock Waste: Minimum capacity of 150 kW

Web Site: <http://www.irs.gov/pub/irs-pdf/f8835.pdf>

Authority 1: [26 USC § 45](#)

Date Enacted: 1992

Summary:

Note: The American Recovery and Reinvestment Act of 2009 (H.R. 1) allows taxpayers eligible for the federal renewable electricity production tax credit (PTC) to take the federal business energy investment tax credit (ITC) or to receive a grant from the U.S. Treasury Department instead of taking the PTC for new installations. The new law also allows taxpayers eligible for the business ITC to receive a grant from the U.S. Treasury Department instead of taking the business ITC for new installations. The Treasury Department issued Notice 2009-52 in June 2009, giving limited guidance on how to take the federal business energy investment tax credit instead of the federal renewable electricity production tax credit. The Treasury Department will issue more extensive guidance at a later time.

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. Originally enacted in 1992, the PTC has been renewed and expanded numerous times, most recently by H.R. 1424 (Div. B, Sec. 101 & 102) in October 2008 and again by H.R. 1 (Div. B, Section 1101 & 1102) in February 2009.

The October 2008 legislation extended the in-service deadlines for all qualifying renewable technologies; expanded the list of qualifying resources to include marine and hydrokinetic resources, such as wave, tidal, current and ocean thermal; and made changes to the definitions of several qualifying resources and facilities. The effective dates of these changes vary. Marine and hydrokinetic energy production is eligible as of the date the legislation was enacted (October 3, 2008), as is the incremental energy production associated with expansions of biomass facilities. A change in the definition of "trash facility" no longer requires that such facilities burn trash, and is also effective immediately. One further provision redefining the term "non-hydroelectric dam,"



took effect December 31, 2008.

The February 2009 legislation revised the credit by: (1) extending the in-service deadline for most eligible technologies by three years (two years for marine and hydrokinetic resources); and (2) allowing facilities that qualify for the PTC to opt instead to take the federal business energy investment credit (ITC) or an equivalent cash grant from the U.S. Department of Treasury. The ITC or grant for PTC-eligible technologies is generally equal to 30% of eligible costs.*

The tax credit amount is 1.5¢/kWh in 1993 dollars (indexed for inflation) for some technologies, and half of that amount for others. The rules governing the PTC vary by resource and facility type. The table below outlines two of the most important characteristics of the tax credit -- in-service deadline and credit amount -- as they apply to different facilities. The table includes changes made by H.R. 1, in February 2009, and the inflation-adjusted credit amounts are current for the 2008 tax year. (See the history section below for information on prior rules.)

Resource Type	In-Service Deadline	Credit Amount
Wind	December 31, 2012	2.1¢/kWh
Closed-Loop Biomass	December 31, 2013	2.1¢/kWh
Open-Loop Biomass	December 31, 2013	1.0¢/kWh
Geothermal Energy	December 31, 2013	2.1¢/kWh
Landfill Gas	December 31, 2013	1.0¢/kWh
Municipal Solid Waste	December 31, 2013	1.0¢/kWh
Qualified Hydroelectric	December 31, 2013	1.0¢/kWh
Marine and Hydrokinetic (150 kW or larger)**	December 31, 2013	1.0¢/kWh

The duration of the credit is generally 10 years after the date the facility is placed in service, but there are two exceptions:

- Open-loop biomass, geothermal, small irrigation hydro, landfill gas and municipal solid waste combustion facilities placed into service after October 22, 2004, and before enactment of the *Energy Policy Act of 2005*, on August 8, 2005, are only eligible for the credit for a five-year period.
- Open-loop biomass facilities placed in service before October 22, 2004, are eligible for a five-year period beginning January 1, 2005.

In addition, the tax credit is reduced for projects that receive other federal tax credits, grants, tax-exempt financing, or subsidized energy financing. The credit is claimed by completing [Form 8835](#), "Renewable Electricity Production Credit," and [Form 3800](#), "General Business Credit." For more information, contact IRS Telephone Assistance for Businesses at 1-800-829-4933.

History

As originally enacted by the *Energy Policy Act of 1992*, the PTC expired at the end of 2001, and



was subsequently extended in March 2002 as part of the *Job Creation and Worker Assistance Act of 2002* (H.R. 3090). The PTC then expired at the end of 2003 and was not renewed until October 2004, as part of H.R. 1308, the *Working Families Tax Relief Act of 2004*, which extended the credit through December 31, 2005. The *Energy Policy Act of 2005* (H.R. 6) modified the credit and extended it through December 31, 2007. In December 2006, the PTC was extended for yet another year -- through December 31, 2008 -- by the *Tax Relief and Health Care Act of 2006* (H.R. 6111).

The American Jobs Creation Act of 2004 (H.R. 4520), expanded the PTC to include additional eligible resources -- geothermal energy, open-loop biomass, solar energy, small irrigation power, landfill gas and municipal solid waste combustion -- in addition to the formerly eligible wind energy, closed-loop biomass, and poultry-waste energy resources. The *Energy Policy Act of 2005* (EPAct 2005) further expanded the credit to certain hydropower facilities. As a result of EPAct 2005, solar facilities placed into service after December 31, 2005, are no longer eligible for this incentive. Solar facilities placed in-service during the roughly one-year window in which solar was eligible are permitted to take the full credit (i.e., 2.1¢/kWh) for five years.

** Prior to H.R. 1, geothermal facilities were already eligible for a 10% tax credit under the energy ITC. It is not clear at this time if geothermal electric facilities will be eligible for a 10% tax credit, as defined by the ITC rules, or the full 30% tax credit now available for PTC eligible technologies in general.*

*** H.R. 1424 added marine and hydrokinetic energy as eligible resources and removed "small irrigation power" as an eligible resource effective October 3, 2008. However, the definition of marine and hydrokinetic energy encompasses the resources that would have formerly been defined as small irrigation power facilities. Thus H.R. 1424 effectively extended the in-service deadline for small irrigation power facilities by 3 years, from the end of 2008 until the end of 2011 (since extended again through 2013).*

Last DSIRE Review: 06/10/2009

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>





Federal Financial Incentives Federal Grant Program

U.S. Department of Treasury - Renewable Energy Grants

Incentive Type: Federal Grant Program

Eligible Renewable/Other 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, Tidal Energy, Wave Energy, Ocean Thermal, Microturbines

Applicable Sectors: Commercial, Industrial, Agricultural

Amount: 30% of property that is part of a qualified facility, qualified fuel cell property, solar property, or qualified small wind property
10% of all other property

Max. Limit: \$1,500 per 0.5 kW for qualified fuel cell property
\$200 per kW for qualified microturbine property
50 MW for CHP property, with limitations for large systems

Terms: Grant applications must be submitted by 10/1/2011. Payment of grant will be made within 60 days of the grant application date or the date property is placed in service, whichever is later.

Web Site: <http://www.treas.gov/recovery>

Authority 1: [H.R. 1: Div. B, Sec. 1104 & 1603 \(The American Recovery and Reinvestment Act of 2009\)](#)

Date Enacted: 2/17/2009

Date Effective: 1/1/2009

Summary:

Note: The American Recovery and Reinvestment Act of 2009 (H.R. 1) allows taxpayers eligible for the federal business energy investment tax credit (ITC) to take this credit or to receive a grant from the U.S. Treasury Department instead of taking the business ITC for new installations. The new law also allows taxpayers eligible for the renewable electricity production tax credit (PTC) to receive a grant from the U.S. Treasury Department instead of taking the PTC for new installations. (It does not allow taxpayers eligible for the residential renewable energy tax credit to receive a grant instead of taking this credit.) Taxpayers may not use more than one of these incentives. If an entity receives a grant and has previously received the business ITC or the PTC, the credit will be recaptured through an increase in taxes during the year in which the grant is awarded by the amount of the credit taken in previous years. Receiving a credit in the past does not reduce the amount of the grant. The grant is not included in the gross income of the taxpayer.



The *American Recovery and Reinvestment Act of 2009* (H.R. 1), enacted in February 2009, created a renewable energy grant program that will be administered by the U.S. Department of Treasury. This cash grant may be taken in lieu of the federal business energy investment tax credit (ITC).

Grants are available to eligible property* placed in service in 2009 or 2010, or placed in service by the specified credit termination date,** if construction began in 2009 or 2010:

- **Solar.** The grant is equal to 30% of the basis of the property for solar energy. Eligible solar-energy property includes equipment that uses solar energy to generate electricity, to heat or cool (or provide hot water for use in) a structure, or to provide solar process heat. Passive solar systems and solar pool-heating systems are *not* eligible. Hybrid solar-lighting systems, which use solar energy to illuminate the inside of a structure using fiber-optic distributed sunlight, are eligible.
- **Fuel Cells.** The grant is equal to 30% of the basis of the property for fuel cells. The grant for fuel cells is capped at \$1,500 per 0.5 kilowatt (kW) in capacity. Eligible property includes fuel cells with a minimum capacity of 0.5 kW that have an electricity-only generation efficiency of 30% or higher.
- **Small Wind Turbines.** The grant is equal to 30% of the basis of the property for small wind turbines. Eligible small wind property includes wind turbines up to 100 kW in capacity.
- **Qualified Facilities.** The grant is equal to 30% of the basis of the property for qualified facilities. Qualified facilities include wind energy facilities, closed-loop biomass facilities, open-loop biomass facilities, geothermal energy facilities, landfill gas facilities, trash facilities, qualified hydropower facilities, and marine and hydrokinetic renewable energy facilities.
- **Geothermal Heat Pumps.** The grant is equal to 10% of the basis of the property for geothermal heat pumps.
- **Microturbines.** The grant is equal to 10% of the basis of the property for microturbines. The grant for microturbines is capped at \$200 per kW of capacity. Eligible property includes microturbines up to two megawatts (MW) in capacity that have an electricity-only generation efficiency of 26% or higher.
- **Combined Heat and Power (CHP).** The grant is equal to 10% of the basis of the property for CHP. Eligible CHP property generally includes systems up to 50 MW in capacity that exceed 60% energy efficiency, subject to certain limitations and reductions for large systems. The efficiency requirement does not apply to CHP systems that use biomass for at least 90% of the system's energy source, but the grant may be reduced for less-efficient systems.



It is important to note that only tax-paying entities are eligible for this grant. Federal, state and local government bodies, non-profits, qualified energy tax credit bond lenders, and cooperative electric companies are not eligible to receive this grant. Partners or pass-thru entities for the organizations described above are also not eligible to receive this grant. Grant applications must be submitted by October 1, 2011. The U.S. Treasury Department will make payment of the grant within 60 days of the grant application date or the date the property is placed in service, whichever is later.

The U.S. Department of Treasury has not yet released guidelines and is not accepting applications currently for this grant. It is expected that guidelines will be released by July 2009. The Department of Treasury has issued a program plan for the grant program. This plan describes the objectives of the grant program, briefly mentions the timeline for grant awards and lists some of the monitoring and evaluation requirements.

**Definitions of eligible property types and renewable technologies can be found in the U.S. Code, Title 26, § 45 and § 48.*

***Credit termination date of January 1, 2013 for wind; January 1, 2014 for closed-loop biomass, open-loop biomass, landfill gas, trash, qualified hydropower, marine and hydrokinetic; January 1, 2017 for fuel cells, small wind, solar, geothermal, microturbines, CHP and geothermal heat pumps.*

Last DSIRE Review: 06/10/2009

Contact:

Grant Information

U.S. Department of Treasury
1500 Pennsylvania Avenue, NW
Washington, DC 20220

Phone: (202) 622-2000

Fax: (202) 622-6415

E-Mail: 1603Questions@do.treas.gov

Web Site: <http://www.treasury.gov>



USDA - Rural Energy for America Program (REAP) Grants

Incentive Type: Federal Grant Program

Eligible Efficiency

Technologies: Yes; specific technologies not identified

Eligible Solar Water Heat, Solar Space Heat, Solar Thermal Electric,

Renewable/Other Photovoltaics, Wind, Biomass, Hydroelectric, Renewable Transportation

Technologies: 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

Applicable Sectors: Commercial, Schools, Local Government, State Government, Tribal Government, Rural Electric Cooperative, Agricultural, Public Power Entities

Amount: Varies

Max. Limit: 25% of project cost

Web Site: <http://www.rurdev.usda.gov/rbs/busp/bprogs.htm>

Authority 1: [7 USC § 8106](#)

Date Enacted: 5/13/2002

Date Effective: FY 2003

Summary:

NOTE: The U.S. Department of Agriculture's Rural Development has issued a Notice of Solicitation of Applications for the Rural Energy for America Program (REAP). The deadline to apply for grants and loan guarantees under this solicitation is July 31, 2009. Grants and loan guarantees will be awarded for investments in renewable energy systems, energy efficiency improvements and renewable energy feasibility studies.

The Food, Conservation, and Energy Act of 2008 (H.R. 2419), enacted by Congress in May 2008, converted the federal Renewable Energy Systems and Energy Efficiency Improvements Program, into the Rural Energy for America Program (REAP). Similar to its predecessor, the 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. Congress has allocated funding for the new program in the following amounts: \$55 million for FY 2009, \$60 million for FY 2010, \$70 million for FY 2011, and \$70 million for FY 2012. REAP is administered by the U.S. Department of Agriculture (USDA).*

Of the total REAP funding available, 96% is dedicated to grants and loan guarantees for energy efficiency improvements and renewable energy systems. These incentives are available to agricultural producers and rural small businesses to purchase renewable energy systems (including systems that may be used to produce and sell electricity), to make energy efficiency



improvements, and to conduct relevant feasibility studies. Eligible renewable energy projects include wind, solar, biomass and geothermal; and hydrogen derived from biomass or water using wind, solar or geothermal energy sources. These grants are limited to 25% of a proposed project's cost, and a loan guarantee may not exceed \$25 million. The combined amount of a grant and loan guarantee may not exceed 75% of the project's cost. In general, a minimum of 20% of the funds available for these incentives will be dedicated to grants of \$20,000 or less. The USDA likely will announce the availability of funding for this component of REAP through a Notice of Funds Availability (NOFA).

