Renewable Energy in America:

Markets, Economic Development and Policy in the 50 States

Spring 2011 Update

ACORE
American Council On Renewable Energy

This Page Intentionally Blank

Contents

About ACORE

ACORE, a 501(c)(3) membership non-profit organization headquartered in Washington, DC, is dedicated to bringing renewable energy into the mainstream of the U.S. economy and lifestyle through research and communications programs and membership committees. ACORE'S membership works in all sectors of the renewable energy industries including wind power, solar energy, geothermal energy, hydropower, ocean energy, biomass, biofuels, and waste energy. ACORE provides a common platform for the wide range of interests in the renewable energy community including end users, technology companies, manufacturers, utilities, professional service firms, financial institutions, colleges and universities, associations, non-profit organizations and government agencies. ACORE serves as a thought leadership forum through which these parties work together on common interests. ACORE co-organizes the REFF-Wall Street and REFF-West Finance Conferences, the RETECH All-Renewables Energy Conference and Exhibition, the Phase II National Policy Forum in Washington, DC, and hosts both domestic and global policy events furthering the mission of renewable energy. Additional information is available at www.acore.org.

Acknowledgements

Lead Author

Lesley Hunter

Collaborating Author

Evan Schmitt

Advisors

Michael Eckhart
Heidi VanGenderen
Todd Foley
Jan Siler
Turner Houston
Jeramy Shays

Special Thanks

3TIER
Bloomberg New Energy Finance
Database of State Incentives for Renewables & Efficiency
Evergreen Power Corp.
National Renewable Energy Laboratory
Navigant Consulting, Inc.

Published by:

American Council On Renewable Energy (ACORE)
1600 K St. NW, Suite 700
Washington, DC 20006
202.393.0001

Questions or Comments: hunter@acore.org

User's Guide

Overview

This report is intended to provide an executive summary on the status of renewable energy implementation at the state-level. To accomplish this objective, the report provides a two-page, high-level overview on the key developments that have shaped the renewable energy landscape in each state, including information on installed and planned capacity, markets, economic development, resource potential and policy.

The report does not attempt to evaluate or rank success in state utilitization of renewable energy. There is no one silver bullet for success in the industry; rather, it is a combination of policies and investment in addition to resources that lead to well-established markets. All factors are not explored in this report, but there is emphasis on strong market drivers such as policies, investment trends, proximity to supply chains, resource potentials, and related factors that cause investors and companies to develop renewable energy projects, manufacturing plants, and research centers within a state's borders.

Although states have taken great strides in the advancement of many clean technologies, the markets profiled in this report are renewable energy technologies exclusively. The report assumes some familiarity with the industry, and technical terms are defined in glossary.

Each state summary is divided into the following sections:

- Summary
- Capacity Chart
- Market
- Economic Development
- Resource Maps
- Policies
- ACORE members

Capacity Chart

The capacity chart reflects the nameplate capacity of renewable energy projects that were in operation before the end of the past year, or the date shown in the chart. The capacity is represented in megawatts (MW) for electricity and million gallons per year (mGy) for fuels. The information in this section is provided by public sources and the Bloomberg New Energy Finance (BNEF) database; ACORE does not independently verify the data or guarantee its accuracy. The sources used are well-cited within the industry and include: the American Wind Energy Association (AWEA), the Interstate Renewable Energy Council (IREC), the Solar Energy Industries Association (SEIA), the Renewable Fuels Association (RFA), the National Renewable Energy Laboratory (NREL), the Geothermal Energy Association (GEA) and BNEF. The sources for each section include:

- Wind data reflects utility-scale wind power installations. It is derived from the AWEA project database, which is taken primarily from AWEA member companies.
- Solar photovoltaic (PV) and concentrated solar thermal (CSP) data as of 2009 is derived from IREC's *U.S. Solar Market Trends 2009* report. The report's data was obtained from state agencies or organizations administering state incentive programs; utility companies which manage incentive programs or interconnection agreements; and nonprofit organizations (through surveys). Data for 2010 additions is derived from: SEIA's "Utility-Scale Projects in the United States: Operational, Under

Construction, and Under Development" for utility-scale installations; the BNEF project database for commercial-scale installations; and NREL's "Open PV Project" for residential installations.

- Geothermal power data is derived from GEA's *US Geothermal Power Production and Development Update, 2010*. Information is provided by developers or public sources, and is not independently verified by GEA.
- Small hydropower data is derived from the BNEF project database, and includes small-scale and low-head hydro power, often under 30 MW.
- Ocean power data is derived from the BNEF project database, and includes the tidal, wave and ocean thermal energy conversion (OTEC) technologies.
- Biomass power data is derived from the BNEF project database and includes anaerobic digestion, co-firing, gasification, incineration and landfill gas power.
- Bioethanol data as of 2009 is derived from RFA's *Ethanol Industry Outlook 2010* and represents nameplate capacity in million gallons per year (mGy). Data for 2010 additions is derived from the BNEF project database.
- Biodiesel installed capacity data is derived from the BNEF project database and represents nameplate capacity in million gallons per year (mGy).

Market

This section of the report includes highlighted characteristics and developments of the state's renewable energy industry, including information on existing and proposed projects, manufacturing, research and development, supply chains and installed capacity rankings. The information was collected primarily from State Energy Department and Public Utility Commission websites, other state-funded resources, and news articles.

Economic Development

This section of the report provides information from various reports, databases, and state energy websites about the economic effect renewable energy has had in each state. Unless otherwise stated, values in this section reflect the renewable energy sectors exclusively: solar power, wind power, biomass power and thermal, geothermal power, waste energy, ocean power, small hydropower, bioethanol and biodiesel.

Bloomberg New Energy Finance (BNEF), a world leader in industry information and analysis, provided the venture capital, private equity and asset finance values in this report. Venture capital and private equity values reflect investment in technology and early stage companies. These values are grossed up, and include BNEF estimates for deals with undisclosed values. Asset finance values reflect investment in renewable energy generation projects, including debt and equity finance and funding from internal company balance sheets. The asset finance transaction values are for disclosed deals only, and the number of disclosed transactions out of total transactions is indicated.

Jobs data provided for the report, by Navigant Consulting Inc., includes data from the solar PV, CSP, wind, biomass, landfill gas, waste energy and hydropower sectors. It excludes jobs created by geothermal energy. The jobs reported are all jobs that existed in 2009. Direct and indirect jobs are factored into the total employment estimate. Direct jobs are represented by the number of people whose work is directly billed to the project. Indirect jobs are represented by the people working for producers of materials, equipment and services that are used on the project. The number of organizations in each state is derived from the BNEF organization database, and includes companies with a less than 10% to 100% exposure to renewable energy.

The Federal funding information is taken from the U.S. Department of Energy (DOE) and U.S. Department of the Treasury websites. The information is divided into two sums: (1) American Recovery and Reinvestment Act of 2009 (Recovery Act) funding distributed through the DOE for renewable energy projects and programs and (2) competitive tax credits and grants distributed through the Grant in Lieu of Tax Credit (1603) and Clean Energy Manufacturing Tax Credit (48C) programs. The 1603 program provides grants to cover 30% of a renewable energy project's qualifying costs (or 10% for microturbines and geothermal electric systems and heat pumps), and has been a key incentive for solar and wind financing since 2009. The 48C program provides a 30% tax credit for investments in clean energy manufacturing facilities. The sums include funding for the biomass/ biofuels, geothermal, hydropower, solar, wave/tidal/ocean thermal energy conversion (OTEC), fuel cell and wind programs.

Resource Maps

Each state section contains two renewable energy technology resource maps and a brief description of each. The maps are intended to show the relationship between current renewable energy development and the state's potential. As a general rule, the technologies included in this section are either those with the most potential in the state or those which have been the most developed. It should be noted that these technologies are not the only resources that can be feasibly developed within the state and are not necessarily the best options.

The maps courtesy of 3TIER and the National Renewable Energy Laboratory (NREL).

Policies

The policies profiled in this report reflect major state-level rules, regulations, financial incentives and other policies for renewable energy that were enacted and operating as of the date shown on each profile. A main source for this information is the Database of State Incentives for Renewables & Efficiency (DSIRE), a comprehensive source of information on state, local, utility and federal incentives and policies that promote renewable energy and energy efficiency. The website is funded by the U.S. Department of Energy and is an ongoing project of the North Carolina Solar Center and IREC.

Due to the space available, not all renewable energy policies in each state are included. Preference is given to state-level policies with the most significant impact. The policies highlighted include: renewable portfolio standards (RPS), net metering programs, interconnection standards, rebates, tax incentives, production incentives, public benefit funds, grants, loans, and other major state-level programs. These terms are defined in the glossary.