The USDA will also make competitive grants to eligible entities to provide assistance to agricultural producers and rural small businesses “to become more energy efficient” and “to use renewable energy technologies and resources.” These grants are generally available to state government entities, local governments, tribal governments, land-grant colleges and universities, rural electric cooperatives and public power entities, and other entities, as determined by the USDA. These grants may be used for conducting and promoting energy audits; and for providing recommendations and information related to energy efficiency and renewable energy. Of the total REAP funding available, 4% is dedicated to competitive grants to provide assistance to agricultural producers and rural small businesses.

** The Renewable Energy Systems and Energy Efficiency Improvements Program was created by the USDA pursuant to Section 9006 of the 2002 federal Farm Security and Rural Investment Act of 2002. Funding in the amount of \$23 million per year was appropriated for each fiscal year from FY 2003-2007. In March 2008, the USDA announced that it would accept \$220.9 million in applications for grants, loan guarantees, and loan/grant combination packages under the Renewable Energy Systems and Energy Efficiency Improvements Program. The application deadline was June 16, 2008.*

Last DSIRE Review: 05/27/2009





Federal Financial Incentives

Federal Loan Program

Clean Renewable Energy Bonds (CREBs)

Incentive Type: Federal Loan Program

Eligible Renewable/Other 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

Applicable Sectors: Local Government, State Government, Tribal Government, Municipal Utility, Rural Electric Cooperative

Amount: Varies

Terms: Certain terms for "new" CREBs differ from those for prior allocations. See IRS Notice 2009-33 for details

Web Site: http://www.irs.gov/irb/2007-14_IRB/ar17.html

Authority 1: [26 USC § 54 \(Old CREBs\)](#)

Date Effective: 08/08/2005

Expiration Date: 12/31/2009

Authority 2: [26 USC § 54A \(New CREBs\)](#)

Date Enacted: 10/03/2008

Date Effective: 10/03/2008

Authority 3: [26 USC § 54C \(New CREBs\)](#)

Date Enacted: 10/03/2008 (subsequently amended)

Date Effective: 10/03/2008

Authority 4: [IRS Notice 2009-33](#)

Date Effective: 04/07/2009

Expiration Date: 08/04/2009

Summary:

Note: The terms "new" and "old" CREBs are used in the following summary to distinguish between prior CREB allocations and the new CREB authorizations made by the U.S. Congress in 2008 and 2009. The use of the term "new CREBs" has legal significance in that new CREBs authorized under 26 USC § 54A and 54C have substantially different rules than prior CREB allocations authorized under 26 USC § 54.

Clean renewable energy bonds (CREBs) may be used by certain entities -- primarily in the public sector -- to finance renewable energy projects. The list of qualifying technologies is generally the same as that used for the federal renewable energy production tax credit (PTC). CREBs may be



issued by electric cooperatives, government entities (states, cities, counties, territories, Indian tribal governments or any political subdivision thereof), and by certain lenders. 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.

The Energy Improvement and Extension Act of 2008 (Div. A, Sec. 107) allocated \$800 million for new Clean Renewable Energy Bonds (CREBs). In February 2009, the American Recovery and Reinvestment Act of 2009 (Div. B, Sec. 1111) allocated an additional \$1.6 billion for new CREBs, for a total new CREB allocation of \$2.4 billion. The Energy Improvement and Extension Act of 2008 also extended the deadline for previously reserved allocations ("old CREBs") until December 31, 2009, and addressed several provisions in the existing law that previously limited the usefulness of the program for some projects. A separate section of the law extended CREBs eligibility to marine energy and hydrokinetic power projects.

In April 2009 the IRS issued Notice 2009-33 soliciting applications for the new CREB allocation and providing interim guidance on certain program rules and changes from prior CREB allocations. The expiration date for new CREB applications under this solicitation is August 4, 2009. Further guidance on CREBs is available in IRS Notices 2006-7 and 2007-26 to the extent that the program rules were not modified by 2008 and 2009 legislation.

Participation in the program is limited by the volume of bonds allocated by Congress for the program. Participants must first apply to the Internal Revenue Service (IRS) for a CREBs allocation, and then issue the bonds within a specified time period. The new CREBs allocation totaling \$2.4 billion does not have a defined expiration date under the law; however, the recent IRS solicitation for new applications requires the bonds to be issued within 3 years after the applicant receives notification of an approved allocation (see History section below for information on previous allocations). Public power providers, governmental bodies, and electric cooperatives are each reserved an equal share (33.3%) of the new CREBs allocation. The tax credit rate is set daily by the U.S. Treasury Department. Under past allocations, the credit could be taken quarterly on a dollar-for-dollar basis to offset the tax liability of the bondholder. However, under the new CREBs allocation, the credit has been reduced to 70% of what it would have been otherwise. Other important changes are described in IRS Notice 2009-33.

CREBs differ from traditional tax-exempt bonds in that the tax credits issued through CREBs are treated as taxable income for the bondholder. The tax credit may be taken each year the bondholder has a tax liability as long as the credit amount does not exceed the limits established by the federal *Energy Policy Act of 2005*. Treasury rates for prior CREB allocations, or "old" CREBs are available [here](#), while rates for new CREBs and other qualified tax credit bonds are available [here](#).

History

The federal *Energy Policy Act of 2005* (EPAct 2005) established Clean Energy Renewable Bonds (CREBs) as a financing mechanism for public sector renewable energy projects. This legislation 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 mutual or cooperative electric companies.

For further information on CREBs, contact Zoran Stojanovic or Timothy Jones of the IRS Office of Associate Chief Counsel at (202) 622-3980. Questions on recent IRS Notice 2009-33 can be directed to Janae Lemley at (636) 255-1202.

**In practice, for a variety of reasons bond issuers have sometimes had to issue the bonds at a discount or make supplemental interest payments in order to find a buyer.*

Last DSIRE Review: 04/14/2009

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>



Energy –Efficient Mortgages

Incentive Type: Federal Loan Program

Eligible Efficiency

Technologies: Yes; specific technologies not identified

Eligible Passive Solar Space Heat, Solar Water Heat, Solar Space Heat,

Renewable/Other Photovoltaics, Daylighting

Technologies:

Applicable Sectors: Residential

Web Site: <http://www.resnet.us/ratings/mortgages>

Summary:

Homeowners can take advantage of energy efficient mortgages (EEM) to finance a variety of energy efficiency measures, including renewable energy technologies, in a new or existing home. The U.S. federal government supports these loans by insuring them through Federal Housing Authority (FHA) or Veterans Affairs (VA) programs. This allows borrowers who might otherwise be denied loans to pursue energy efficiency improvements, and it secures lenders against loan default.

The federal Energy Star program has a partnership program for lenders whereby lenders who provide EEMs to borrowers may become Energy Star lender partners. These EEMs may or may not be used to purchase an Energy Star qualified home. Becoming a partner allows lenders to utilize the Energy Star brand to promote themselves as Energy Star partners offering EEMs. To become a lender partner lenders must first provide proof that they know how to write EEMs. To maintain their partnership benefits, lenders must write a certain number of EEMs per year. Energy Star does not have a lender certification program or process. Click [here](#) for more information about Energy Star's lender partnership program. As of August 2008, the federal Energy Star program lists 61 private lenders who offer homebuyer assistance, HERS assistance, special financing, and other assistance to applicants buying homes with the Energy Star rating. Energy Star requires that its lender partners provide EEMs to qualified borrowers regardless of whether it is an FHA EEM, Fannie Mae EEM, or VA EEM.

FHA Energy Efficient Mortgages:

The FHA allows lenders to add up to 100% of energy efficiency improvements to an existing mortgage loan by insuring a loan of up to 5% of a home's appraised value with certain restrictions. FHA mortgage limits vary by county, state and the number of units in a dwelling. See www.fha.com/lending_limits.cfm for more details.

Loan amounts may not exceed the projected savings of the energy efficiency improvements. These loans may be combined with FHA 203 (h) mortgages available to victims of presidentially-declared disasters and with financing offered through the FHA 203 (k) rehabilitation program. FHA loan limits do not apply to the EEM. Homebuyers must submit a



Home Energy Rating (HER), contractor bids, and a FHA B Worksheet. This process may become streamlined in 2009 as a result of the Housing and Economic Recovery Act of 2008, which requires HUD to report to congress with ways to remove the administrative barriers and increase consumer participation and awareness of these financing options.

Presently, up to \$200 of the cost of the HER may be included in the mortgage, and borrowers may include closing costs and the up-front mortgage insurance premium in the total cost of the loan. 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. Homebuyers should submit applications to their local HUD Field Office through an FHA-approved lending institution, or they can apply directly online at www.fha.com/energy_efficient.cfm. See also www.hud.gov/offices/hsg/sfh/eem/energy-r.cfm.

Department of Veterans Affairs (VA) Energy Efficient Mortgages:

The VA insures EEMs to be used in conjunction with VA loans either for the purchase of existing homes or for refinancing loans secured by the dwelling. Homebuyers may borrow up to \$3,000 if only documentation of improvement costs or contractor bids is submitted, or up to \$6,000 if the projected energy savings are greater than the increase in mortgage payments. Loans may exceed this amount at the discretion of the VA. Applicants may not include the cost of their own labor in the total amount. No additional home appraisal is needed, but applicants must submit a HER, contractor bids and certain other documentation. The VA insures 50% of the loan if taken by itself, but it may insure less if the total value of the mortgage exceeds a certain amount.

This mortgage is available to qualified military personnel, reservists and veterans. (See www.homeloans.va.gov/elig2.htm for more details). Applicants should secure a certificate of eligibility from their local lending office and submit it to a VA-approved private lender. If the loan is approved, the VA guarantees the loan when it is closed.

Conventional EEMs:

Like Energy Star mortgages, conventional mortgages are not backed by a federal agency. Private lenders sell loans to Fannie Mae and Freddie Mac, which in turn allow homebuyers to borrow up to 15% of an existing home's appraised value for improvements documented by a HER.

Fannie Mae also lends up to 5% for Energy Star new homes. Fannie Mae EEMs are available to single-family, owner-occupied units, and Fannie Mae provides EEMs to those whose income might otherwise disqualify them from receiving the loans by allowing approved lenders to adjust borrowers' debt-to-income ratio by 2%. The value of the improvements is immediately added to the total appraised value of the home.

Freddie Mac offers EEMs for one- to four-unit dwellings and also helps raise the effective income of the borrower to qualifying levels by allowing lenders to increase the borrower's



income by a dollar amount equal to the estimated energy savings. Any energy efficiency improvements can qualify, and these mortgages can be combined with both fixed-rate and adjustable-rate mortgages. Borrowers should apply directly to the lender.

Last DSIRE Review: 10/02/2008



Qualified Energy Conservation Bonds (QECBs)

Incentive Type: Federal Loan Program

Eligible Efficiency

Technologies: Yes; specific technologies not identified

Eligible Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass,

Renewable/Other Hydroelectric, Geothermal Electric, Municipal Solid Waste, Hydrokinetic

Technologies: Power, Anaerobic Digestion, Tidal Energy, Wave Energy, Ocean Thermal

Applicable Sectors: Local Government, State Government, Tribal Government

Amount: Varies

Authority 1: [26 USC § 54A](#)

Date Enacted: 10/03/2008

Date Effective: 10/03/2008

Authority 2: [26 USC § 54D](#)

Date Enacted: 10/03/2008 (subsequently amended)

Date Effective: 10/03/2008

Authority 3: [IRS Notice 2009-29](#)

Date Effective: 04/07/2009

Summary:

The *Energy Improvement and Extension Act of 2008*, enacted in October 2008, authorized the issuance of Qualified Energy Conservation Bonds (QECBs) that may be used by state, local and tribal governments to finance certain types of energy projects. QECBs are qualified tax credit bonds, and in this respect are similar to new [Clean Renewable Energy Bonds](#) or CREBs.

The October 2008 enabling legislation set a limit of \$800 million on the volume of energy conservation tax credit bonds that may be issued by state and local governments. However, *The American Recovery and Reinvestment Act of 2009*, enacted in February 2009, expanded the allowable bond volume to \$3.2 billion. In April 2009 the IRS issued Notice 2009-29 providing interim guidance on how the program will operate and how the bond volume will be allocated.

The advantage of these bonds is that they 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. The tax credit may be taken quarterly to offset the tax liability of the bondholder. The tax credit rate is set daily by the U.S. Treasury Department; however, energy conservation bondholders will receive only 70% of the full rate set by the Treasury Department under 26 USC § 54A. Credits exceeding a bondholder's tax liability may be carried forward to the succeeding tax year, but cannot be refunded. Energy conservation bonds differ from traditional tax-exempt bonds in that the tax credits issued through the program are treated as taxable income for the bondholder. QECB rates are available [here](#).



In contrast to CREBs, QECCBs are not subject to a U.S. Department of Treasury application and approval process. Bond volume is instead allocated to each state based on the state's percentage of the U.S. population as of July 1, 2008. Each state is then required to allocate a portion of its allocation to "large local governments" within the state based on the local government's percentage of the state's population. Large local governments are defined as municipalities and counties with populations of 100,000 or more. Large local governments may reallocate their designated portion back to the state if they choose to do so. IRS Notice 2009-29 contains a list of the QECCB allocations for each state and U.S. territory.

The definition of "qualified energy conservation projects" is fairly broad and contains elements relating to energy efficiency capital expenditures in public buildings; renewable energy production; various research and development applications; mass commuting facilities that reduce energy consumption; several types of energy related demonstration projects; and public energy efficiency education campaigns (see H.R. 1424 for additional details). Renewable energy facilities that are eligible for CREBs are also eligible for QECCBs.

For more information on QECCBs, contact Timothy Jones or David White of the IRS Office of Associate Chief Counsel at (202) 622-3980.

Last DSIRE Review: 04/14/2009

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>



U.S. Department of Energy - Loan Guarantee Program

Incentive Type: Federal Loan Program

Eligible Efficiency

Technologies: Lighting, Windows, Roofs, Yes; specific technologies not identified

Eligible Renewable/Other 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

Applicable Sectors: Commercial, Industrial, Nonprofit, Schools, Local Government, State Government, Agricultural, Institutional, Any non-federal entity

Amount: Varies. Program focuses on projects with total project costs over \$25 million.