The policies highlighted are for informational purposes only and should not be used as legal guidance in any way. The reader should refer to the state's website or the DSIRE database for more information.

ACORE Members

The ACORE members section reflects membership as of the date shown at the bottom of the page. Member location is identified by the organization's mailing address on record, and does not necessarily reflect its headquarters.

*****

Renewable Energy in America was crafted to illustrate a snapshot of each state, highlighting the state's progress in utilizing its available resources to increase renewable energy's share in its existing energy mix. This report does not attempt to be fully comprehensive, forecast success or failure, or compare one state against another. Instead, it is intended to educate the reader about what each state is actively doing to tap into its renewable energy resources.

Renewable Energy in America is a "living" document that will continue to evolve with updates and periodic revision. The renewable energy landscape is changing continually at the state-level, and ACORE will strive to maintain the accuracy of the report by updating each state profile once a quarter.

Please note that this report is a conglomeration of research and data from well-cited, reliable sources, and was not independently verified by ACORE. It should not be used to make decisions on project development or for legal advice.

Glossary

Ad Valorem Taxation: A tax based on the assessed value of real estate or personal property. Property ad valorem taxes are the major source of revenues for state and municipal governments.

Alternative Compliance Payment (ACP): In lieu of standard means of compliance with renewable portfolio standards, electricity suppliers may make alternative compliance payments to make up for deficiencies (in megawatt-hours) between the amount of electricity from renewable resources mandated and the amount actually supplied. Payment amount varies among states.

American Recovery and Reinvestment Act (Recovery Act): The Recovery Act was signed into law by President Obama on February 17, 2009. A direct response to the economic crisis, the Recovery Act has three immediate goals: create new jobs and save existing ones; spur economic activity and invest in long-term growth; and foster unprecedented levels of accountability and transparency in government spending. The Recovery Act has since allocated $1.64 billion (as of August 2010) to develop clean renewable resources in order to double America's supply of renewable energy and boost domestic renewable manufacturing capacity.

Anaerobic Digestion: The complex process by which organic matter is decomposed by anaerobic bacteria. An anaerobic digester optimizes the anaerobic digestion of biomass and/or animal manure, and possibly to recover biogas for energy production.

Avoided Cost: An investment guideline describing the value of a conservation or generation resource investment by the cost of more expensive resources that a utility would otherwise have to acquire.

Bagasse: The fibrous material remaining after the extraction of juice from sugarcane; often burned by sugar mills as a source of energy.

Bi-Directional Meter: A single meter used in net metering that allows for the monitoring of the consumption of energy a residential system generates and the amount of excess energy exported back into the grid.

Biodiesel: A biodegradable transportation fuel for use in diesel engines. Biodiesel is produced through the transesterification of organically-derived vegetable or animal oils or fats. It may be used either as a replacement for or as a component of diesel fuel.

Bioenergy: Useful, renewable energy produced from organic matter, which may either be used directly as a fuel or processed into liquids and gases.

Bioethanol: Ethanol produced from biomass feedstocks. This includes ethanol produced from the fermentation of crops, such as corn, as well as cellulosic ethanol produced from woody plants or grasses.

Biofuels: Liquid fuels and blending components produced from biomass (plant) feedstocks, used primarily for transportation. Biofuels include ethanol, biodiesel, and methanol.

Biogas: A combustible gas derived from decomposing biological waste under anaerobic conditions. Biogas normally consists of 50 to 60 percent methane. See also landfill gas.

British Thermal Unit (Btu): A measure of the heat content of fuels. It is the quantity of heat required to raise the temperature of 1 pound of liquid water by 1°F at the temperature that water has its greatest density (approximately 39°F). 1 kilowatt hour of electricity equals 3,412 Btu.

Camelina Feedstock: A rapid growth, omega-3 rich oilseed and non-food feedstock.

Capacity: The load that a power generation unit or other electrical apparatus or heating unit is rated by the manufacture to be able to meet or supply. Installed generator nameplate capacity is commonly expressed in megawatts (MW) and is usually indicated on a nameplate physically attached to the generator.

Cellulosic Ethanol: While conventional ethanol is derived from soft starches (corn for example), cellulosic

ethanol is derived from a wide variety of sources of cellulose (cell wall) plant fiber. These range from stalks and grain straw to switchgrass and quick-growing trees (poplar and willow)—and even municipal waste.

Combined Cycle: An electric generating technology in which electricity is produced from otherwise lost waste heat exiting from one or more gas (combustion) turbines. The exiting heat is routed to a conventional boiler or to a heat recovery steam generator for utilization by a steam turbine in the production of electricity. Such designs increase the efficiency of the electric generating unit.

Combined Heat & Power (CHP): Also known as co-generation, CHP is the simultaneous production of electricity and heat from a single fuel source such as natural gas, biomass, biogas, coal, waste heat or oil.

Concentrated Solar Thermal (CSP): A solar energy conversion system characterized by the optical concentration of solar rays through an arrangement of mirrors to generate a high temperature working fluid which generates steam to drive a turbine to produce electricity .

Conservation Reserve Program (CRP): The Conservation Reserve Program (CRP) provides technical and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. The program provides assistance to farmers and ranchers in complying with Federal, State, and tribal environmental laws, and encourages environmental enhancement. The program is funded through the Commodity Credit Corporation (CCC). CRP is administered by the Farm Service Agency, with NRCS providing technical land eligibility determinations, conservation planning and practice implementation.

Consumer-Owned Utility: A municipal electric utility, a people's utility district or an electric cooperative.

Cord: The measure of an amount of wood that is 4 x 4 x 8 feet, or 128 cubic feet.

Crop Residue: Agricultural crop residues are the plant parts, primarily stalks and leaves, not removed from the fields with the primary food or fiber product. Examples include corn stover (stalks, leaves, husks, and cobs); wheat straw; and rice straw.

Distributed Generation (DG): Small, modular, decentralized, grid–connected or off–grid energy systems located in or near the place where energy is used.

Electric Cooperative: A member-owned electric utility company serving retail electricity customers. Electric cooperatives may be engaged in the generation, wholesale purchasing, transmission, and/or distribution of electric power to serve the demands of their members on a not-for-profit basis.

Feasibility Project: Analysis and evaluation of a proposed project to determine if it (1) is technically feasible, (2) is feasible within the estimated cost, and (3) will be profitable. Feasibility studies are almost always conducted where large sums are at stake.

Federal Energy Regulatory Commission (FERC): An independent federal agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines as well as licensing hydropower projects. The Energy Policy Act of 2005 gave FERC additional responsibilities as outlined in FERC's Top Initiatives and updated Strategic Plan.

Feed-in Tariff: A policy that requires utilities to pay a fixed, premium rate for renewable energy generation guaranteed for a set time period.

Feedstock: Any material used as a fuel directly or converted to another form of fuel or energy product.

Flat Plate Collector: A solar thermal collection device in which heat collection takes place through a thin absorber sheet backed by an array of tubing that is placed within an insulated casing.

Forest Residue: Logging residues and other removable material left after carrying out silviculture operations and site conversions. Forest slash or logging residues are the portions of the trees that remain on the forest

floor or on the landing after logging operations have taken place.

Fuel Cells: One or more cells capable of generating an electrical current by converting the chemical energy of a fuel directly into electrical energy. Fuel cells differ from conventional electrical cells in that the active materials such as fuel and oxygen are not contained within the cell but are supplied from outside.

Gasification and Catalytic Processes: A method for converting coal, petroleum, biomass, wastes, or other carbon-containing materials into a gas that can be burned to generate power or processed into chemicals and fuels. A refining process using controlled heat and pressure with catalysts to rearrange certain hydrocarbon molecules, there by converting paraffinic and naphthenic type hydrocarbons (e.g., low octane gasoline boiling range fractions) into petrochemical feedstocks and higher octane stocks suitable for blending into finished gasoline.

Geothermal Heat Pumps (GHP): A heat pump in which the refrigerant exchanges heat (in a heat exchanger) with a fluid circulating through an earth connection medium (ground or ground water). The fluid is contained in a variety of loop (pipe) configurations depending on the temperature of the ground and the ground area available. Loops may be installed horizontally or vertically in the ground or submersed in a body of water.

GW(h): One billion watt-hours (gigawatt-hour).

Independent Power Producer (IPP): A corporation, person, agency, authority, or other legal entity or instrumentality that owns or operates facilities for the generation of electricity for use primarily by the public, and that is not an electric utility.

Interconnected: Two or more electric systems having a common transmission line that permits a flow of energy between them. The physical connection of the electric power transmission facilities allows for the sale or exchange of energy.