Max. Limit: None stated

Terms: Full repayment is required over a period not to exceed the lesser of 30 years or 90% of the projected useful life of the physical asset to be financed

Web Site: <http://www.lgprogram.energy.gov>

Authority 1: [42 USC § 16511 et seq.](#)

Authority 2: [10 CFR 609](#)

Summary:

Innovative Technology Loan Guarantee Program:

Title XVII of the federal *Energy Policy Act of 2005* (EPAct 2005) authorized the U.S. Department of Energy (DOE) to issue loan guarantees for projects that "avoid, reduce or sequester air pollutants or anthropogenic emissions of greenhouse gases; and employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued." The loan guarantee program has been authorized to offer more than \$10 billion in loan guarantees for energy efficiency, renewable energy and advanced transmission and distribution projects. The authority to issue loan guarantees granted by EPAct 2005 expires on September 30, 2009.

DOE actively promotes projects in three categories: (1) manufacturing projects, (2) stand-alone projects, and (3) large-scale integration projects that may combine multiple eligible renewable energy, energy efficiency and transmission technologies in accordance with a staged development scheme. Under the original authorization, loan guarantees were intended to encourage early commercial use of new or significantly improved technologies in energy projects. The loan guarantee program generally does not support research and development projects.

The most recent solicitation for this program was issued in July 2008. The application deadline



for stand-alone and manufacturing projects, as well as the Part I applications for large-scale integration projects, was February 26, 2009.

Temporary Loan Guarantee Program:

The American Recovery and Reinvestment Act of 2009 (H.R. 1), enacted in February 2009, extended the authority of the DOE to issue loan guarantees and appropriated \$6 billion for this program. Under this act, the DOE may enter into guarantees until September 30, 2011. The act amended EAct 2005 by adding a new section defining eligible technologies for new loan guarantees. Eligible projects include renewable energy projects that generate electricity or thermal energy and facilities that manufacture related components, electric power transmission systems, and innovative biofuels projects. Funding for biofuels projects is limited to \$500 million. Davis-Bacon wage requirements apply to any project receiving a loan guarantee.

Contact:

Public Information - DOE

U.S. Department of Energy
1000 Independence Avenue, SW
Washington , DC 20585-0121

Phone: (202) 586-8336

E-Mail: LGProgram@hq.doe.gov

Web Site: <http://www.lgprogram.energy.gov>



USDA - Rural Energy for America Program (REAP) Loan Guarantees

Incentive Type: Federal Loan Program

Eligible Efficiency

Technologies: Yes; specific technologies not identified

Eligible Solar Water Heat, Solar Space Heat, Solar Thermal Electric,

Renewable/Other Photovoltaics, Wind, Biomass, Hydroelectric, Renewable Transportation

Technologies: 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

Applicable Sectors: Commercial, Agricultural

Amount: Varies

Max. Limit: \$25 million per loan guarantee

Web Site: <http://www.rurdev.usda.gov/rbs/busp/bprogs.htm>

Authority 1: [7 USC § 8106](#)

Date Enacted: 5/13/2002

Date Effective: FY 2003

Summary:

NOTE: The U.S. Department of Agriculture's Rural Development has issued a Notice of Solicitation of Applications for the Rural Energy for America Program (REAP). The deadline to apply for grants and loan guarantees under this solicitation is July 31, 2009. Grants and loan guarantees will be awarded for investments in renewable energy systems, energy efficiency improvements and renewable energy feasibility studies.

The Food, Conservation, and Energy Act of 2008 (H.R. 2419), enacted by Congress in May 2008, converted the federal Renewable Energy Systems and Energy Efficiency Improvements Program,* into the Rural Energy for America Program (REAP). Similar to its predecessor, the 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. Congress has allocated funding for the new program in the following amounts: \$55 million for FY 2009, \$60 million for FY 2010, \$70 million for FY 2011, and \$70 million for FY 2012. REAP is administered by the U.S. Department of Agriculture (USDA).

Of the total REAP funding available, 96% is dedicated to grants and loan guarantees for energy efficiency improvements and renewable energy systems. These incentives are available to agricultural producers and rural small businesses to purchase renewable energy systems (including systems that may be used to produce and sell electricity), to make energy efficiency improvements, and to conduct relevant feasibility studies. Eligible renewable energy projects include wind, solar, biomass and geothermal; and hydrogen derived from biomass or water using wind, solar or



geothermal energy sources. These grants are limited to 25% of a proposed project's cost, and a loan guarantee may not exceed \$25 million. The combined amount of a grant and loan guarantee may not exceed 75% of the project's cost. In general, a minimum of 20% of the funds available for these incentives will be dedicated to grants of \$20,000 or less. The USDA likely will announce the availability of funding for this component of REAP through a Notice of Funds Availability (NOFA).

The USDA will also make competitive grants to eligible entities to provide assistance to agricultural producers and rural small businesses “to become more energy efficient” and “to use renewable energy technologies and resources.” These grants are generally available to state government entities, local governments, tribal governments, land-grant colleges and universities, rural electric cooperatives and public power entities, and other entities, as determined by the USDA. These grants may be used for conducting and promoting energy audits; and for providing recommendations and information related to energy efficiency and renewable energy. Of the total REAP funding available, 4% is dedicated to competitive grants to provide assistance to agricultural producers and rural small businesses.

** The Renewable Energy Systems and Energy Efficiency Improvements Program was created by the USDA pursuant to Section 9006 of the 2002 federal Farm Security and Rural Investment Act of 2002. Funding in the amount of \$23 million per year was appropriated for each fiscal year from FY 2003-2007. In March 2008, the USDA announced that it would accept \$220.9 million in applications for grants, loan guarantees, and loan/grant combination packages under the Renewable Energy Systems and Energy Efficiency Improvements Program. The application deadline was June 16, 2008.*





Federal Financial Incentives Industry Recruitment/Support

Qualifying Advanced Energy Project Investment Tax Credit

Incentive Type: Industry Recruitment/Support

Eligible Efficiency

Technologies: Lighting, Lighting Controls/Sensors, Energy Conservation Technologies

Eligible Solar Water Heat, Solar Thermal Electric, Photovoltaics, Wind,

Renewable/Other Geothermal Electric, Fuel Cells, Geothermal Heat Pumps, Fuel Cells using

Technologies: Renewable Fuels, Microturbines

Applicable Sectors: Commercial, Industrial, Manufacturing

Amount: 30% of qualified investment

Max. Limit: Total amount of credits to be allocated shall not exceed \$2.3 billion

Terms: Apply to the Internal Revenue Service for certification for credits

Web Site: <http://www.ustreas.gov>

Authority 1: [H.R. 1: Div. B, Sec. 1302 \(American Recovery and Reinvestment Act of 2009\)](#)

Date Enacted: 02/17/2009

Date Effective: 02/17/2009

Summary:

The American Recovery and Reinvestment Act of 2009 (H.R. 1), enacted in February 2009, established a new investment tax credit to encourage the development of a U.S.-based renewable energy manufacturing sector. In any taxable year, the investment tax credit is equal to 30% of the qualified investment required for an advanced energy project that establishes, re-equips or expands a manufacturing facility that produces any of the following:

- Equipment and/or technologies used to produced energy from the sun, wind, geothermal or "other" renewable resources
- Fuel cells, microturbines or energy-storage systems for use with electric or hybrid-electric motor vehicles
- Equipment used to refine or blend renewable fuels
- Equipment and/or technologies to produce energy-conservation technologies (including energy-conserving lighting technologies and smart grid technologies)*



Qualified investments generally include personal tangible property that is depreciable and required for the production process. Other tangible property may be considered a qualified investment only if it is an essential part of the facility, excluding buildings and structural components.

The U.S. Treasury Department will issue certifications for qualified investments eligible for credits to qualifying advanced energy project sponsors. In total, \$2.3 billion worth of credits may be allocated under the program. After certification is granted, the taxpayer has one year to provide additional evidence that the requirements of the certification have been met and three years to put the project in service.

In determining which projects to certify, the U.S. Treasury Department must consider those which most likely will be commercially viable, provide the greatest domestic job creation, provide the greatest net reduction of air pollution and/or greenhouse gases, have great potential for technological innovation and commercial deployment, have the lowest levelized cost of generated (or stored) energy *or* the lowest levelized cost of reduction in energy consumption or greenhouse gas emissions, *and* have the shortest project time. The U.S. Treasury Department, in consultation with the U.S. Department of Energy, must create additional specific program guidelines and the application process by August 16, 2009.

Any taxpayer receiving this credit may not also receive business energy investment tax credit.

**Note: This credit may be expanded in the future to include other energy technologies that reduce greenhouse gas emissions, as determined by the U.S. Treasury Department.*

Last DSIRE Review: 02/19/2009

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>





Federal Financial Incentives

Personal Exemption

Residential Energy Conservation Subsidy Exclusion (Personal)

Incentive Type: Personal Exemption

Eligible Efficiency

Technologies: Yes; specific technologies not identified

Eligible: Solar Water Heat, Solar Space Heat, Photovoltaics

Renewable/Other

Technologies:

Applicable Sectors: Residential, Multi-Family Residential

Amount: 100% of subsidy

Web Site: <http://www.irs.gov/publications/p525/index.html>

Authority 1: [26 USC § 136](#)

Summary:

According to Section 136 of the IRS Code, 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."

The term "energy conservation measure" includes installations or modifications primarily designed to reduce consumption of electricity or natural gas, or improve the management of energy demand. Eligible dwelling units include houses, apartments, condominiums, mobile homes, boats and similar properties. If a building or structure contains both dwelling and other units, any subsidy must be properly allocated.

Given the definition of "energy conservation measure," there is strong evidence that utility rebates for residential solar thermal and solar electric projects may be nontaxable. However, the IRS has not ruled definitively on this issue. For taxpayers considering using this provision for renewable energy systems, consultation with a tax attorney is advised.

Other types of utility subsidies that may come in the form of credits or reduced rates may also be nontaxable, according to IRS Publication 525:

"Utility rebates. If you are a customer of an electric utility company and you participate in the utility's energy conservation program, you may receive on your monthly electric bill either: a reduction in the purchase price of electricity furnished to you (rate reduction), or a nonrefundable credit against the purchase price of the electricity. The amount of the rate reduction or nonrefundable credit is not included in your income."



** The term "public utility" is defined as an entity "engaged in the sale of electricity or natural gas to residential, commercial, or industrial customers for use by such customers." The term includes federal, state and local government entities.*

Last DSIRE Review: 06/19/2008

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>





Federal Financial Incentives

Personal Tax Credit

Residential Energy Efficiency Tax Credit

Incentive Type: Personal Tax Credit

Eligible Efficiency Technologies: Water Heaters, Furnaces, Boilers, Heat pumps, Air conditioners,

Building Insulation, Windows, Doors, Roofs, Circulating fans used in a qualifying furnace

Eligible Renewable/Other Technologies: Biomass, Stoves that use qualified biomass fuel

Applicable Sectors: Residential

Amount: 30%

Maximum Incentive: Aggregate amount of credit for all technologies placed in service in 2009 and 2010 combined is limited to \$1,500

Equipment/Installation Requirements: Equipment must be new and in compliance with all applicable performance and safety standards as described in tax code

Authority 1: [26 USC § 25C](#)

Date Enacted: 8/8/2005 (subsequently amended)

Date Effective: 1/1/2006

Expiration Date: 12/31/2010

Summary:

The federal tax credit for energy-efficient home improvements was established by the *Energy Policy Act of 2005*. After expiring December 31, 2007, the credit was extended and expanded by The Energy Improvement and Extension Act of 2008 (H.R. 1424: Div. B, Sec. 302) and The American Recovery and Reinvestment Act of 2009 (H.R. 1: Div. B, Sec. 1121). The credit now applies to eligible equipment purchased between January 1, 2009, and December 31, 2010. In addition to extending the credit, H.R. 1424 and H.R. 1 strengthened the efficiency requirements for most equipment, extended the credit to stoves that use biomass fuel and asphalt roofs with appropriate cooling granules; raised the cap for the credit; and redesigned the way the credit is calculated.

The credit applies 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 serve a dwelling in the United States that is owned and used by



the taxpayer as a primary residence. The maximum amount of homeowner credit for all improvements combined is \$1,500 for equipment purchased during the two-year period of 2009 and 2010.

Building Envelope Improvements

Owners of existing homes receive a tax credit worth 30% of the cost of upgrading the efficiency of the building's envelope. Installation (labor) costs are not included. The following improvements are eligible for the tax credit:

- Insulation materials and systems designed to reduce a home's heat loss or gain
- Exterior doors and windows (including skylights) and
- Pigmented metal roofs designed to reduce heat gain, and asphalt roofs with appropriate cooling granules.

Heating, Cooling and Water-Heating, Equipment

Taxpayers who purchase qualified residential energy-efficient property are eligible for a tax credit worth 30% of the system cost, *including* labor costs. The credit may also be applied to labor costs for assembly and original installation of eligible property. The following types of equipment are eligible:

- Electric heat pump water heaters
- Electric heat pumps
- Central air conditioners
- Natural gas, propane or oil water heaters
- Natural gas, propane or oil furnace or hot water boilers
- Advanced main air circulating fans
- Biomass stoves that use "plant-derived fuel available on a renewable or recurring basis, including agricultural crops and trees, wood and wood waste and residues (including wood pellets), plants (including aquatic plants), grasses, residues, and fibers"

Performance and quality standards for tax credit eligibility vary by technology. (See 26 USC § 25C, H.R. 1424 of 2008 and H.R. 1 of 2009) for details. Additionally, the [Energy Star web site](#) offers detailed information on qualifying products.

Significantly, *The American Recovery and Reinvestment Act of 2009* repealed a previous limitation on the use of the credit for eligible projects also supported by "subsidized energy financing." For projects placed in service after December 31, 2008, this limitation no longer applies. Businesses that receive other incentives are advised to consult with a tax professional regarding how to calculate this federal tax credit.

Background

The *Energy Policy Act of 2005* established the tax credit for energy improvements to existing homes. The credit was originally limited to purchases made in 2006 and 2007, with an aggregate



cap of \$500 for all qualifying purchases made in these two years combined. There were also separate individual caps for the different equipment types. H.R. 1424 of 2008 reinstated the credit for 2009 purchases and made other minor adjustments. H.R. 1 further extended the credit to include purchases made in 2010 and replaced the \$500 aggregate cap with a \$1,500 aggregate cap for installations made in 2009 and 2010. Tax credits for installations made in 2006 and 2007 are still limited to \$500. Any purchase made in 2008 is not eligible for this tax credit.