Interconnection Standards: The technical and procedural process by which a customer connects an electricity -generating system to the grid. Interconnection standards include the technical and contractual arrangements that system owners and utilities must abide by. Standards for systems connected at the distribution level are typically adopted by state public utility commissions, while the Federal Energy Regulatory Commission (FERC) has adopted standards for systems connected at the transmission level. Most states have adopted interconnection standards, but some states' standards apply only to investor-owned utilities - not to municipal utilities or electric cooperatives.

Investment Tax Credit (ITC): The ITC is a federal tax credit based on a percentage of a taxpayer's investment in qualifying energy property. For example, if the taxpayer's investment in qualifying energy property is $100 and the credit rate is 30%, the amount of the ITC is $30. In general, the investment in energy property is the cost of the facility.

Investor-Owned Utility (IOU): A privately-owned electric utility whose stock is publicly traded. An IOU is rate regulated and authorized to achieve an allowed rate of return.

Kinetic Energy Capture: Energy available as a result of motion that varies directly in proportion to an object's mass and the square of its velocity.

kW(h): One thousand watthours (kilowatt-hour).

Landfill Gas: Gas that is generated by decomposition of organic material at landfill disposal sites.

mGy: Million gallons per year.

Municipal Solid Waste – Any organic matter, including sewage, industrial and commercial wastes, from municipal waste collection systems. Municipal waste does not include agricultural and wood wastes or residues.

Municipal Utility: A provider of utility services owned and operated by a city government.

MW(h): One million watthours (megawatt-hour).

Nacelle: The back-end of a wind turbine that houses the gearbox, drive train and control electronics.

Net Excess Generation (NEG): The amount of gross generation less the electrical energy consumed at the generating station(s) for station service or auxiliaries.

Net Metering: For electric customers who generate their own electricity, net metering allows for the flow of electricity both to and from the customer – typically through a single, bi-directional meter. When a customer's generation exceeds the customer's use, electricity from the customer flows back to the grid, offsetting electricity consumed by the customer at a different time during the same billing cycle.

Original Equipment Manufacturer (OEM): An OEM manufactures products or components that are purchased by a company and retailed under the purchasing company's brand name.

Perennial Grasses: Unlike corn, which must be replanted every year, perennial grasses, such as switchgrass and Miscanthus, preserve and increase carbon stores in the soil. These and other grasses have been proposed as high-energy alternative feedstocks for biofuel production.

Photovoltaic (PV) Module: An integrated assembly of interconnected photovoltaic cells designed to deliver a selected level of working voltage and current at its output terminals, packaged for protection against environment degradation, and suited for incorporation in photovoltaic power systems. It is also known as a solar module or solar panel.

Polyitaconic acid: A water soluble polymer with a 2 million metric ton per year market potential as a replacement for petrochemical dispersants, detergents, and super-absorbents.

Power Purchase Agreement (PPA): A legal contract in which a power purchaser purchases the energy produced, and sometimes the capacity and/or additional services, from an electricity generator.

Primary Mill Resource: Mill residues that include wood materials (coarse and fine) and bark generated at manufacturing plants (primary wood-using mills) when round wood products are processed into primary wood products, such as slabs, edgings, trimmings, sawdust, veneer clippings and cores, and pulp screenings.

Production Incentives/Performance-Based Incentives: Performance-based incentives (PBIs), also known as production incentives, provide cash payments based on the number of kilowatt-hours (kWh) or BTUs generated by a renewable energy system. A "feed-in tariff" is an example of a PBI.

Production Tax Credit (PTC): A federal tax credit based on the per kWh of electricity sold by a taxpayer from a qualifying facility to an unrelated entity. For facilities selling electricity generated from wind, closed-loop biomass and geothermal sources, the PTC rate is 1.5 cents per kWh, which is adjusted for inflation and is 2.1 cents per kWh in 2009. For persons selling electricity generated from open-loop biomass, landfill gas, trash, qualified hydropower or marine and hydrokinetic sources, the credit rate is half the credit rate for wind (1.1 cents per kWh in 2009). The PTC can be made for sales in the first 10 years from the time the facility is originally placed in service.

Property-Assessed Renewable Energy (PACE) Financing: A Property Assessed Clean Energy loan program provides residential and commercial property owners with a loan for energy efficiency and renewable energy measures which is subsequently paid back over a certain number of years via an annual charge on their property tax bill.

Public Benefit Funds (PBF): Public benefits funds (PBFs), or clean energy funds, are typically created by levying a small fee or surcharge on electricity rates paid by customers (i.e., system benefits charge [SBC]). The resulting funds can be used to support clean energy supply (i.e., renewable energy, energy efficiency, and combined heat and power [CHP]).

Renewable Energy Credit (REC): A REC, also known as a green tag or renewable energy certificate, represents the property rights to the environmental, social, and other non-power qualities of renewable electricity generation. A REC, and its associated attributes and benefits, can be sold separately (unbundled) from the underlying physical electricity associated with a renewable-based generation source or together (bundled). When unbundled, it is also known as a tradable renewable energy certificate (TREC). A solar renewable energy credit (SREC) is a REC specifically generated by solar energy.

Renewable Energy Resources: Energy resources that are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Renewable energy resources include: biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action.

Renewable Energy Zones (REZ): Renewable energy zones are special areas designated for renewable energy generation based on land suitability, resource potential, and existing renewable energy generation. Electric transmission infrastructure is constructed in those zones to move renewable energy to markets where people use energy.

Renewable Portfolio Standard (RPS): A regulatory mechanism requiring that retail electricity suppliers procure a minimum quantity of eligible renewable energy by a specific date, in percentage, megawatt hour, or megawatt terms.

Revolving Loan Fund: A capitalized fund, typically maintained by a state government, that provides low–interest loans for energy efficiency improvements, renewable energy, and distributed generation. As the loans are repaid, they are deposited back into the fund for redistribution as subsequent loans.

Salvage Value: The estimated value that an asset will realize upon its sale at the end of its useful life.

Secondary Mill Resource: Materials leftover after the processing of wood scraps and sawdust from woodworking shops, furniture factories, wood container and pellet mills, and wholesale lumberyards.

Solar and Wind Access Laws: Solar and wind access laws are designed to establish a right to install and operate a solar or wind energy system at a home or other facility. Some solar access laws also ensure a system owner's access to sunlight.

Solar Thermal: A solar energy system that collects or absorbs solar energy for heat or electricity. Solar thermal systems can be used to generate high temperature heat (for electricity production and/or process heat), medium temperature heat (for process and space/water heating and electricity generation), and low temperature heat (for water and space heating and cooling).

Switchgrass: A native warm-season, perennial grass indigenous to the Central and North American tall-grass prairie into Canada. The plant is an immense biomass producer that can reach heights of 10 feet or more. Its high cellulosic content makes switchgrass a candidate for ethanol production as well as a combustion fuel source for power production.

Systems Benefit Charge: See **Public Benefit Fund**.

Metric Ton: A metric unit of measurement equal to 1000 kilograms, used to measure biomass.

Ton: An imperial unit of measurement equal to 2240 pounds.

Wood Pellet: Saw dust compressed into uniform diameter pellets to be burned in a heating stove.

Renewable Energy in Alabama

Summary

Although Alabama has resources suitable for solar installations and biomass facilities, the state has yet to commission a stand-alone renewable power plant. However, with its supportive tax incentives, grants and loans available to consumers, Alabama has become a player in the bioenergy industry — as a developer of biofuels from next-generation feedstocks and as a center for biomass energy research.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	0.2 MW	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	60.1 mGy
Small Hydro	-	**Totals**	0.2 MW; 60.1 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

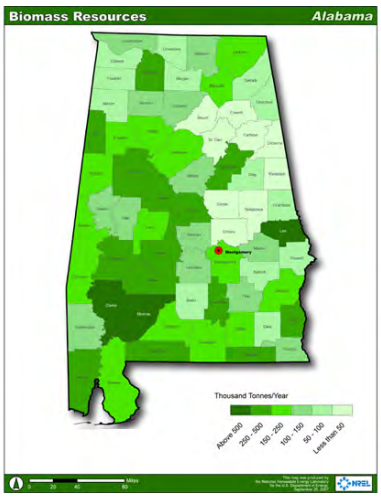
- Alabama is home to four biodiesel plants, which produce an aggregate of 60 million gallons per year (mGy). This includes a 30 mGy algae-to-biofuels commercial plant and a pilot-scale cellulosic ethanol gasification plant.
- With funding from the federal government, Southern Company and Alabama Power are exploring the feasibility of using woody biomass as an energy source by blending it with coal.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,852
Organizations	20
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$6.0m
Competitive Grants & Tax Credits (48C & 1603)	$0.0m, 0 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Solar Resources- Alabama receives between 185 and 200 W/m^2 of solar radiation, a moderate solar resource potential.



Biomass Resources- The state has the potential to produce over 500 thousand metric tons of biomass a year in certain areas of the state (indicated in dark green) and between 150 and 500 metric tons in several other areas.

Alabama

Policies

Tax Incentive: Alabama's Wood-Burning Heating System Deduction statute provides individuals a deduction for the purchase and installation of wood-burning heating systems. The incentive is for the conversion of an existing gas or electric system and is equal to the total cost of purchase and installation of a wood burning system..

Grant Program: The Biomass Energy Program sponsored by the Alabama Department of Economic and Community Affairs (ADECA) aids businesses in the installation of biomass energy systems. Industrial, commercial and institutional facilities; agricultural property owners; and city, county, and state government entities are eligible to receive up to $75,000 in interest subsidy payments to help offset the interest expense on loans. The program initially focused on wood waste, but now also promotes the use of landfill gas.

Loan Program: Alabama's Local Government Energy Loan Program, in conjunction with the PowerSouth Energy Cooperative, offers zero-interest loans to local governments, K-12 schools, and public colleges/universities for renewable energy systems. Governments and colleges/universities can borrow up to $350,000, and K-12 schools can borrow $350,000 per campus or $500,000 per school system. Eligible projects include biomass, hydropower, geothermal, wind, and solar.

ACORE Members in Alabama

Auburn University

Westervelt Renewable Energy, LLC

Renewable Energy in Alaska

Summary

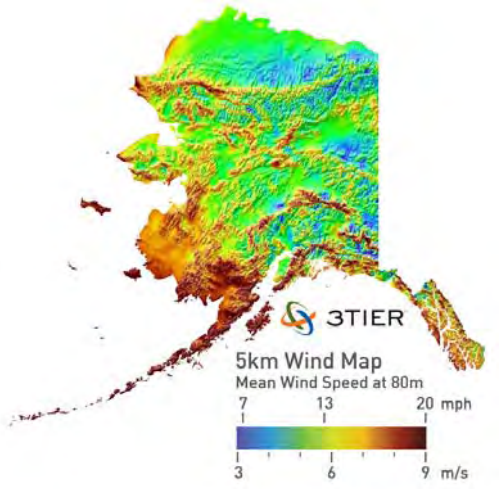
Alaska's extensive hydroelectric systems account for nearly a quarter of state-wide energy production. Alaska's other renewable energy initiatives have traditionally supported effective small-scale projects, feeding into larger transmission grids, as well as the several stand-alone grids serving rural villages. With some of the highest electricity costs in the nation, there is a growing interest in Alaska in utility-scale renewable systems, including those powered by ocean, geothermal, wind, and biomass energies. Distributed generation and larger scale renewable projects would also help provide power to Alaska's 200 remote, stand-alone electrical grids serving villages which have traditionally imported expensive diesel fuel to supplement their energy needs.

Cumulative Renewable Energy Capacity, 2010			
Wind	9 MW	Ocean	-
Solar Photovoltaic	-	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	0.8 MW	Biodiesel	-
Small Hydro	77 MW	**Totals**	87 MW

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Over 20 communities in Alaska generate electricity from wind power, the fastest growing renewable energy sector in the state. The Fire Island Wind Project, which would be the state's first utility-scale wind project at 54 MW, is currently under construction.
- At least three geothermal projects have been announced ranging from 5-25 MW, aided by two new state laws designed to make geothermal projects more economically viable. Exploratory drilling has begun on at least one of these sites.
- Wood is used for space heating statewide, with over 100,000 cords used per year.

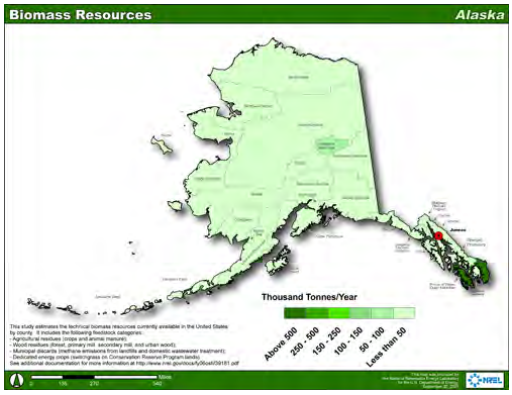


Wind Resources- The American Wind Energy Association (AWEA) ranks Alaksa's wind resource 32nd in the nation for potential capacity.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	368
Organizations	10
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$32.3m, 1/1 deal
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$18.8m
Competitive Grants & Tax Credits (48C & 1603)	$0.7m, 2 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Biomass Resources- Darker green indicates a greater concentration of biomass resources. Alaska's primary biomass resources are wood, wood waste, fish byproducts and municipal waste.

Alaska

Policies

Renewable Energy Goal: In June 2010, Alaska established a goal to generate 50% of the state's energy from renewable energy sources by 2025 and increase energy efficiency by 15% between 2010 and 2020. The goal includes power generated from hydroelectric facilities, which already account for nearly 25% of electricity generation in the state.

Net Metering: Electric utilities with annual retail sales of over 5 gigawatt hours are required to offer net metering for systems up to 25 kW. Overall enrollment is limited to 1.5% of a utility's sales from the previous year. Net excess generation is credited to the customer's next bill at the "non-firm power rate." These dollar amount credits do not expire and can be applied to subsequent monthly bills. Interconnection rules have not yet been passed. The Regulatory Commission of Alaska has had docket R-09-002 open to investigate interconnection rulemaking since February 2009.

State Loan Program: The Power Project Loan Fund provides loans to local government, municipal utilities, and independent power producers for the development or upgrade of small scale power production facilities, conservation facilities, and bulk fuel storage facilities. This includes facilities that depend on energy derived from renewable resources. The loan term is related to the life of the project.

State Grant Program: Administered by the Alaska Energy Authority, the Renewable Energy Grant Fund issues recommendations to the state legislature to fund feasibility studies, reconnaissance studies, energy resource monitoring, and work related to the design and construction of eligible facilities for in-state commercial, local government, tribal government, and utility renewable energy projects. The program receives funding through state appropriation and intends to provide $50 million in funding annually for five years from its inception in September 2008; however, funding for 2011 will be lowered to $25 million.

Tax Incentive: Alaska authorizes municipalities to provide a property tax exemption for the value added by residential renewable energy systems.

Other Legislation: In June 2010, Alaska dramatically cut the royalties geothermal developers must pay on projects, as well as lightened regulatory burden on renewable schemes. The legislation makes geothermal power projects economically viable in the state.

ACORE Members in Alaska

The Leighty Foundation

Renewable Energy in Arizona

Summary

Arizona has developed a robust and diverse renewable energy portfolio, on track to meet its renewable energy standard of 15% by 2025 and to displace its reliance on natural gas, coal and nuclear resources. As one of the sunniest states in the nation and with significant opportunities to develop its wind, geothermal and biomass resources, coupled with its strong offering of tax incentives and successful industry recruitment measures, Arizona has positioned its renewable energy sector for strong and sustained growth.

Cumulative Renewable Energy Capacity, 2010			
Wind	128 MW	Ocean	-
Solar Photovoltaic	47.3 MW	Biomass Power	37 MW
Concentrated Solar Thermal	3.5 MW	Bioethanol	55 mGy
Geothermal	-	Biodiesel	18.4 mGy
Small Hydro	-	**Totals**	215.8 MW; 73.4 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

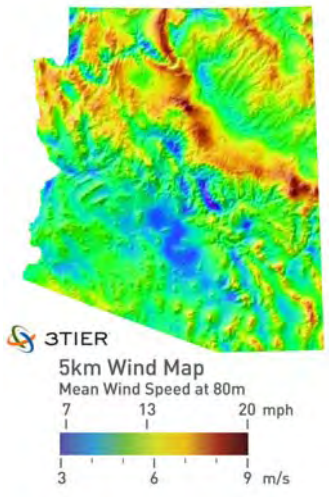
- Arizona has at least eleven renewable energy power generation facilities larger than 1 MW (4 biomass, 4 solar PV, 2 solar thermal, 2 wind) and three biofuels facilities (1 bioethanol, 2 biodiesel).
- Arizona is a major producer of solar panels, including crystalline and thin film, and serves as the headquarters for leading solar energy companies. Its favorable business climate and proximity to major solar markets have attracted both domestic and foreign firms.
- The state has over 2.2 GW of solar PV and CSP in the development pipeline, most of which is in the announced/planning stage.
  - In January 2011, the U.S. Department of Energy awarded a $967 million loan guarantee for the world's largest solar PV plant, the 290 MW Agua Caliente project, being constructed in Yuma County, Arizona.
  - In July 2010, Abengoa Solar received a conditional commitment for a federal $1.45 billion loan guarantee to finance its 250 MW solar trough plant outside of Phoenix.