Geothermal heat pumps were originally eligible for this credit, with a \$300 cap. However, geothermal heat pumps are now eligible for the residential renewable energy tax credit, with no cap.

Last DSIRE Review: 02/18/2009

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>



Residential Renewable Energy Tax Credit

Incentive Type: Personal Tax Credit

Eligible Renewable/Other Technologies: Solar Water Heat, Photovoltaics, Wind, Fuel Cells, Geothermal Heat Pumps, Other Solar Electric Technologies

Applicable Sectors: Residential

Amount: 30%

Maximum Incentive: Solar-electric systems placed in service before 2009: \$2,000
Solar-electric systems placed in service after 2008: no maximum
Solar water heaters placed in service before 2009: \$2,000
Solar water heaters placed in service after 2008: no maximum
Wind turbines placed in service in 2008: \$4,000
Wind turbines placed in service after 2008: no maximum
Geothermal heat pumps placed in service in 2008: \$2,000
Geothermal heat pumps placed in service after 2008: no maximum
Fuel cells: \$500 per 0.5 kW

Carryover Provisions: Excess credit may be carried forward to succeeding tax year

Eligible System Size: Fuel cells: 0.5 kW minimum

Equipment/Installation Requirements: Solar water heating property must be certified by SRCC or by comparable entity endorsed by the state in which the system is installed. At least half the energy used to heat the dwelling's water must be from solar. Geothermal heat pumps must meet federal Energy Star requirements. Fuel cells must have electricity-only generation efficiency greater than 30%.

Authority 1: [26 USC § 25D](#)

Date Enacted: 8/8/2005 (subsequently amended)

Date Effective: 1/1/2006

Expiration Date: 12/31/2016

Authority 2: [IRS Form 5695 & Instructions: Residential Energy Credits](#)

Summary:

Note: The American Recovery and Reinvestment Act of 2009 does not allow taxpayers eligible for the residential renewable energy tax credit to receive a U.S. Treasury Department grant instead of taking this credit.

Established by the federal *Energy Policy Act of 2005*, the federal tax credit for residential energy property initially applied to solar-electric systems, solar water heating systems and fuel cells. *The Energy Improvement and Extension Act of 2008* (H.R. 1424) extended the tax credit to small wind-energy systems and geothermal heat pumps, effective January 1, 2008. Other key revisions included an eight-



year extension of the credit to December 31, 2016, the ability to take the credit against the alternative minimum tax, and the removal of the \$2,000 credit limit for solar-electric systems beginning in 2009. The credit was further enhanced in February 2009 by *The American Recovery and Reinvestment Act of 2009* (H.R. 1: Div. B, Sec. 1122, p. 46), which removed the maximum credit amount for all eligible technologies (except fuel cells) placed in service after 2008.

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. Expenditures with respect to the equipment are treated as made when the installation is completed. If the installation is on a new home, the "placed in service" date is the date of occupancy by the homeowner. Expenditures include labor costs for onsite preparation, assembly or original system installation, and for piping or wiring to interconnect a system to the home. If the federal tax credit exceeds tax liability, the excess amount may be carried forward to the succeeding taxable year. The excess credit can be carried forward until 2016, but it is unclear whether the unused tax credit can be carried forward after then. The maximum allowable credit, equipment requirements and other details vary by technology, as outlined below.

Solar-electric property

- There is no maximum credit for systems placed in service after 2008. The maximum credit is \$2,000 for systems placed in service before January 1, 2009.
- Systems must be placed in service on or after January 1, 2006, and on or before December 31, 2016.
- The home served by the system does *not* have to be the taxpayer's principal residence.
- Note that the Solar Energy Industries Association (SEIA) has published a three-page document that provides answers to frequently asked questions regarding the federal tax credits for solar energy.

Solar water-heating property

- There is no maximum credit for systems placed in service after 2008. The maximum credit is \$2,000 for systems placed in service before January 1, 2009.
- Systems must be placed in service on or after January 1, 2006, and on or before December 31, 2016.
- Equipment must be certified for performance by the Solar Rating Certification Corporation (SRCC) or a comparable entity endorsed by the government of the state in which the property is installed.
- At least half the energy used to heat the dwelling's water must be from solar in order for the solar water-heating property expenditures to be eligible.
- The tax credit does not apply to solar water-heating property for swimming pools or hot tubs.
- The home served by the system does *not* have to be the taxpayer's principal residence.
- Note that the Solar Energy Industries Association (SEIA) has published a three-page document that provides answers to frequently asked questions regarding the federal tax credits for solar energy.

Fuel cell property

- The maximum credit is \$500 per half kilowatt (kW).
- Systems must be placed in service on or after January 1, 2006, and on or before December 31, 2016.
- The fuel cell must have a nameplate capacity of at least 0.5 kW of electricity using an electrochemical process and an electricity-only generation efficiency greater than 30%.



- In case of joint occupancy, the maximum qualifying costs that can be taken into account by all occupants for figuring the credit is \$1,667 per half kilowatt. This does not apply to married individuals filing a joint return. The credit that may be claimed by each individual is proportional to the costs he or she paid.
- The home served by the system *must* be the taxpayer's principal residence.

Small wind-energy property

- There is no maximum credit for systems placed in service after 2008. The maximum credit is \$500 per half kilowatt, not to exceed \$4,000, for systems placed in service in 2008.
- Systems must be placed in service on or after January 1, 2008, and on or before December 31, 2016.
- The home served by the system does *not* have to be the taxpayer's principal residence.

Geothermal heat pumps

- There is no maximum credit for systems placed in service after 2008. The maximum credit is \$2,000 for systems placed in service in 2008.
- Systems must be placed in service on or after January 1, 2008, and on or before December 31, 2016.
- The geothermal heat pump must meet federal Energy Star program requirements in effect at the time the installation is completed.
- The home served by the system does *not* have to be the taxpayer's principal residence.

Significantly, *The American Recovery and Reinvestment Act of 2009* repealed a previous limitation on the use of the credit for eligible projects also supported by "subsidized energy financing." For projects placed in service after December 31, 2008, this limitation no longer applies.

History

The federal *Energy Policy Act of 2005* established a 30% tax credit (up to \$2,000) for the purchase and installation of residential solar electric and solar water heating property and a 30% tax credit (up to \$500 per 0.5 kilowatt) for fuel cells. Initially scheduled to expire at the end of 2007, the tax credits were extended through December 31, 2008, by the *Tax Relief and Health Care Act of 2006*.

In October 2008, the *Energy Improvement and Extension Act of 2008* extended the tax credits once again (until December 31, 2016), and a new tax credit for small wind-energy systems and geothermal heat pump systems was created. In February 2009, *The American Recovery and Reinvestment Act of 2009* removed the maximum credit amount for all eligible technologies (except fuel cells) placed in service after 2008.

Last DSIRE Review: 02/19/2009

Contact: Public Information - IRS

U.S. Internal Revenue Service

1111 Constitution Avenue, N.W.; Washington, DC 20224

Phone: (800) 829-1040 **Web Site:** <http://www.irs.gov>





Federal Financial Incentives Production Incentive

Renewable Energy Production Incentive (REPI)

Incentive Type: Personal Tax Credit

Eligible Renewable/Other Technologies: Solar Water Heat, Photovoltaics, Wind, Fuel Cells, Geothermal Heat Pumps, Other Solar Electric Technologies

Applicable Sectors: Residential

Amount: 30%

Maximum Incentive: Solar-electric systems placed in service before 2009: \$2,000
Solar-electric systems placed in service after 2008: no maximum
Solar water heaters placed in service before 2009: \$2,000
Solar water heaters placed in service after 2008: no maximum
Wind turbines placed in service in 2008: \$4,000
Wind turbines placed in service after 2008: no maximum
Geothermal heat pumps placed in service in 2008: \$2,000
Geothermal heat pumps placed in service after 2008: no maximum
Fuel cells: \$500 per 0.5 kW

Carryover Provisions: Excess credit may be carried forward to succeeding tax year

Eligible System Size: Fuel cells: 0.5 kW minimum

Equipment/Installation Requirements: Solar water heating property must be certified by SRCC or by comparable entity endorsed by the state in which the system is installed. At least half the energy used to heat the dwelling's water must be from solar. Geothermal heat pumps must meet federal Energy Star requirements. Fuel cells must have electricity-only generation efficiency greater than 30%.

Authority 1: [26 USC § 25D](#)

Date Enacted: 8/8/2005 (subsequently amended)

Date Effective: 1/1/2006

Expiration Date: 12/31/2016

Authority 2: [IRS Form 5695 & Instructions: Residential Energy Credits](#)

Summary:

Note: The American Recovery and Reinvestment Act of 2009 does not allow taxpayers eligible for the residential renewable energy tax credit to receive a U.S. Treasury Department grant instead of taking this credit.



Established by the federal *Energy Policy Act of 2005*, the federal tax credit for residential energy property initially applied to solar-electric systems, solar water heating systems and fuel cells. **The Energy Improvement and Extension Act of 2008** (H.R. 1424) extended the tax credit to small wind-energy systems and geothermal heat pumps, effective January 1, 2008. Other key revisions included an eight-year extension of the credit to December 31, 2016, the ability to take the credit against the alternative minimum tax, and the removal of the \$2,000 credit limit for solar-electric systems beginning in 2009. The credit was further enhanced in February 2009 by **The American Recovery and Reinvestment Act of 2009** (H.R. 1: Div. B, Sec. 1122, p. 46), which removed the maximum credit amount for all eligible technologies (except fuel cells) placed in service after 2008.

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. Expenditures with respect to the equipment are treated as made when the installation is completed. If the installation is on a new home, the "placed in service" date is the date of occupancy by the homeowner. Expenditures include labor costs for onsite preparation, assembly or original system installation, and for piping or wiring to interconnect a system to the home. If the federal tax credit exceeds tax liability, the excess amount may be carried forward to the succeeding taxable year. The excess credit can be carried forward until 2016, but it is unclear whether the unused tax credit can be carried forward after then. The maximum allowable credit, equipment requirements and other details vary by technology, as outlined below.

Solar-electric property

- There is no maximum credit for systems placed in service after 2008. The maximum credit is \$2,000 for systems placed in service before January 1, 2009.
- Systems must be placed in service on or after January 1, 2006, and on or before December 31, 2016.
- The home served by the system does *not* have to be the taxpayer's principal residence.
- Note that the Solar Energy Industries Association (SEIA) has published a [three-page document](#) that provides answers to frequently asked questions regarding the federal tax credits for solar energy.

Solar water-heating property

- There is no maximum credit for systems placed in service after 2008. The maximum credit is \$2,000 for systems placed in service before January 1, 2009.
- Systems must be placed in service on or after January 1, 2006, and on or before December 31, 2016.
- Equipment must be certified for performance by the Solar Rating Certification Corporation (SRCC) or a comparable entity endorsed by the government of the state in which the property is installed.
- At least half the energy used to heat the dwelling's water must be from solar in order for the solar water-heating property expenditures to be eligible.
- The tax credit does not apply to solar water-heating property for swimming pools or hot tubs.



- The home served by the system does *not* have to be the taxpayer's principal residence.
- Note that the Solar Energy Industries Association (SEIA) has published a three-page document that provides answers to frequently asked questions regarding the federal tax credits for solar energy.

Fuel cell property

- The maximum credit is \$500 per half kilowatt (kW).
- Systems must be placed in service on or after January 1, 2006, and on or before December 31, 2016.
- The fuel cell must have a nameplate capacity of at least 0.5 kW of electricity using an electrochemical process and an electricity-only generation efficiency greater than 30%.
- In case of joint occupancy, the maximum qualifying costs that can be taken into account by all occupants for figuring the credit is \$1,667 per half kilowatt. This does not apply to married individuals filing a joint return. The credit that may be claimed by each individual is proportional to the costs he or she paid.
- The home served by the system *must* be the taxpayer's principal residence.

Small wind-energy property

- There is no maximum credit for systems placed in service after 2008. The maximum credit is \$500 per half kilowatt, not to exceed \$4,000, for systems placed in service in 2008.
- Systems must be placed in service on or after January 1, 2008, and on or before December 31, 2016.
- The home served by the system does *not* have to be the taxpayer's principal residence.

Geothermal heat pumps

- There is no maximum credit for systems placed in service after 2008. The maximum credit is \$2,000 for systems placed in service in 2008.
- Systems must be placed in service on or after January 1, 2008, and on or before December 31, 2016.
- The geothermal heat pump must meet federal Energy Star program requirements in effect at the time the installation is completed.
- The home served by the system does *not* have to be the taxpayer's principal residence.

Significantly, *The American Recovery and Reinvestment Act of 2009* repealed a previous limitation on the use of the credit for eligible projects also supported by "subsidized energy financing." For projects placed in service after December 31, 2008, this limitation no longer applies.

History

The federal *Energy Policy Act of 2005* established a 30% tax credit (up to \$2,000) for the purchase and installation of residential solar electric and solar water heating property and a 30% tax credit (up to \$500 per 0.5 kilowatt) for fuel cells. Initially scheduled to expire at the end of 2007, the tax credits were extended through December 31, 2008, by the *Tax Relief and Health*



Care Act of 2006.

In October 2008, the *Energy Improvement and Extension Act of 2008* extended the tax credits once again (until December 31, 2016), and a new tax credit for small wind-energy systems and geothermal heat pump systems was created. In February 2009, *The American Recovery and Reinvestment Act of 2009* removed the maximum credit amount for all eligible technologies (except fuel cells) placed in service after 2008.

Last DSIRE Review: 02/19/2009

Contact:

Public Information - IRS

U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224

Phone: (800) 829-1040

Web Site: <http://www.irs.gov>





Federal Rules, Regulation & Policies Appliance/Equipment Efficiency Standards

Federal Appliance Standards

Incentive Type: Appliance/Equipment Efficiency Standards

Eligible Efficiency Technologies: Clothes Washers, Dishwasher, Refrigerators/Freezers, Dehumidifiers,

Ceiling Fan, Water Heaters, Lighting, Furnaces, Boilers, Heat pumps, Air conditioners, Motors, Exit and traffic signs, unit heaters, transformers, others

Applicable Sectors: Industrial, (Product Manufacturers)

Equipment

Requirements Specified in Code of Federal Regulations

Test Methods Varies

Implementing

Agency U.S. Department of Energy

Web Site: http://www.eere.energy.gov/buildings/appliance_standards

Authority 1: [EPACT 2005 § 135](#)

Date Enacted: 8/8/2005

Authority 2: [10 CFR 430](#)

Authority 3: [10 CFR 431](#)

Summary:

Minimum standards of energy efficiency for many major appliances were established by the U.S. Congress in the federal Energy Policy and Conservation Act (EPCA) of 1975, and have been subsequently amended by succeeding energy legislation, including the federal Energy Policy Act of 2005. The U.S. Department of Energy (DOE) is required to set appliance efficiency standards at levels that achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. The DOE web site lists updates and final rulings for 19 residential product categories and 14 commercial product categories.