Solar Resources- Up to 1,000 MW of solar electricity could be implemented in Arizona by 2020. The state's generation potential from solar is 101 million MWh/yr (Renewable Energy Atlas of the West).

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,738
Organizations	69
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$2,000.0m, 1/5 deals
Venture Capital & Private Equity (Grossed up)	$141.3m, 7 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$16.7m
Competitive Grants & Tax Credits (48C & 1603)	$98.8m, 77 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Wind Resources-There are over 75,000 acres of areas with wind power generation potential (Renewable Energy Atlas of the West).

Arizona

Policies

Renewable Energy Standard (RES): Arizona's RES mandates that 15% of the electric load from investor-owned utilities (IOUs) be from qualifying renewable energy sources by 2025, with 30% derived from distributed energy technologies. One-half of the distributed renewable energy requirement must come from residential applications and the remaining one-half from non-residential, non-utility applications. All IOUs serving retail customers in Arizona (except those with over half of their customers outside of the state) are subject to the RES, and must meet this threshold with the use of renewable energy credits (RECs). RECs can be bundled by individual utilities and used in any year to meet its annual requirement. Extra credit multipliers of up to two times the REC may be awarded for in-state solar installation and for in-state manufactured content. A surcharge is applied to electric utility bills to allow utilities to recover RES costs.

Net Metering and Interconnection: The Arizona Corporation Commission (ACC) established net metering for customers who generate electricity using all forms of renewable energy. Eligible systems must be sized to meet all or part of a customer's electric load; however, it cannot exceed 125% of the customer's total connected load. Net excess generation (NEG) from each source will be carried over to the customer's next bill at the utility's retail rate, as a kWh credit. Remaining NEG at the end of the calendar year will be paid to the customer. The Salt River Project (SRP), which provides its own standard for systems up to 100 kW, and municipal utilities do not fall under the jurisdiction of the ACC and therefore are not bound by ACC rules. Official state-wide interconnection standards have been debated since 2007 while state utilities continue to practice their own standards.

Tax Incentives: *Renewable Energy Production Tax Credit* – Facilitated by the Arizona Department of Commerce (DOC), qualified renewable energy systems will be eligible for a tax credit, personal or corporate, based on the amount of electricity produced annually for a 10-year span. The credit for wind and biomass equals $0.01/kWh for the first 200,000 MWh produced in a calendar year. The solar tax credit starts at $0.04/kWh in year one and gradually decreases to $0.01/kWh in year ten. No one system can claim more than $2 million of the DOC's $20 million annual cap.

Renewable Energy Business Tax Incentives – Provides income tax credits of up to 10% and property tax incentives for renewable energy companies that establish or expand their manufacturing facilities or corporate headquarters in Arizona. In order to qualify for the incentives, the business must pay their employees above a certain income level and/or invest at least $25 million in their facilities, equipment, land and infrastructure.

Solar and Wind Tax Credits – (1) Nonresidential: A corporate or personal tax credit for 10% of the installed cost of a renewable energy systems, available to all nonresidential entities (including those that are tax-exempt). Third parties that install or manufacture systems are able to claim the credit. (2) Residential: A personal tax credit for 25% of the installed cost of solar or wind energy devices at Arizona taxpayer residences. (3) Starting in 2011, individual and corporate tax credits are provided for research and development, production and delivery system costs associated with solar liquid fuels.

Sale Tax Exemption – A sales tax exemption for the retail sale and installation of solar and wind energy devices.

Property Tax Incentives – (1) A property tax exemption for the value added by renewable energy equipment, including both electric and thermal energy generating systems. (2) Renewable energy equipment owned by utilities and other entities operating in Arizona is assessed at 20% of its depreciated cost when determining property tax.

Qualifying Wood Stove Deduction – A personal deduction for the cost of converting an existing wood fireplace to a qualifying wood stove.

ACORE Members in Arizona

Arizona Public Service Company, Solar Energy Services
First Solar
Honeywell
Salt River Project
Solon Corporation
University of Phoenix

Renewable Energy in Arkansas

Summary

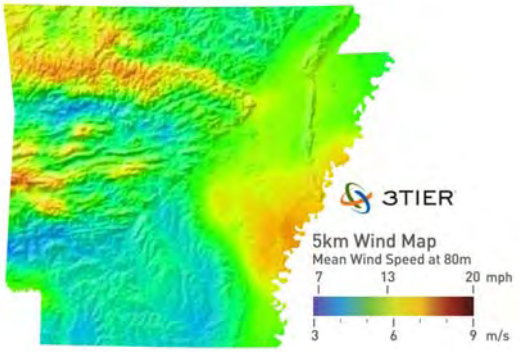
Arkansas relies on imported coal to meet 50% of its electricity demand and has a significant opportunity to develop its in-state energy sources with renewable energy. Although renewable energy currently contributes only a small fraction of the state's energy supply, Arkansas has had great success in attracting large manufacturers of wind components to build facilities in the state, which have helped to bring in millions of dollars of investment. With its vast biomass resources and opportunities for wind and solar energy development, Arkansas has the potential to further mature its renewable energy economy.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	0.5 MW	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	47 mGy
Small Hydro	-	**Totals**	0.5 MW; 47.0 mGy

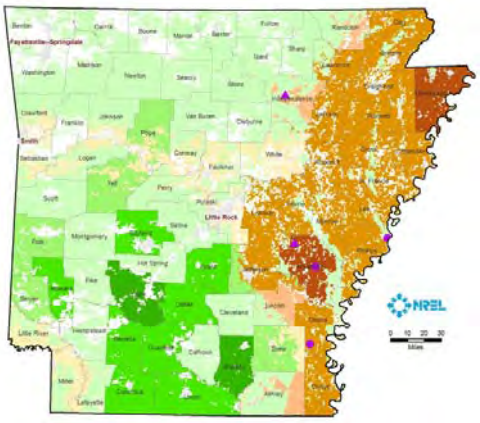
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Arkansas is home to manufacturers of wind turbine blades that are frequently sold to wind farms in nearby Texas. With tax incentives in place to attract wind turbine manufacturers, Arkansas has welcomed six manufacturing companies that have invested over $400 million and created over 3,000 jobs. Two other turbine companies are in the process of constructing facilities in Fort Smith and Osceola.
- Arkansas has four biodiesel plants that produce an aggregate of 70 million gallons per year and one biomethane plant.
- Agronomists in Arkansas are currently studying how many tons of switchgrass per acre farmers could harvest for cellulosic biofuel production.



Wind Resources- The American Wind Energy Association (AWEA) ranks the state 27th in the nation for potential capacity.



Biomass Resources- Arkansas ranks 6th in forest residue resources with 2,874 metric tons per year and 9th in primary mill resources with 3,623 metric tons per year in the United States. The state has a cumulative biomass resource of 12,777 metric tons per year.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	866
Organizations	10
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/1 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.5m
Competitive Grants & Tax Credits (48C & 1603)	$30.9m, 3 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Arkansas

Policies

Net Metering: The Arkansas Public Service Commission (PSC), which regulates investor-owned and cooperative utilities only, established rules for residential systems up to 25 kW, and non-residential systems up to 300 kW utilizing solar, wind, hydroelectric, geothermal, or biomass systems. Customers own the Renewable Energy Credits (REC) associated with the system, however, any net excess generation remaining at the end of the annual billing cycle is left to the utility. The PSC is authorized to increase the fee for net metered customers at any time if its costs are greater than the net metering benefits.

Interconnection Standards: Net metered systems must meet all performance standards established by local and national electric codes. Additionally, utilities may require facilities to meet additional safety and performance standards approved by the PSC, which are paid for by the customer. Customers must install an external disconnect switch, which may be waived under certain circumstances.

Tax Incentive: The Wind Energy Manufacturing Tax Incentive provides a full tax exemption for manufacturers of windmill blades or components that meet certain criteria. These businesses must show significant investment and job creation, among other criteria, to be eligible for the exemption.

Rebates: The Arkansas Energy Office provides funding for solar PV, small wind, and solar water heating systems that are net metered and have an interconnection agreement. Funding comes from The American Recovery and Reinvestment Act of 2009 (ARRA). The rebate for PV and small wind is based on the actual first year production of the system. Depending on system size, rebates for PV range from $0.75 to $1.50 per kWh; rebates for wind range from $0.625 to $1.25 per kWh; and rebates for solar water heating range from $15 to $30 per square foot.