The Energy Independence and Security Act of 2007 ([EISA](#)), established new standards for a few equipment types not already subjected to a standard, and updated some existing standards. Perhaps the most significant new standard that EISA 2007 established is for general service lighting which will be deployed in two phases. First, by 2012-2014 (phasing in over several years), common light bulbs will be required to use about 20-30% less energy than present incandescent bulbs. Second, by 2020, light bulbs must consume 60% less energy than today's bulbs; this requirement will effectively phase out the incandescent light bulb.



The president issued a Memorandum for the Secretary of Energy in February of 2009 requesting the DOE to take all necessary steps to finalize outstanding efficiency standards as expeditiously as possible. Such standards include those with deadlines prior to and including August 8, 2009. The memorandum also calls on the DOE to prioritize the development of efficiency standards for the remaining product categories based on energy savings. Standards that will result in the greatest energy savings should be developed first, however, the DOE must ensure that it meets applicable deadlines for all standards.

Note: Several states have adopted their own appliance standards. Under the general rules of federal preemption, states which had set standards prior to federal enactment may enforce their state standards up until the federal standards become effective. States that have not set standards for a product category that is now enforced by the federal government are subject to the federal standard immediately.

Last DSIRE Review: 05/13/2009

Contact:

Public Information - DOE

U.S. Department of Energy
Office of Building Technology Assistance
1000 Independence Avenue, EE-42
Washington, DC 20585

Phone: (877) 337-3463

Web Site: <http://www.eere.energy.gov/buildings>





Federal Rules, Regulation & Policies Energy Standards for Public Buildings

Energy Goals and Standards for Federal Buildings

Incentive Type: Energy Standards for Public Buildings

Eligible Efficiency Comprehensive Measures/Whole Building, Custom/Others pending

Technologies: approval

Eligible Solar Water Heat

Renewable/Other

Technologies:

Applicable Sectors: Fed. Government

Goal: Total energy reduction goal of 30% by FY 2015, using FY 2003 as baseline

Requirement: Energy efficiency specs required in procurement bids and evaluations. Requires premium efficient products for electric motors, air conditioning and refrigeration equipment procurements. New federal buildings designed 30% below ASHRAE standards or IECC, and obtain 30% of their hot water demand from solar water heating, if life-cycle cost-effective.

Authority 1: [Energy Policy Act 2005 §§ 102, 104, 109](#)

Date Enacted: 8/8/2005

Authority 2: [Energy Independence and Security Act 2007 §§ 431, 523](#)

Date Enacted: 12/19/2007

Date Effective: 12/19/2007

Summary:

The federal Energy Policy Act of 2005 (EPA 2005) and the federal Energy Independence and Security Act of 2007 (EISA 2007) reaffirmed and expanded several previous goals and standards to reduce energy use in existing and new federal buildings. The 2007 energy bill extended the federal energy reduction goal to 30% by fiscal year 2015; directed federal agencies to purchase Energy Star and Federal Energy Management Program (FEMP)-designated products; and requires new federal buildings to be built 30% below ASHRAE* standards or the International Energy Conservation Code (IECC).

Section 431 of EISA 2007 increased the federal energy reduction goal from 2% per year (as established by EPA 2005) to 3% per year, resulting in 30% greater efficiency by 2015. The



reporting baseline for energy savings is 2003, so that energy consumption per gross square foot (of federal buildings) is reduced, compared to energy consumption in 2003. The specified percentage reductions for each fiscal year are:

- FY 20062%
- FY 20074%
- FY 20089%
- FY 200912%
- FY 201015%
- FY 201118%
- FY 201221%
- FY 201324%
- FY 201427%
- FY 201530%

Under EAct 2005, federal agencies are permitted to retain savings achieved through energy and water reductions. The U.S. Department of Energy (DOE) is charged with recommending new requirements for federal energy performance for FY 2016 - FY 2025 by December 13, 2014.

Section 104 of EAct 2005 directed federal agencies to purchase Energy Star and FEMP-designated products when procuring energy-consuming items covered by the Energy Star program, except when purchasing such items is not cost-effective or does not meet functional requirements of the agency. Agencies must also incorporate energy-efficient specifications in procurement bids and evaluations, and must only purchase premium efficient electric motors, air conditioning and refrigeration equipment. EAct 2005 also instructed the General Services Administration (GSA) and the U.S. Department of Defense to clearly identify and display Energy Star and FEMP-designated products in any inventory, catalog or product listing.

Section 109 of EAct 2005 required new federal buildings to be designed 30% below ASHRAE standards or IECC, to the extent that technologies employed are life-cycle cost-effective. In addition, sustainable design principles must be applied to new and replacement buildings. All agencies must identify new building projects in their budget requests and identify those that meet or exceed the standard.

Section 523 of the EISA 2007 requires that at least 30% of the hot water demand for each new federal building or existing federal buildings undergoing a major renovation be met through the use of solar hot water heating, if it is determined to be life-cycle cost-effective.

In December 2007, DOE adopted a final rule to implement certain efficiency provisions of EAct 2005. This final rule applies to efficiency standards for federally-funded commercial and multi-family high-rise residential buildings and low-rise residential buildings.

** ASHRAE is the acronym for the American Society of Heating, Refrigerating and Air-Conditioning Engineers.*

Last DSIRE Review: 04/30/2009



Energy Reduction Goals for Federal Agencies

Incentive Type: Energy Standards for Public Buildings

Eligible Efficiency

Technologies: Comprehensive Measures/Whole Building

Eligible Renewable Fuel Vehicles, Other Alternative Fuel Vehicles

Renewable/Other

Technologies:

Applicable Sectors: Fed. Government

Goal: Total energy reduction goal for every federal agency is 30% by 2015, relative to the baseline of the agency's energy use in FY03

Requirement: At least half of the required renewable energy consumed by the agency in a fiscal year must come from new renewable sources. New construction and major renovation of agency buildings must comply with the "Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings" set forth in the *Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (2006)*. Electronic equipment purchased by agencies must be Electronic Product Environmental Assessment Tool (EPEAT)-registered products, unless there is no EPEAT standard for such product.

Web Site: http://www1.eere.energy.gov/femp/news/news_detail.html?news_id=10538

Authority 1: [Executive Order 13423](#)

Date Enacted: 1/24/2007

Date Effective: 1/24/2007

Summary:

Executive Order 13423: Strengthening Federal Environmental, Energy, and Transportation Management was signed by President George W. Bush on January 24, 2007. It establishes total energy reduction goals for every federal agency. These goals apply to the electricity consumed by federal buildings as well as the fuel consumed by federal fleets, provided a fleet consists of at least 20 vehicles. The executive order also establishes water-reduction goals, mandates recycling programs within facilities, and requires agencies to purchase electronic equipment registered with the Electronic Product Environmental Assessment Tool (EPEAT).

Executive Order 13423 established a schedule by which all federal agencies should reduce their total energy intensity by 30% by the end of 2015, relative to the baseline of the agency's energy use in fiscal year 2003. The table below shows the annual energy reductions required to meet this goal:



- FY 2006: 3%
- FY 2007: 6%
- FY 2008: 9%
- FY 2009: 12%
- FY 2010: 15%
- FY 2011: 18%
- FY 2012: 21%
- FY 2013: 24%
- FY 2014: 27%
- FY 2015: 30%

To help achieve these energy reductions, new construction and major renovation of agency buildings must comply with the "Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings" set forth in the Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (2006), in addition to the energy goals and standards established by the federal Energy Policy Act of 2005. These building standards include a target energy use of 30% below the average building performance for new buildings, and a target that is 20% below the average for renovations. The building standards also take into consideration indoor environmental quality, and a reduction in the environmental impact of the materials within the building in favor of bio-based and post-consumer products.

The executive order also calls for agencies to begin in fiscal year 2008 to reduce water consumption intensity when cost-effective, relative to the baseline of the agency's water consumption in fiscal year 2007. The target reduction is 2% annually through the end of fiscal year 2015 (or 16% by the end of fiscal year 2015). To help agencies conserve water, DOE's Federal Energy Management Program (FEMP) has developed a guidance document entitled Establishing Baseline and Meeting Water Conservation Goals of Executive Order 13423.

Agencies that operate fleets of at least 20 vehicles are also required to reduce their fleet's total consumption of petroleum products by 2% annually through 2015, while *increasing* their consumption of non-petroleum-based fuel by 10% per year. Agencies are also required to purchase plug-in hybrid vehicles when life-cycle cost analysis demonstrates their cost to be reasonably similar to other vehicles.

The Energy Policy Act of 2005 established green power purchasing goals for the federal government, whereby the 7.5% of electricity used by federal agencies must be obtained from renewable sources by 2013. Executive Order 13423 now requires at least half of the required renewable energy consumed by an agency in a fiscal year to come from sources placed in service in 1999 or later.

Last DSIRE Review: 04/30/2009

Contact:

Public Information – FEMP, U.S. Department of Energy

Federal Energy Management Program, EE-2L

1000 Independence Ave., SW; Washington, DC 20585-0121

Phone: (202) 586-5772 **Fax:** (202) 586-3000 **Web Site:** <http://www1.eere.energy.gov/femp>





Federal Rules, Regulation & Policies Green Power Purchasing/Aggregation

U.S. Federal Government – Green Power Purchasing Goal

Incentive Type: Green Power Purchasing/Aggregation

Eligible Renewable/Other Technologies: Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Municipal Solid Waste, Tidal Energy, Wave Energy, Ocean Thermal

Applicable Sectors: Fed. Government

% Renewables: 3% in fiscal years 2007-2009;
5% in fiscal years 2010-2012;
7.5% in fiscal year 2013 and thereafter

Source: At least half of the required renewable energy must come from new renewable sources

Appropriation: Commercialization Program - \$50 million for each FY 2006-2010
Evaluation Program - \$10 million for each FY 2006-2010

Web Site: http://www1.eere.energy.gov/femp/about/eo_fedmgmt.html

Authority 1: [42 USC § 15852](#)

Date Enacted: 8/8/2005

Authority 2: [Executive Order 13423](#)

Date Enacted: 1/24/2007

Date Effective: 1/24/2007

Summary:

The federal Energy Policy Act of 2005 (EPAct 2005) extended and expanded several previous goals and standards to reduce energy use in existing and new federal buildings. Section 203 of EPAct 2005 requires that, to the extent it is economically feasible and technically practicable, the total amount of renewable electric energy consumed by the federal government during any fiscal year shall not be less than the following:

- 3% in fiscal years 2007-2009
- 5% in fiscal years 2010-2012
- 7.5% in fiscal year 2013 thereafter

The amount of renewable-energy credit is doubled for electricity produced and used on-site at a federal facility, produced on federal lands and used at a federal facility, or if it is produced on Indian land as defined in title XXVI of the Energy Policy Act of 1992 and used at a federal facility.



Renewable electrical energy technologies defined in this section include solar, wind, biomass, landfill gas, ocean (including tidal, wave, current and thermal), geothermal, municipal solid waste, and new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project. Executive Order 13423, issued in January 2007, requires at least half of the mandated renewable energy consumed by an agency in a fiscal year to be generated by systems sources placed into service after January 1, 1999.

Section 204 of EPAct 2005 establishes a photovoltaic (PV) energy commercialization program for the procurement and installation of PV systems in public and federal buildings. It requires the installation of 20,000 solar-energy systems on federal buildings by 2010, as contained in the federal Million Solar Roof Initiative (MSRI) of 1997. The commercialization program has been appropriated \$50 million annually for fiscal years 2006–2010, until funds are expended. An evaluation program has been appropriated \$10 million annually for fiscal years 2006-2010, until funds are expended.

The Federal Energy Management Program (FEMP) has issued guidelines to help federal agencies meet energy management and renewable energy requirements for complying with EPAct 2005 and Executive Order 13423. For an overview of these requirements and for updates on progress in meeting the federal renewable-energy goals, see the FEMP [web site](#).

Last DSIRE Review: 08/06/2008

Contact:

Public Information - FEMP

U.S. Department of Energy
Federal Energy Management Program
EE-2L

1000 Independence Ave., SW
Washington, DC 20585-0121

Phone: (202) 586-5772

Fax: (202) 586-3000

Web Site: <http://www1.eere.energy.gov/femp>





Federal Rules, Regulation & Policies Interconnection

Interconnection Standards for Small Generators

Incentive Type: Interconnection

Eligible Renewable/Other Technologies: Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, CHP/Cogeneration, Anaerobic

Digestion, Small Hydroelectric, Tidal Energy, Wave Energy, Ocean Thermal, Microturbines, Other Distributed Generation Technologies

Applicable Sectors: Commercial, Industrial, Residential, Nonprofit, Schools, Local Government, State Government, Tribal Government, Fed. Government, Agricultural, Institutional

Applicable Utilities: FERC standards generally apply to all transmission-level interconnection; state standards generally apply to distribution-level interconnection

System Capacity

Limit: 20 MW

Standard

Agreement: Yes

Insurance "Additional liability insurance" required only "if necessary as a

Requirements: function of owning and operating a generating facility"

External Disconnect

Switch: Not addressed

Net Metering

Required: No

Authority 1: [FERC Order No. 2006](#)

Date Enacted: 5/12/2005

Authority 2: [FERC Order No. 2006-A](#)

Date Enacted: 11/22/2005

Authority 3: [FERC Order No. 2006-B](#)

Date Enacted: 7/20/2006

Summary:

The Federal Energy Regulatory Commission (FERC) adopted "small generator" interconnection standards for distributed energy resources up to 20 megawatts (MW) in capacity in May 2005.*

The FERC's standards apply only to facilities subject to the jurisdiction of the commission; mostly, these are systems that interconnect at the transmission level. The standards generally do



not apply to distribution-level interconnection, which is regulated by state public utilities commissions. However, the FERC has noted that its interconnection standards for small generators should serve as a useful model for state-level standards.

The FERC's standards include a Small Generator Interconnection Procedures (SGIP) document and a Small Generator Interconnection Agreement (SGIA). The SGIP contains the technical procedures that the small generator and utility must follow in the course of connecting the generator with the utility's lines. The SGIA contains the contractual provisions for the interconnection and spells out who pays for improvements to the utility's electric system, if needed to complete the interconnection. The standards include provisions for three levels of interconnection:

- The "10-kilowatt (kW) Inverter Process," for certified, inverter-based systems no larger than 10 kW;
- The "Fast Track Process," for certified systems no larger than 2 MW; and
- The default "Study Process," for all other systems no larger than 20 MW.

The standards include technical screens for each level of interconnection. Notably, the FERC standards do not require systems to have an external disconnect switch. Utilities and customers must follow specific timelines, and guidelines for interconnection and study fees are established. Customers must obtain liability insurance "sufficient to insure against all reasonably foreseeable direct liabilities given the size and nature of the generating equipment being interconnected, the interconnection itself, and the characteristics of the system to which the interconnection is made." Additional liability insurance must be obtained "only if necessary as a function of owning and operating a generating facility."

** The FERC adopted interconnection standards for facilities larger than 20 MW in July 2003. (See FERC Order Nos. 2003, 2003-A, 2003-B and 2003-C.) FERC's standards for larger generators include a standard Large Generator Interconnection Procedures (LGIP) document and a standard Large Generator Interconnection Agreement (LGIA).*

Last DSIRE Review: 11/10/2008

Contact:

Public Information - FERC

Federal Energy Regulatory Commission

888 First Street, NE

Washington, DC 20426

Web Site: <http://www.ferc.gov>





Energy Star- Federal Tax Credits for Energy Efficiency

Tax Credits for Consumers:

Home Improvements

Tax credits are now available for home improvements:

- must be "[placed in service](#)" from January 1, 2009 through December 31, 2010
- must be for taxpayer's principal residence, EXCEPT for geothermal heat pumps, solar water heaters, solar panels, and small wind energy systems (where second homes and rentals qualify)
- \$1,500 is the maximum total amount that can be claimed for all products placed in service in 2009 & 2010 for most home improvements, EXCEPT for geothermal heat pumps, solar water heaters, solar panels, fuel cells, and small wind energy systems which are not subject to this cap, and are in effect through 2016
- must have a [Manufacturer Certification Statement](#) to qualify
- for record keeping, save your receipts and the [Manufacturer Certification Statement](#)
- improvements made in 2009 will be claimed on your 2009 taxes (filed by April 15, 2010) — use IRS Tax Form 5695 (2009 version) — it will be available late 2009 or early 2010
- If you are building a new home, you can qualify for the tax credit for geothermal heat pumps, photovoltaics, solar water heaters, small wind energy systems and fuel cells, **but not the tax credits for windows, doors, insulation, roofs, HVAC, or non-solar water heaters.**

SUMMARY OF TAX CREDITS FOR HOMEOWNERS

Product Category	Product Type	Tax Credit Specification	Tax Credit	Notes
Insulation	Insulation	Meets 2009 IECC & Amendments	30% of cost, up to \$1,500 ¹	For insulation to qualify, its primary purpose must be to insulate (example: insulated siding does not qualify). Check to see if you have Home Performance with ENERGY STAR in your areas. Adding insulation to your home is covered.
Windows & Doors	Exterior Windows and	Before June 1, 2009: Must meet ENERGY STAR criteria	30% of cost, up to \$1,500 ¹	Not all ENERGY STAR labeled windows and skylights qualify for tax



	Skylights	<p><u>After June 1, 2009:</u> U factor \leq 0.30</p> <p>SHGC \leq 0.30</p>		<p>credit.</p> <p>More information</p>
	Storm Windows	<p>In combination with the exterior window over which it is installed:</p> <ol style="list-style-type: none"> has a U-factor and SHGC of 0.30 or below Meets the IECC 	30% of cost, up to \$1,500 ¹	View our FAQ on storm doors and storm windows.
	Exterior Doors	<p><u>Before June 1, 2009:</u> Must meet ENERGY STAR criteria</p> <p><u>After June 1, 2009:</u> U factor \leq 0.30</p> <p>SHGC \leq 0.30</p>	30% of cost, up to \$1,500 ¹	<p>Not all ENERGY STAR doors will qualify.</p> <p>More information</p>
	Storm Doors	<p>In combination with a wood door over which it is installed:</p> <ol style="list-style-type: none"> has a U-factor and SHGC of 0.30 or below Meets the IECC 	30% of cost, up to \$1,500 ¹	View our FAQ on storm doors and storm windows.
	Roofing	Metal Roofs, Asphalt Roofs	All ENERGY STAR qualified metal and reflective asphalt shingles	30% of cost, up to \$1,500 ¹
HVAC	Central A/C	<p><i>Split Systems:</i> EER \geq 13 SEER \geq 16</p> <p><i>Package systems:</i> EER \geq 12 SEER \geq 14</p>	30% of cost, up to \$1,500 ¹	<p>For a list of qualified products, read this FAQ.</p> <p>Note — not all ENERGY STAR products will qualify for the tax credit. View ENERGY STAR criteria.</p>
	Air Source Heat Pumps	<p><i>Split Systems:</i> HSPF \geq 8.5 EER \geq 12.5</p>	30% of cost, up to \$1,500 ¹	



		SEER \geq 15 <i>Package systems:</i> HSPF \geq 8 EER \geq 12 SEER \geq 14		
	Natural Gas or Propane Furnace	AFUE \geq 95	30% of cost, up to \$1,500 ¹	For a partial list of qualifying products go to: Air-Conditioning, Heating, Refrigeration Institute (AHRI) Not all ENERGY STAR products will qualify for the tax credit. View ENERGY STAR criteria for furnaces , boilers .
	Oil Furnace	AFUE \geq 90	30% of cost, up to \$1,500 ¹	
	Gas, Propane, or Oil Hot Water Boiler	AFUE \geq 90	30% of cost, up to \$1,500 ¹	
	Advanced Main Air Circulating Fan	No more than 2% of furnace total energy use. Read this FAQ if the fan qualifies, but the furnace does not.	30% of cost, up to \$1,500 ¹	
Water Heaters	Gas, Oil, Propane Water Heater	Energy Factor \geq 0.82 or a thermal efficiency of at least 90%.	30% of cost, up to \$1,500 ¹	
	Electric Heat	Same criteria as ENERGY	30% of cost, up	All ENERGY STAR electric heat pump water heaters



	Pump Water Heater	STAR: Energy Factor \geq 2.0	to \$1,500 ¹	qualify for the tax credit.
Biomass Stove	Biomass Stove	Stove which burns biomass fuel to heat a home or heat water. Thermal efficiency rating of at least 75% as measured using a lower heating value.	30% of cost, up to \$1,500 ¹	View FAQ on biomass stoves.
Geo-Thermal Heat Pump	Geo-Thermal Heat Pump	Same criteria as ENERGY STAR: Closed Loop: EER \geq 14.1 COP \geq 3.3 Open Loop: EER \geq 16.2 COP \geq 3.6 Direct Expansion: EER \geq 15 COP \geq 3.5	30% of the cost	All ENERGY STAR geo-thermal heat pumps qualify for the tax credit. Use IRS Form 5695 Must be “ placed into service ” before December 31, 2016.



Solar Energy Systems	Solar Water Heating	<p>At least half of the energy generated by the “qualifying property” must come from the sun. Homeowners may only claim spending on the solar water heating system property, not the entire water heating system of the household.</p> <p>The credit is not available for expenses for swimming pools or hot tubs.</p> <p>The water must be used in the dwelling.</p> <p>The system must be certified by the Solar Rating and Certification Corporation (SRCC).</p>	30% of cost	<p>All ENERGY STAR solar water heaters qualify for the tax credit.</p> <p>Use IRS Form 5695</p> <p>Must be placed in service before December 31, 2016.</p>
	Photovoltaic Systems	Photovoltaic systems must provide electricity for the residence, and must meet applicable fire and electrical code requirement.	30% of cost	<p>Use IRS Form 5695</p> <p>Must be placed in service before December 31, 2016.</p>
Small Wind Energy Systems	Residential Small Wind Turbines	Has nameplate capacity of not more than 100 kilowatts.	30% of cost	<p>Use IRS Form 5695</p> <p>Must be placed in service before December 31, 2016</p>
Fuel Cells	Residential Fuel Cell and microturbine system	Efficiency of at least 30% and must have a capacity of at least 0.5 kW.	30% of the cost, up to \$500 per .5 kW of power capacity	<p>Use IRS Form 5695</p> <p>Must be placed in service before December 31, 2016.</p>
Cars	Hybrid gasoline-electric, diesel, battery-electric, alternative fuel, and fuel cell		Based on a formula determined by vehicle weight, technology, and fuel economy	There is a 60,000 vehicle limit per manufacturer before a phase-out period begins. Toyota and Honda have already been phased out. Credit is still available



	vehicles		compared to base year models	for Ford, GM and Nissan. For more information visit: Fuelconomy.gov Use IRS Form 8910 for hybrid vehicles purchased for personal use. Use IRS Form 3800 for hybrid vehicles purchased for business purposes.
	Plug-in hybrid electric vehicles		\$2,500–\$7,500	The first 250,000 vehicles sold get the full tax credit (then it phases out like the hybrid vehicle tax credits). Effective January 1, 2009.

¹ Subject to a \$1,500 maximum per homeowner for all improvements combined.

Energy Star June 2009





MECKLENBURG COUNTY CODE ENFORCEMENT'S GREEN PERMIT REBATE PROGRAM

Promoting energy conservation and resource management through sustainable building practices.

Mecklenburg County is projected to have a 50% population increase in the next 25 years. The County has adopted the **2015 Community Vision** to protect our natural resources. To achieve this goal, the County must work with the development community to **undertake growth in a sustainable manner**. Following the 2006 Building Development Summit in Charlotte, the Building Development Commission (BDC) along side of Mecklenburg County Code Enforcement proposed the language adopted in SL 2007-381 as a means to implement a sustainable design fee rebate program. Our intent is to encourage building projects and practices that support development projects that **minimize impact on our natural resources** through the use of environmentally responsible certification programs such as **LEED & Green Globes**.

[The Leadership in Energy and Environmental Design](#) (LEED) Green Building Rating System is the nationally accepted benchmark for the design, construction, and operation of high performance and energy efficient green buildings. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, conservation of materials and resources, and indoor environmental quality. [The Green Globes Program](#) accredited through the American National Standards Institute (ANSI), and sponsored by Green Building Initiative is similar to LEED and also accepted under this program.



How Our Program Works:

Prior to the Certificate of Occupancy being issued, the Project Owner registers for this program by submitting an application to Code Enforcement. Upon receipt of the application, the Department will list that project in pending status. Upon achieving either LEED or Green Globes certification, the Owner will submit the certification form to Code Enforcement.



Upon receipt we will verify:

1. the project qualifies for the program; and
2. the certification is valid, and conforms to the program; and
3. the application was received prior to the issuing of the Certificate of Occupancy; and
4. the project has a valid Certificate of Occupancy; and
5. the program has enough money left in the fund to provide the full rebate for that year.

Rebate \$ Remaining For This Year *	Total Rebates Paid Since Program Inception *
\$1,150,000.00	\$0,000,000.00

Sustainable Design basis fee modification: provides a rebate of up to 25% of the Net Permit Fee to a maximum of \$100,000 for projects on the following scale:

- 10% rebate to a maximum of \$50,000 for LEED Certified or One Green Globe; or
- 15% rebate to a maximum of \$60,000 for LEED Silver or Two Green Globes; or
- 20% rebate to a maximum of \$75,000 for LEED Gold or Three Green Globes; or
- 25% rebate to a maximum of \$100,000 for LEED Platinum or Four Green Globes

*** Program Year Ends June 30, 2009**

As a condition of this fee rebate, all Project Owners must agree to the use of their project name and images for the promotional purposes.

February 2009





City of Statesville Electric Utility Department - Residential Energy Efficiency Rebate Program

Incentive Type: Utility Rebate Program

Eligible Efficiency

Technologies: Water Heaters, Heat pumps

Applicable Sectors: Residential

Incentive Amount: Heat Pumps: \$400
Water Heaters: \$150

Eligible System Size: Heat Pumps: Must be between 1.5 and 5 tons
Water Heaters: Minimum capacity of 30 gallon

Equipment

Requirements: Heat Pumps: Minimum SEER rating of 10

Project Review/Certification: A receipt for the new appliance must be submitted and an inspection performed before the City can make the rebate.

Web Site: [http://www.ci.statesville.nc.us/
index.php/content/?cgi-
bin=0&session_id=c9d782b865c54ab96ef46c4b69020e34&id=161](http://www.ci.statesville.nc.us/index.php/content/?cgi-bin=0&session_id=c9d782b865c54ab96ef46c4b69020e34&id=161)

Summary:

The City of Statesville Electric Utility Department offers rebates to its residential customers for installing new, energy efficient water heaters and heat pumps. To qualify for the heat pump rebate, customers must convert from gas or oil to a new electric heat pump, install a heat pump as part of new construction or install a heat pump for the first time in existing construction. Rebates are not paid for the replacement of an existing heat pump. A receipt for the new appliance must be submitted and an inspection performed before the City will award the rebate.