Loans: Arkansas provides low-interest rate loans of up to $2 million for the industrial installation of PV, wind and biomass projects and for energy efficient measures. The program is administered as a $10 million revolving loan fund, funded by ARRA.

ACORE Members in Arkansas

BioEnergy Systems
Mid-South Engineering
The Price Companies
Winrock International

Renewable Energy in California

Summary

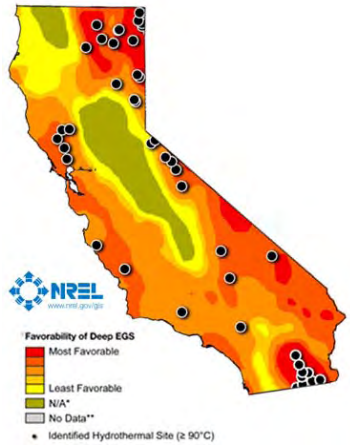
With a population of over 36 million people and an economy that is the eighth largest in the world, California has faced many challenges and opportunities regarding its renewable energy economy. The state benefits from rich renewable energy resources and has put policies and financial incentives in place to support the growth of the sector. California leads the nation in electricity generation from non-hydroelectric renewable energy sources, including geothermal power, wind power, biopower and solar power. California's resource base and its early, sustained support for the renewable energy industry has been successful in attracting and incubating leading renewable energy companies which has, in turn, created many high-quality jobs.

Cumulative Renewable Energy Capacity, 2010			
Wind	3,177 MW	Ocean	-
Solar Photovoltaic	798.3 MW	Biomass Power	705 MW
Concentrated Solar Thermal	363.8 MW	Bioethanol	199.5 mGy
Geothermal	2,565.5 MW	Biodiesel	68.9 mGy
Small Hydro	24 MW	**Totals**	7,633.6 MW; 268.4 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- California is a global hub for renewable energy research and development, with a strong innovation to commercialization track record and an attractive environment for start-ups. The Lawrence Berkeley National Laboratory is located in California and is on the forefront of clean tech R&D.
- California has the largest market for solar photovoltaic applications in the nation, with over 212 MW of grid-tied PV installed in 2009 alone. Many companies have located manufacturing plants and headquarters in the state and its neighbors for proximity to California's market.
- The state's CSP development pipeline has surpassed over 10 GW of trough, tower and dish projects, over 2.7 GW of which has received permitting. The 392 MW Ivanpah solar tower facility is currently under construction, the recipient of a 2010 conditional loan guarantee.
- Over 80% of U.S. geothermal electric capacity is concentrated in California. It represents about 10% of in-state commercial electricity generation.

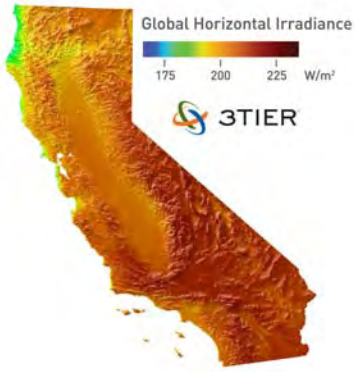


Geothermal Resources- Of the 25 known geothermal resource areas, 14 have temperatures of 300 °F or greater. It is estimated that the state has a potential of more than 4,000 MW of additional power from geothermal energy using current technologies.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	17,505
Organizations	675
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$3.15bn, 21/67 deals
Venture Capital & Private Equity (Grossed up)	$3.51bn, 115 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$85.4m
Competitive Grants & Tax Credits (48C & 1603)	$560.6m, 266 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Solar Resources- California has a large potential for solar PV and CSP, particularly in the south and western parts of the state, with a maximum potential of 17 million MW.

California

Policies

Renewable Portfolio Standard (RPS): California's RPS required electric utilities to increase procurement from eligible renewable energy resources by 1% of their retail sales annually, until they reached 20% by the end of 2010. In 2009, Governor Schwarzenegger issued an executive order which called to increase the standard to 33% by 2020, but it expired when he left office in January 2011. Renewable energy credits (RECs) are used to demonstrate compliance with state RPS policies. In March 2010, the California Public Utilities Commission (CPUC) ruled that utilities may use unbundled or tradable RECs (TRECs), i.e. using generation sources other than those they own to meet up to 25% of their RPS requirement. The penalty for not meeting annual procurement targets on time is 5 cents per kWh, capped at $25 million per utility per year.

Net Metering and Interconnection: California's net metering law requires all utilities, with one exception, to provide net metering for solar and wind energy systems up to 1 MW, until the utility meets 5% of its customer peak demand (capped at 50 MW for biogas digesters and 112.5 MW for fuel cells). Investor-owned utilities are also required to offer net metering for fuel cells and for biogas digesters up to 10 MW. After 12 months, customers have the option of rolling over net excess generation (NEG) month-to-month indefinitely or they can receive financial compensation from their utility for the remaining NEG. The customer retains ownership of RECs. In 2009, California became one of the first states to allow virtual net metering for multi-family affordable housing units and municipalities.

California's interconnection standards apply to distributed generation systems up to 10 MW in capacity, with simplified rules for small renewable energy systems under 10 kW. Net metered systems up to 1 MW are exempt from paying costs associated with interconnection studies.

California Solar Initiative (CSI): In 2006, the CSI program was created to provide more than $3.2 billion over ten years in onsite, grid-connected solar energy used by customers in the territories of the state's three investor-owned utilities (IOUs) and several municipal utilities. The program has a goal of reaching 3,000 MW of installed capacity by 2016. CSI offers two types of incentives for solar PV on existing homes and non-residential buildings: an Expected Performance-Based Buydown (EPBB) for systems under 30 kW, at $2.50/W (adjusted for system performance) for residential and commercial systems and $3.25/W for government entities and nonprofits; or Performance-Based Incentive (PBI) payments for systems over 30 kW, offered over a period of five years at $0.39/kWh for taxable entities and $0.50/kWh for government and nonprofit entities. Systems lower than 30 kW may opt for either the PBI or an EPBB.

CSI also offers rebates for solar water heating systems, for $12.82 per therm of natural gas displaced or $0.37 per estimated kWh of electricity displaced. The maximum incentive is $1,875 for single-family residential systems and $500,000 for commercial and multifamily residential systems. The program budget is $350 million.

The CSI program is funded by electric ratepayers and the CSI-Thermal portion of the program is funded by gas ratepayers. The program has separate budgets and administration plans for its other components: the low-income single and multifamily programs.

Other Rebate Programs: *The Emerging Renewables Program* offers cash incentives of $3/W to promote the installation of grid-connected small wind and fuel cell electric generating systems.

The New Solar Homes Partnership provides incentives for solar on new home construction for customers in IOU service territories, which vary by customer class and system performance.

The Self-Generation Incentive Program offers incentives to customers who produce electricity with wind turbines and fuel cells ranging from $1.50/W - $4.50/W, depending on type. An additional 20% is awarded to projects that utilize systems manufactured in California. Incentive payment is capped at 3 MW, and projects over 1 MW receive reduced rates after the first megawatt.

Feed-in Tariff: In 2006, California passed a feed-in tariff law (FIT) that would require IOUs to provide payments to small-scale renewable energy projects up to 1.5 MW in capacity. Since this program was implemented in 2007 for a cumulative capacity of 500 MW, there have been less than 20 MW of cumulative capacity to come online.

California

Another FIT law was passed in 2009, but without a mandatory implementation date, it is uncertain that the CPUC will implement the program. The program would expand the original FIT to include all publicly-owned utilities (POUs) that have 75,000 or more customers until the statewide POU cumulative capacity equals 250 MW, for a total program capacity of 750 MW. The eligible project size would be increased to 3 MW.

In December 2010, the CPUC passed the Renewable Auction Mechanism (RAM) program, which would require California's three IOUs to purchase electricity from renewable energy systems up to 20 MW in size within their service territories. For the initial part of the program, each utility is authorized to acquire up to 1 GW, with each utility allocated a portion of the 1 GW cap. Competitive auctions are to be held twice a year for two years, for 250 MW each.

Public Benefit Fund: California's three major IOUs collect a "public goods surcharge" on ratepayer electricity. This charge established funds for renewable energy ($540 million), energy efficiency ($872 million), and research, development & demonstration (RD&D) ($62.5 million). The California Energy Commission manages the renewables funds through three programs: the Existing Renewable Facilities Program, the Emerging Renewable Program, and the Customer Education Program.

Tax Incentives: California provides a full exemption from the state's sales and use tax for expenses relating to the industrial design, manufacture, production, or assembly of renewable energy equipment.

California provides a full property tax exclusion for solar electric and thermal systems, or for 75% of the system's value for dual use equipment.