Last DSIRE Review: 08/14/2008

Contact:

Joe Blevins
City of Statesville
Electric Utility Department
PO Box 1111
Statesville, NC 28687-1111
Phone: (704) 878-3573

Web Site: [http://www.ci.statesville.nc.us/index.php/content/?cgi-
bin=0&session_id=c9d782b865c54ab96ef46c4b69020e34&id=14](http://www.ci.statesville.nc.us/index.php/content/?cgi-bin=0&session_id=c9d782b865c54ab96ef46c4b69020e34&id=14)



Energy Efficiency Related Programs in NC -- Comparison Matrix (12/08)

Program	Description	Cost	Website	Local Government Primary Audience? (Y/N)
Centralina Pilot Program with Duke Energy and Advanced Energy	Three local governments were selected to receive free energy assessments performed by Advanced Energy. The funding for assessments was drawn from allocation out of Duke Energy rate base. Duke Energy also provided a contribution to Centralina's Foundation for program management.	No cost for assessment; may be cost involved with implementation	n/a	Y
Advanced Energy	Has staff that performs energy audits, either funded through the utility or paid by the customer.	Cost depends on type of audit and program	http://www.advancedenergy.org/	N
ASU Building Program	Education program for future building construction managers and building professionals.	n/a	http://www.tec.appstate.edu/construction/construction.html	N
Duke Energy	Free online energy analysis tool available to customers. Duke Energy has provided assessments to business customers in the past, performed by third parties such as Advanced Energy. Past free assessments were funded through agreements with the Utilities Commission, or customers paid for the assessment.	Online assessments are free; other assessments may have cost. May be cost involved with implementation	http://www.duke-energy.com/north-carolina-business/energy-management.asp	N
ElectriCities	Provides training to members, ex: Hometown Green Workshop on 12/9/08. A workshop with topics including an introduction of Hometown Green - generating smart energy choices, REPS and Energy Efficiency Program update and other green initiatives. ElectriCities has filed a compliance plan for renewable energy and energy efficiency.	?	http://www.electricities.com/press/press_releases/2008-11-10_nc_reps.html	N
EPA Energy Star	EPA provides local and state governments, as well as federal agencies, a proven energy management strategy and no-cost tools to save energy and money and demonstrate their environmental leadership.	Free tools; may be cost involved with implementation	http://www.energystar.gov/index.cfm?c=government.bus_government	Y
NCLM Green Challenge	Recognition program for municipalities that have: 1) Formally adopted a sustainability plan, climate protection resolution or similar commitment by the governing body, 2) Created an energy improvement plan (EIP), 3) Registered with the EPA's Energy Star Challenge and use their tools or an equivalent system to conduct a baseline emissions inventory of your government facilities, 4) Conducted an energy audit of two or more of your government facilities and implemented at least one recommendation, and 5) Create a water conservation education program.	No cost to apply for recognition; there may be a cost involved with meeting the actions outlined in the program.	http://www.nclm.org/greenchallenge.htm	Y
NC Solar Center	Renewable energy focused research, training and assistance. Maintains the best list of renewable incentives in the U.S. (DSIRE). Workshops currently listed are through NCSU Industrial Extension Service or Office of Professional Development.	Workshops and some other programs do have fees for attendance.	http://www.ncsc.ncsu.edu/resources_by_sector/businesses_and_institutions.cfm http://www.dsireusa.org/	N
Performance Contracting	Several private companies provide energy services on a performance contract basis. Called ESCOs, they will identify energy savings opportunities, finance and install equipment, and be paid over time by the customer. The customer has no up-front cost and the monthly payment is generally designed as being less than the savings resulting from reduced energy consumption. ESCOs qualified by the State Energy Office include Ameresco, Chevron Energy Solutions, ConEdison Solutions, Energy Systems Group, Florida Power & Light, Honeywell, Johnson Controls, NORESCO, Pepco Energy Services, Siemens Building Technologies, TAC Americas and Trane Comfort Solutions.	No up-front capital investment for assessment or new equipment; cost is spread out over a payback period	http://www.energync.net/programs/us.html#cc http://www.energync.net/programs/docs/us/ListofQualifiedESCOs.xls	N
Progress Energy	Assessment history is unknown. Progress Energy also works with Advanced Energy. Future focus on energy efficiency is expected based on Utility Commission Filings.		http://www.progress-energy.com/custservice/carcic/index.asp	N
State Energy Office Utility Savings Initiative	Programs cover Conservation Awareness, Operations & Maintenance, Performance Contracting, Strategic Energy Plans, and Training - including the popular Energy Management Diploma, a 14-session class which is offered free of charge to public agency employees	No cost for materials or attend training; there may be cost involved with project implementation	http://www.energync.net/programs/us.html	Y
State Energy Office Energy Improvement Loan	Program provides low interest loans, secured by bank letter of credit (non-applicable for local governments and school systems), for eligible energy conservation measures for industry, commercial businesses, local government units, community colleges, K-12 school systems, and nonprofit organizations. Loans with an interest rate of 1 percent are available for some renewable energy projects and energy recycling projects. A rate of 3 percent is available for projects that demonstrate energy efficiency, energy cost-savings or reduced energy demand.	Low-interest rate loan. Application requires Technical Analysis that may require hiring energy consultant.	http://www.energync.net/funding/eilp.html	Y
Waste Reduction Partners - Land of Sky	A team of highly experienced volunteer engineers, architects, and scientists, provides WNC businesses and industries with no-cost waste and energy reduction assessments and technical assistance. With funding from the State Energy Office, Waste Reduction Partners energy assessors have provided 33 energy audits to non-profits, public schools, and local governments in 14 WNC counties. The surveys recommend over \$169,000 per year of energy cost savings, an average reduction of 13 percent of energy bills. The first round of follow-up surveys showed that nearly 40 percent of the recommendations had been implemented by these organizations. (14 WNC counties)	Free assessments; assistance offered but no funding for implementation.	http://www.landofsky.org/wrp/	N
Waste Reduction Partners Self-Assessment Guide	A self-assessment guide for identifying energy savings opportunities.	Free booklet.	http://www.landofsky.org/wrp/PDFs/Energy%20Guide%20Booklet.pdf	N
Waste Reduction Partners - Triangle J	Modeled after the Land of Sky program, the Triangle J program manager was recently hired. They are actively recruiting volunteers for the Central/Eastern region.	Free assessments; assistance offered but no funding for implementation.	http://www.tjcg.dst.nc.us/regplan/wastereduce.shtml	N

Prepared by Centralina Council of Governments-Contact Jason Wager at jwager@centralina.org



**CONNECT – Regional Environmental Cabinet
Potential “Green” project ideas from brainstorming
session - November 20, 2008**



Developing and implementing a way to marry “green” home improvements, better insulation, etc. in programs such as Community Development Block Grants with the need to upgrade substandard housing. Incentives for “green” home improvements for middle-income homebuyers are also needed.

Habitat for Humanity International - www.habitat.org/env/

- Construction and Environmental Resources department
- Better Built Program (formerly the Green Team) “...provides contacts, materials and resources for local Habitat affiliates who seek help in building more sustainable houses...We tailor assistance to the specific climate in which an affiliate builds. The program promotes building strategies that provide healthy indoor air quality, durability and energy efficiency for homeowners...we assist interested affiliates in exploring other practical and affordable green building options”
http://www.habitat.org/env/better_built.aspx
- Energy Bulletins Basic how-to information on various sustainable construction methods, materials and techniques in pdf form – for example, Sealing Air Leaks; Wall Insulation; Attic Access http://www.habitat.org/env/energy_bulletins.aspx
- Link provided to Habitat partner, Southface Energy Institute - www.southface.org/web/resources%26services/publications/factsheets/sf_factsheetmenu.htm
- Environmental Initiative “promotes cost-effective, best-practice construction methods to its U.S. affiliates, raising awareness of the environmental impacts of house building...Over time the initiative has been integrated into Habitat’s standard education and training activities...” www.habitat.org/env/environmental_initiative.aspx
- As of March 2008, Habitat for Humanity International and The Home Depot Foundation partnered to form a national green building initiative called, Partners in Sustainable Building.
-

Our Towns Habitat for Humanity - www.ourtownshabitat.org/

- Serves Mooresville, Davidson, Cornelius, and Huntersville
- Last year this group was recognized by the EPA with an Energy Star Leadership in Housing Award
- Our Town Habitat built over 50 Energy Star qualified homes since 2004. All together, these homes will save Habitat customers over \$22,000 in utility per year!

Green Communities - www.greencommunitiesonline.org

- Launched in 2004



- “Green Communities provides funds and expertise to enable developers to build and rehabilitate homes that are healthier, more energy efficient and better for the environment -- without compromising affordability.”
- Green Communities is a half billion dollar commitment by Enterprise. Enterprise is a national non-profit aimed at providing affordable housing and building thriving communities, co-founded by James Rouse
- To build more than 8,000 healthy, efficient homes for low-income people
- To make environmentally sustainable development the mainstream in the affordable housing industry.
- To assist state and local governments with ensuring that their housing and economic development policies are smart and sustainable.
- The Green Communities Criteria is the first national framework for healthy, efficient, environmentally smart affordable homes.
- Funding options from Enterprise for Green Communities
 - Grants: Planning and construction grants; Charrettes grants; Sustainability Training grants (post-construction)
www.greencommunitiesonline.org/tools/funding/grants/planning.asp
 - Loans: Predevelopment and Acquisition loan
www.greencommunitiesonline.org/tools/funding/loans/
 - Low-Income Housing Tax Credit equity (LIHTC): for “nonprofit and for-profit developers for new construction and/or rehabilitation of affordable rental housing that generally adheres to the Green Communities Criteria”
www.greencommunitiesonline.org/tools/funding/housing.asp
- Green Communities website provides resources such as:
 - A carbon calculator
 - Funding information
 - Going green information (e.g. benefits)
 - Green criteria (e.g. checklist)
 - Other resources/tools (e.g. templates, publications)
 - Public policy component
 - Training and events listing

Need for education and common agreement on: definitions and design standards; for developers to understand sustainability practices.

NAHB National Green Building Program - www.nahbgreen.org

- Purpose: To move green residential home building into the mainstream
- The process of home building is being married with energy efficiency, water and resource conservation, sustainable or recycled products, and indoor air quality
- This program provides resources and tools to assist builders, remodelers, home building associations, and homeowners learn how to build green, and the associated benefits
- Resources and tools on this website: NAHB Model Green Home Guidelines; National Green Building Standard (currently under review, awaiting approval from American
- National Standards Institute, see ICC below); the nahbgreen.org website; National
- Green Building Conference (May 2009 in Dallas, TX on the financial sustainability of green building); green home certification program; National Green Building Program



awards; Green building education programs; how to earn Certified Green Professional designation (CGP)

- Who is Green? Home building professionals (see benefits for home building pros); HBAs (home building associations); Homeowners; Policy makers
- What is Green Home Building?
 - "Building green means incorporating environmental considerations and resource efficiency into every step of the home building and land development process to minimize environmental impact. That means that during the design, construction, and operation of a home, the home's overall impact on the environment is taken into account."

Building Research Establishment Environmental Assessment Method (BREEAM, in UK) - www.breeam.org/index.jsp

- Purpose: "To help developers deliver best practice and to consider the broad environmental concerns of climate change, resource use and impact on wildlife, and balance these against the need for a high quality, safe and healthy internal environment."
- BRE tools and methods are all designed to help construction professionals understand and alleviate the environmental impacts of the developments they build, through every stage of the building process – design, construction and after construction
- BRE abides by the Brundtland definition of sustainable development (~ meeting the needs of the present without jeopardizing what people will need in the future)

Green Building Initiative - www.thegbi.org/

- Purpose: "To accelerate the adoption of building practices that result in energy efficient, healthier and environmentally sustainable buildings by promoting credible and practical green building approaches for residential and commercial construction."
- Originally, GBI's purpose was to help make bring green building more mainstream by assisting local HBAs with developing green building programs that were modeled after NAHB's Green Home Building Guidelines
- GBI partnered with NAHB, and by 2004 had developed the Green Globes environmental assessment and rating tool

Green Globes - www.thegbi.org/green-globes-tools/

- "...a revolutionary green building guidance and assessment program that integrates a comprehensive environmental assessment protocol, software tools, qualified assessors with green building expertise, and a rating/certification system...environmental impact is comprehensively assessed on a 1,000 point scale in multiple categories: Energy, Indoor Environment, Site Impact, Water, Resources, Emissions, and Project/Environmental Management."

EarthCraft House - www.earthcrafthouse.com/index.html

- Established in 1999
- Purpose: "EarthCraft House is a green building program that serves as a blueprint for healthy comfortable homes that reduce utility bills and protect the environment. The aim of the program is to help home builders be leaders in smart growth"



management and environmental stewardship.”

- EarthCraft House represents a Partnership between Greater Atlanta Home Builders Association and Southface
- EarthCraft House Affordable Housing Initiative > 1.500 projects have been EarthCraft certified
- “Common technical services for affordable housing clients include design reviews and charrettes, energy modeling, HVAC load calculations, pressure testing of building envelopes and duct systems, energy auditing and rate analysis, mold and moisture assessment, and ENERGY STAR facilitation and certification.”

ULI - www.uli.org

- Research & Publications > Reports & Case Studies > Sustainable Development >
- Green Buildings and Sustainable Development: Making the Business Case (August 2003, Policy Forum Report) – This report ends with discussion of what ULI’s role should be regarding green building and sustainable development. The conclusion was that ULI is widely respected and is in the position to be a key facilitator in promoting green building and sustainable development moving forward.
- Sustainable Development and Green Building (March 2004, National Roundtable Report) – This report represents the continuation of the green building and sustainable development discussion started in August 2003 (above). Cross organizational collaboration and dialogue was viewed as critical matters, as well as highlighting green building/sustainable development successes, information sharing, marketing green ideas, and green building in social and environmental contexts. Although, no specific follow up about ULI’s role in this arena.
- *Coming soon: Implementing Sustainable Development in Your Community: A Workshop for Local Public Officials – ULI Conference – January 21 & 22, 2009 – Charlotte, North Carolina

U.S. Green Building Council - www.usgbc.org

- Established in 1993
- Purpose: “...to make green buildings available to everyone within a generation.”
- The USGBC website offers a tremendous supply of resources and information, for example: All things LEED; case studies; existing research and publications; educational tools; The Green Home Guide, etc...
- From USGBC’s Strategic Plan for 2009 – 2013 <http://communicate.usgbc.org/2008/>
- Looking forward, key strategic issues facing the green building community in general, and USGBC in particular, include:
 - Shift in emphasis from individual buildings toward the built environment and broader aspects of sustainability, including a more focused approach to social equity;
 - Need for strategies to reduce contribution of the built environment to climate change;
 - Rapidly increasing activity of government in green building arena;
 - Lack of capacity in the building trades to meet the demand for green building;
 - Lack of data on green building performance;
 - Lack of education about how to manage, operate, and inhabit green buildings; and,
 - Increasing interest in and need for green building expertise internationally



LEED (Leadership in Energy and Environmental Design)

- Pilot program established in 1998
- “The LEED Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria.”
- LEED for Neighborhood Development (ND)
- Pilot program launched in summer 2007
- “The LEED for Neighborhood Development Rating System integrates the principles of smart growth, urbanism and green building into the first national system for neighborhood design.”