ACORE Members in California

8minutenergy Renewables
Adam Capital Clean Energy Asset Finance
Advantage for Analysts, LLC
AEE Solar
Alternative Energy Magazine
American Environmental Energy, Inc.
Applied Intellectual Capital
Applied Materials
Arnold Leitner & Partners LLC
Autodesk
BioEnergy Producers Association
Blue Oak Energy, Inc.
BlueFire Ethanol Fuels, Inc.
Bourne Energy
BrightSource Energy, Inc.
Brinderson Engineers & Constructors
Butte-Glenn Community College District
California Center for Sustainable Energy
California Clean Energy Fund
California Energy Commission
California Public Utilities Commission
Center for Resource Solutions
Clean Edge
CMEA Capital
Cool Earth Solar
CoolPlanetBioFuels
Cortex Capital
Covington & Burling
DeWind Co.
Draper Fisher Jurvetson
Duane Morris LLP
Eastern Power & Systems Pvt. Ltd
Ecodirect
EnergySource
EnLink Geoenergy Services
Enphase Energy Inc.
enXco
Firestar Engineering
GCL-Poly Energy Holdings Limited
GCube Insurance Services
GL Garrad Hassan
Global Energy Network Institute
Global Green Solutions Inc.
Green Energy War, LLC
GreenHouse Holdings
GreenPower Capital
GreenScience Exchange
Greentech Media Inc.
Greenwich Blackhawk Partners, Professional Corporation
GroundWork Renewables, Inc.
Innovo Energy Solutions Group
Korea Trade - Investment Promotion Agency (KOTRA)
Kruse Technologies
Los Angeles Community College District
Mobility Future LLC
Morrison & Foerster, LLP
MRW & Associates
Natel Energy, Inc
Navigant Consulting
Nexant Inc.
Nixon Peabody LLP
Novogradac & Company LLP
Nth Power
Orrick, Herrington, & Sutcliffe LLP
Pacific Edison
Passport Capital
PCG Asset Management, LLC
PG&E Corporation
Pillsbury Winthrop Shaw Pittman LLP
Professional Engineers in California Government
Pulsar Energy Capital LLP
RBF Consulting
REC Systems, Inc.
Recurrent Energy
Risk Strategies Company
Roberts Consulting
Roseville Electric
Sacramento Municipal Utility District
Sandia National Laboratories
Scatec Solar North America
Silicon Valley Bank
Skoll Foundation
Solar Monkey
Solar Power Partners
SolarCity
Solargiga USA
SolarReserve
SolFocus
Southern California Edison
SunPower Corporation
Technology Partners
The Center for Sustainable Energy Farming
The Renewable Technologies Corporation
Third Planet Windpower
Tioga Energy
TJG Energy Associates LLC
United Kingdom Trade & Investment
US Renewables Group
VantagePoint Venture Partners
Venrock
Wells Fargo-Environmental Finance
Western Energy Solutions
WilmerHale

This Page Intentionally Blank

Renewable Energy in Colorado

Summary

Colorado has an abundance of renewable energy resources, particularly in the wind, solar, biofuels, and geothermal sectors. With one of the most ambitious renewable portfolio standards in the nation (30% by 2020), a substantial rebate program, a strong net metering policy, and a host of other important market incentives, Colorado has the 5th largest solar market and the 12th largest wind market in the U.S. Colorado is home to the National Renewable Energy Laboratory, one of the leading research, development and deployment facilities of the Department of Energy on renewable energy and energy efficiency. Given its abundant renewable resources, political leadership, and effective deployment of federal stimulus dollars, job creation and economic development in Colorado's "new energy economy" has been substantial.

Cumulative Renewable Energy Capacity, 2010			
Wind	1,299 MW	Ocean	-
Solar Photovoltaic	60.7 MW	Biomass Power	8 MW
Concentrated Solar Thermal	1 MW	Bioethanol	125 mGy
Geothermal	-	Biodiesel	43.7 mGy
Small Hydro	-	**Totals**	1,368.7 MW; 168.7 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

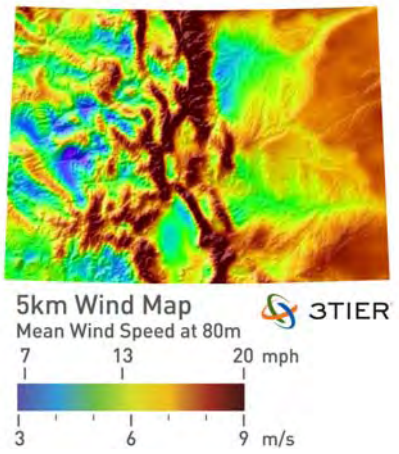
Market

- The state's wind industry has attracted major original equipment manufacturers (OEMs), including Vestas Wind Systems which has made the state a manufacturing hub.
- NREL has combined forces with three universities in Colorado to participate in a renewable energy collaboratory that has also expanded R&D efforts in the state.
- Colorado has over 800 MW of solar energy in the development pipeline. The Alamosa CPV plant would be the world's largest concentrating photovoltaic facility, at 30 MW.
- Abound Solar Manufacturing, LLC was offered a conditional commitment for a $400 million loan guarantee to manufacture state-of-the-art thin film solar panels at two facilities, one of which will be located in Colorado.

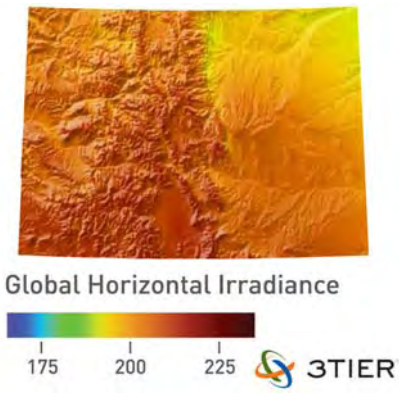
Economic Development

Employment	
Direct and Indirect Jobs, 2009	3,353
Organizations	119
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$555.0m, 4/11 deals
Venture Capital & Private Equity (Grossed up)	$210.3m, 10 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$12.0m
Competitive Grants & Tax Credits (48C & 1603)	$197.2m, 174 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Wind Resources- Colorado has an excellent wind resources. The American Wind Energy Association (AWEA) ranks the state 11th in the nation for potential capacity.



Solar Resources- With over 300 days of sunshine per year, Colorado could produce approximately 83 million MWh per year from solar energy. Its solar resource ranks 6th in the nation.

Colorado

Policies

Renewable Portfolio Standard (RPS): Based on the first citizen-initiated RPS passed in 2004, Colorado's current RPS requires 30% renewable energy from eligible resources by 2020 for investor-owned utilities (IOUs), and 10% by 2020 for electric cooperatives and municipal utilities. Distributed generation must account for 3% of IOU's requirement. Tradable renewable energy credits (TRECs) may be used to satisfy the standard. Renewable energy generated in-state receives 125% credit for RPS compliance purposes. Community-based renewable energy in the service territory of electric cooperatives and eligible municipal utilities receives a 150% credit for RPS compliance purposes; solar electricity generated in these service areas and installed before 2015 receives a 300% credit.

Net Metering and Interconnection: Colorado's net metering policy is available for customers of IOUs with renewable energy systems sized up to 2 MW or 120% of the customer's annual average consumption. It is also provided for nonresidential systems of up to 25 kW, and to municipal and cooperative customers with systems up to 10 kW. Net excess generation is applied as a credit to the customer's next bill. Net metering is also provided for some community solar systems of up to 2 MW in IOU service territories. Colorado's rules for interconnection include provisions for three levels of interconnection for systems up to 10 MW, based on system complexity, and which follow the Federal Energy Regulatory Commission (FERC) standards.

Rebates: The Colorado Governor's Energy Office (GEO) provides rebates for qualifying renewable energy systems at commercial and residential buildings. Commercial: up to $1.50/W for the first 10 kW of solar PV systems up to 25 kW; up to $1.00/W for the first 15 kW of wind systems up to 50 kW; and 30% of the total installation cost, or up to $15,000 for solar thermal systems. Residential: up to $1.50/W for PV systems; up to $1.00/W for wind systems; and up to $3,000 for solar thermal systems.

Tax Incentives: *Sales Tax Exemption* – State sales and use tax is exempted for the sale, storage, and use of renewable energy components.

Property Tax Exemption – Property taxes are exempted for "household furnishings," which include certain renewable energy systems. Property tax for utility-scale electric generating facilities is based on installed cost.

Local-Option – Counties and municipalities are authorized to offer property or sales tax rebates or credits to residential and commercial property owners who install renewable energy systems on their property.