International Code Council (ICC) - www.iccsafe.org/news/green/

- This website provides a wealth of information, including a Green Clearinghouse that reviews green building programs by state (by clicking on an interactive map), North Carolina, for example:
 - **Greensboro:** “Has moved a resolution that encourages meeting green building practices that will lower carbon dioxide. All new facilities will meet the LEED STANDARDS.”
 - **Raleigh:** “The City has adopted a mandatory Silver LEEDS standard (commissioned) for all new construction > 10k square feet and a designed (certifiable) Silver standard for building < 10k square feet. There are some additional goals for improved energy efficiency and water efficiency as well. Also adopted is a LEEDS existing buildings standard as a guide for renovations on City buildings.”
 - **Mecklenburg County:** “Has issued a Green Permit Rebate Program. The program offers incentivize sustainable design by offering permit fee rebates for varying levels of sustainable design.”
- ICC now offers Green Training Courses (www.iccsafe.org/news/green/training.html)
- ICC and NAHB are involved in joint effort to develop of the National Green Building Standard
- Website offers articles/reports like, Developing Green Building Programs or Ordinances (by Peter Bruck, August 2007) or, The Current Status of Green and Sustainable Building Program, Standard and Code Development in the United States (by Allan Bilka, August 2008)
- ICC Green Building White Paper - www.iccsafe.org/news/green/pdf/ICC_Green_Building_White_Paper.pdf
- What is Green Building?
 - “Green building can be characterized as building with a conscious effort to minimize the negative impacts and encourage positive impacts of buildings on both the indoor and outdoor environments.”

Habitat for Humanity definitions

- Sustainable building defined as:
 - “...providing housing for people with methods, products and processes that lessen its detrimental impacts on the health of the human and ecological environment”
www.habitat.org/youthprograms/greenbuild/sustainable_buildings.aspx
- Green building defined as:



- "...an approach to building that seeks to reduce the impact on our environment of the things we build and the way we build them...buildings are designed to reduce waste, use more energy-efficient and earth-friendly materials and building users get the benefits of healthier and safer indoor environments"
www.habitatnyc.org/construction_green.html

EPA - www.epa.gov/greenbuilding/index.htm

Definition of Green Building

- "Green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. Green building is also known as a sustainable or high performance building."
- This website offers information on: the history of green building in the United States; reasons for building green; the different components of green building (energy efficiency, water efficiency, waste reduction, indoor air quality, etc.); info related to certain building types (schools vs. labs vs. homes); funding information; additional resources/tools
- Green building funding options are organized by:
 - National level > General Funding websites or National Green Building Funding websites
 - State level > Guides to state/local green building programs, state green building programs, and local green building programs
 - *How is green building related to smart growth and sustainable development?
 - "Smart growth is development that serves the economy, the community, and the environment by supporting healthy communities while creating economic development and jobs. Sustainability, or sustainable development, is the ability to achieve continuing economic prosperity while protecting the natural systems of the planet and providing a high quality of life for its people."
 - "Green building fits nicely with these concepts, as it promotes building practices that conserve energy and water resources, preserve open spaces through brownfield development, and are accessible to public transportation. EPA has more information on smart growth and sustainability."
www.epa.gov/greenbuilding/pubs/faqs.htm#4

ENERGY STAR - www.energystar.gov/

- Established in 1992
 - "ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices."

Database of State Incentives for Renewables and Efficiency - <http://www.dsireusa.org/>

- "The DSIRE website provides a fast and convenient method for accessing information about renewable energy and energy efficiency incentives and regulatory policies administered by federal and state agencies, utilities, and local organizations."



ICLEI – Local Governments for Sustainability (USA) - <http://www.icleiusa.org/>

- “Local governments have a tremendous opportunity to shape sustainable communities, and ICLEI USA will guide, empower, and enhance their efforts through two new programs under development: the STAR Community Index and a Sustainability Planning Toolkit.”
- STAR Community Index:
- “The STAR Community Index is a national, consensus-based framework for gauging the sustainability and livability of U.S. communities. STAR will be launched by 2010, and is currently being developed through a partnership between ICLEI-Local Governments for Sustainability (ICLEI), the U.S. Green Building Council (USGBC), and the Center for American Progress (CAP).”
- “Much as LEED™ transformed the building industry, STAR will transform the way local governments set priorities and implement policies and practices to improve their sustainability performance. It will become the definitive means by which local governments measure and “certify” their achievements.”
- How Will the Sustainability Planning Toolkit Help Local Governments?
 - Ingredients for a high-quality, long-term sustainability plan
 - Environmental, economic, and social sustainability principles and strategies
 - Step-by-step guide for developing a long-term sustainability plan in communities of varying sizes and needs
 - Case studies from City of New York and other leading cities around the country
 - Templates and checklists for developing a sustainability plan
 - Model ordinances and policies
 - Guidance for public participation and outreach
 - Climate change mitigation and sustainability strategies
 - Incorporating a sustainability plan with a comprehensive plan

Conducting subdivision/zoning review / design standards for green development – especially for smaller towns, and publicizing the many model codes available. This will involve establishing common understandings of what are “green” standards, among both the public and private sectors.

American Planning Association (www.planning.org) - Planning Advisory Service (PAS) Essential Information Packet (EIP) - 13 Planning and Zoning for Green Building

Green Building Articles and Reports

- Retzlaff, Rebecca. 2005. “Green Buildings: Onus or Bonus.” Zoning Practice, April.
- Stromberg, Meghan. 2005. “Green Grow the Buildings.” Planning, July.
- COG Intergovernmental Green Building Group. 2007. Greening the Metropolitan Washington Region’s Built Environment. December 12.
- Kats, Greg, and Capital E. 2003. The Costs and Financial Benefits of Green Buildings .California Sustainable Building Task Force. October.

Green Building Programs and Guidelines

- Alameda (California), County of. 2004. Multifamily Green Building Guidelines. April.



- Arlington (Virginia), County of, Department of Environmental Services. 2005. Building Green, Building Smart. March.
- Boulder (Colorado), City of. 2006. City of Boulder Residential Building Guide: Green Points Program Guidelines and Application.
- Boulder (Colorado), City of. 2003. City of Boulder Residential Building Guide: Green Points Application: Resource Conservation Ordinance.
- Chicago (Illinois), City of. 2006. The Chicago Standard: Building Healthy, Smart, and Green.
- Hugh L. Carey Battery Park City Authority. 2002. Commercial / Industrial Environmental Guidelines. March.
- Hugh L. Carey Battery Park City Authority. 2000. Residential Environmental Guidelines. October.
- Portland (Oregon), City of. 2002. G-Rated: City of Portland Supplement Leadership in Energy and Environmental Design (LEED) Green Building Rating System.

Green Building Incentives

- Chicago (Illinois), City of, Department of Construction & Permits. n. d. Green Permit Program.
- Hailey (Idaho), City of. 2006. Hailey Zoning Ordinance. Article X: Planned Unit Developments. 10.4.1 Density Bonus.
- Portland (Oregon), City of. 2007. Office of Sustainable Development. Programs. Green Building. Commercial. Financial Incentives–Commercial.
- Portland (Oregon), City of. 2007. Office of Sustainable Development. Programs. Green Building. Residential. Financial Incentives–Residential.
- Seattle (Washington), City of. Department of Planning and Development. 2007. City Green Building: Financial Incentives & Assistance.
- State College (Pennsylvania), Borough of. 2005. Borough Codes. Chapter XIX. Part D. Commercial Incentive District. Section 1855. Incentives.

Green Building Requirements for Municipal Buildings

- Atlanta (Georgia), City of. 2003. Code of Ordinances. Chapter 75: Sustainable Development Design Standards.
- Long Beach (California), City of. 2007. City of Long Beach Green Building Policy for Municipal Buildings.

Green Building Zoning Ordinances

- Austin (Texas), City of. 2003. Ordinance No. 030612-93. Part 3. Subpart B – Downtown Design. Site Plan and Construction Requirements.
- Calabasas (California), City of. 2003. Calabasas Municipal Code. Title 17. Chapter 17.34. Green Development Standards.
- Normal (Illinois), City of. 2002. Normal Municipal Code. Section 15.17-1. Environmentally Sensitive Design.
- Pleasanton (California), City of. 2002. Pleasanton Municipal Code. Chapter 17.50. Commercial and Civic Green Building Ordinance.



Green Building in Building Codes

- Boulder (Colorado), City of. 2007. Ordinance No. 7565. Green Building and Points Program.
- Cranford (New Jersey), Township of. 2005. Ordinance No. 2005-46. Chapter 106 – Energy Efficiency. Article I. Sustainable Building Standards.
- Marin (California), County of. 2005. Marin County Municipal Code. Title 19. Chapter 19.04.100.
- Pasadena (California), City of. 2006. Pasadena Municipal Code. Chapter 14.90. Green Building Practices Ordinance.
- Santa Monica (California), City of. 2001. Santa Monica Municipal Code. Green Building Standards.

Sustainable Community Development Code www.clarionassociates.com

- Must update and diversify codes/paradigms to meeting changing needs and lifestyles of American households; to improve quality of life.
- “Some developers are interested in meeting the new demand of these households, but are unable due to outdated zoning and design standards.”
- “Development regulations need to keep pace with the changing needs of communities to foster the development of a broad array of housing options.”
- SCDC created at the Rocky Mountain Land Use Institute
www.law.du.edu/index.php/rmlui/sustainable-community-development-code

“Saving the World Through Zoning” by Chris Duerksen, January 2008 in Planning

- “Then I say the earth belongs to each generation during its own course, fully and in its own right, but no generation can contract debts greater than can be paid during the course of its own existence” (Thomas Jefferson)
- Changing/updating local zoning regulations can be the key to creating a sustainable, healthy, green community.
- “The answer is to build on the best attributes of these other code approaches [Euclidean and form-based], but address a far wider range of issues like energy, climate change, food security, and health.”
- A sustainable code must be tailored/contextually specific for a community
- 3 paths to sustainability that will be followed in the SCDC:
 - Removing obstacles/barriers (that are sometimes unintentional)
 - Creating incentives (to encourage the use/creation of new technology)
 - Enacting standards (“no zoning code can succeed without mandatory regulations that require certain actions or prevent harm”)

Replicating Chamber of Commerce-level boot camps (see Columbia, SC as a model) for public and private sectors in “Going Green,” with a certification program with community-wide recognition at the end of the process.

Green Business Boot Camp – Columbia, South Carolina (November 2007)

- <http://www.energy.sc.gov/calendar.aspx?id=218>
- 2-hour course with the purpose of developing a green business plan for an organization



- The green business plan is to fit into the City of Columbia's Green Business Member Program
- Participants will be awarded with a City of Columbia Green Business Member window decal and recognition from the City
- <http://www.coccpac.com/?pageid=12>

Green Business Boot Camp – Seattle, Washington (November 2008)

- <http://cleanerproduction.com/training/greenbizcamp/greenbizcamp.htm>
- 2-day course with the purpose of learning about the tools and strategies needed to manage a business for gaining profit and sustainability
- Includes site visits, networking time with green industry leaders, comprehensive instruction and inside industry intelligence
- "All business – no philosophy"

Green Business Boot Camp – San Francisco, CA (October 2006)

- <http://upcoming.yahoo.com/event/114368/>
- "...3-day course immersion into the nuts and bolts of managing sustainable performance. Totally practical, ALL business, no philosophy -- a mini-MBA with tools you can use today. Strong emphasis on Total Quality Management and practical cost accounting and financial analysis. For anyone wanting a fast and thorough introduction to the technical tools for managing a sustainable operation."

Green Business Certification Program – Santa Monica, CA

- <http://www.smgbc.org/>
- "Many businesses have taken steps to incorporate sustainable practices into their operations and have improved their performance, but until now, customers had no way of recognizing which businesses were going "green." The City of Santa Monica, the Convention and Visitors Bureau, the Chamber of Commerce and Sustainable Works have joined together to certify and recognize green businesses in our community."

Bay Area Green Business Program

- <http://www.greenbiz.ca.gov/index.html>
- Green Businesses Get Recognition Through:
 - The Green Business Program website: www.greenbiz.abag.ca.gov
 - City and agency newsletters
 - Press coverage, promotional events and special recognition
 - Window decals, certificates and promotional materials for your business
 - Green Business logo to use in your advertising

Institute for Green Business Certification – Michigan City, Indiana

- <http://www.gbcertified.com/2008-home.asp>
- "The Institute for Green Business Certification provides environmental management and sustainability consulting to businesses, organizations of all sizes, professional and college sports stadiums as well as youth sports complexes and public venues in North America and around the globe!"



- “We are one of the only green-programs in the country that actually provides an authentic "certification" for your business, organization or stadium. This program is **NOT** a pass or fail. We work with you every step of the way to ensure you meet all standards! Once certified, you will receive your Green-Certification Certificate, a window sticker, a banner to hang in your facility or office, our marketing logo and our electronic logo for your website, where you can announce to the world that you are a green certified business!”

Sonoma Valley Green Business Recognition Program

- <http://www.sonomachamber.com/home/chamber/greenbusinessinfo/Green%20Biz%20Recog%20Program.pdf>
- Participating green businesses are recognized in print publications, on websites, at city council meetings, and by window decal

Green Business Recognition Program – Knoxville, Tennessee

- http://www.knoxvillechamber.com/eng/main/membership/green_business_recognition_program
- An article about the program in the Chamber's monthly newsletter, Commerce, which is published in the Greater Knoxville Business Journal and distributed to more than 13,500 readers; on the Knoxville Chamber's website; at future green-focused Chamber events; and with a Knoxville Chamber Green Business window cling for your business.

For additional information: clewis@centralina.org or 704-348-2730





Community & Economic Development
Centralina Economic Development Commission
1300 Baxter Street, Suite 450
Charlotte, NC 28204
704-372-2416
www.4noboundaries.org
www.4communitydevelopment.org