Grants and Loans: In its most recent round of funding in August 2010, Colorado issued $2.2 million in grants for 23 renewable energy and energy efficiency projects with funding from the American Recovery and Reinvestment Act (ARRA).

Colorado provides loans over $100,000 for solar water heat, PV, wind and other distributed generation technologies. The program is funded by ARRA and has a budget of $13 million.

ACORE Members in Colorado

Abengoa Solar
Alliance for Sustainable Energy, LLC
Association for the Advancement of Sustainability in Higher Education (AASHE)
Colorado Cleantech Industry Association
Conergy
Council for Adult and Experiential Learning for EPCE
Davis Graham & Stubbs LLP
Empowered Energy
FMI Capital Advisors
Global Commerce Forum
Holland & Hart
Infotility, Inc.
Knight Piesold & Co.
Luminate, LLC
Meetings International Natural Resources Enterprise (MiNE LLC)
Plexus Capital LLC
SkyFuel
Sturman Industries
Tendril
University of Colorado - Boulder
University of Denver University College
Vapor Technologies
Western Area Power Administration (WAPA)

Renewable Energy in Connecticut

Summary

Despite Connecticut's small size and relatively cool climate, it has managed to create a growing market for residential and commercial solar energy, sustained by supportive rebates and distributed generation programs. The state is also fulfilling its 23% renewable portfolio standard by taking advantage of its commercial and industrial waste resources for electricity generation. Significant opportunities remain for the diversification of the state's renewable energy sector, including the development of its on and offshore wind, ocean power, hydrokinetic, biomass, landfill gas and thermal energy resources.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	19.7 MW	Biomass Power	214 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	-
Small Hydro	-	**Totals**	233.7 MW

Estimated capacity as of December 31, 2010; see User's Guide for details.

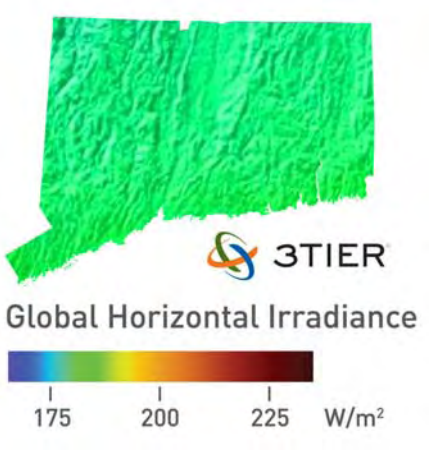
Market

- The bulk of renewable energy generation in Connecticut is derived from 7 waste-to-energy plants throughout the state.
- As a result of the state's incentives, a number of large and innovative renewable energy projects are being developed, including two ocean power pilot facilities, a utility-scale cellulosic ethanol plant, and biodiesel, solar and biomass facilities.
- A solar photovoltaic encapsulant company is seeking to expand its Connecticut manufacturing capacity to 3 GW in 2011 and develop a 20,000 square foot research and development laboratory.

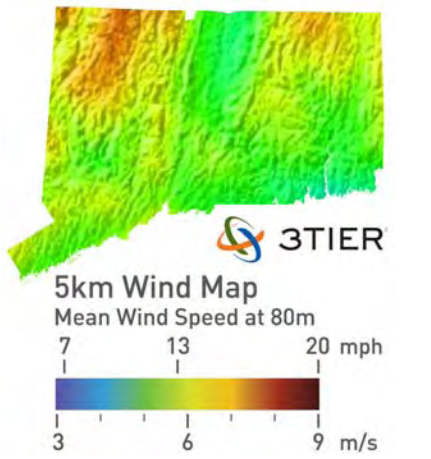
Economic Development

Employment	
Direct and Indirect Jobs, 2009	727
Organizations	53
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/0 deals
Venture Capital & Private Equity (Grossed up)	$98.6m, 1 deal
Federal Funding	
Recovery Act Funding, Department of Energy	$4.3m
Competitive Grants & Tax Credits (48C & 1603)	$33.7m, 29 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Solar Resources- Connecticut has mid-range solar potential throughout the state. The best identified areas for potential solar installations are in the counties of Middlesex and New London along the coast.



Wind Resources- Connecticut has a wind resource suitable for large and small scale installations, with the highest speeds in the northwest and offshore.

Connecticut

Policies

Renewable Portfolio Standard (RPS): Connecticut's RPS requires investor-owned utilities (IOUs), municipal utilities, and retail suppliers to supply at least 23% of its retail load by using renewable energy by 2020 and at least 4% of its retail load by using combined heat and power (CHP) systems and energy efficiency by 2010. Electric providers must meet the standard with at least 20% Class I resources (e.g. solar, wind, fuel cells, landfill gas, ocean power, newer small hydro, sustainable biomass) and 3% Class I or Class II resources (e.g. waste-to-energy facilities, older run-of-river hydropower, certain biomass facilities) by January 1, 2020, and 4% Class III sources (e.g. CHP, energy efficiency, and heat recovery) in and after 2010. The requirements may be satisfied by purchasing electricity generated using Class I or Class II resources within the jurisdiction of the regional independent system operator (ISO New England), with certain restrictions.

Net Metering and Interconnection: Connecticut's two investor-owned utilities (IOUs) are required to provide net metering for its customers using "Class I" resources (see RPS description). Customers are limited to a capacity of 2 MW per billing cycle, with rollover credited to the next billing cycle for net excess generation (NEG) at the retail rate, and reconciled annually at either the avoided cost rate or the time of use/generation rate for PV systems. Connecticut's interconnection guidelines apply to IOUs for systems up to 20 MW, in a three tier system based on capacity, modeling FERC's standards.

Connecticut Clean Energy Fund (CCEF): Funded by a $0.001/kWh surcharge on ratepayer's utility bills and administered by a quasi-government investment organization, the CCEF develops programs and funds projects to support the deployment of low-impact, sustainable renewable energy systems. Programs of the CCEF include grants, rebates, solar leases, demonstration projects and others. The program's budget is $20 million annually.

Rebates: *Geothermal Heat Pumps*—Rebates range from $1,050-$1,200/ton for residential projects, $1,050/ton for commercial, and $1,750/ton for nonprofit projects, until $5 million is distributed, funded by the Recovery Act. *Solar PV*— Rebates are offered for residential systems of up to 10 kW (adjusted based on expected performance) for $1.75/W for first 5 kW and $1.25/W for next 5 kW, for up to $15,000, funded by the CCEF. *Solar Thermal*—With $4 million in funding from the Recovery Act, the CCEF offers $275/MMBtu (predicted output) for residential systems, $450/MMBtu for commercial systems, and $550/MMBtu for nonprofit and governmental systems.

Grants: *Commercial PV*—Grants are available for commercial, industrial, nonprofit and government entities for PV installations between 50 and 200 kW, to allow the projects to break even and make a reasonable return. The program is funded by a $3 million allocation through the Recovery Act. *On-Site Renewable Distributed Generation (DG)*—Grants are available on-site renewable energy systems, to allow the projects to break even. Solar PV systems must be between 10 and 200 kW. $12.86 million is available for the program through June 2012. *Industry Recruitment*—Grants of up to $10,000 are available for businesses developing innovative renewable energy technologies.

Loans: Connecticut offers low-interest loans for PV, wind, fuel cells and CHP/cogeneration with a capacity of between 50 kW and 65 MW, for a maximum loan of $150 million. Loans are also available to single families for emergency energy-related improvements and to companies for demonstration projects.

Solar Lease: CT Solar Lease leases PV systems to homeowners for 20 years with fixed, monthly payments.

Tax Incentives: *Sales and Use Tax Exemption*—Offered for passive and active solar energy equipment and geothermal resource systems. Also offered for solar equipment, machinery and fuels used to manufacture renewable energy systems. *Property Tax Exemption*—Offered for "Class I" renewable energy systems, hydropower systems, as well as active or passive solar heating for single and up to four unit homes.

ACORE Members in Connecticut

Celtic Energy Inc
Eastern Connecticut State University
Environmental Energy Solutions LLC
GE Energy Financial Services
GTherm, Inc.
Hartford Financial Services Group
Natural State Research Inc
RC Knox & Company
Renewable Energy & International Law (REIL)
Starwood Energy Global Group
Stonegate Skyview Energy
The Green Revolution, Inc.

Renewable Energy in Delaware

Summary

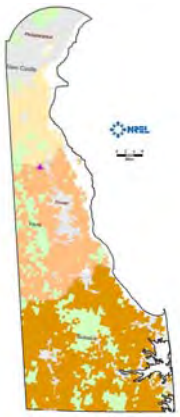
Delaware's renewable portfolio standard of 25% by 2025, with a 3.5% carve-out for solar, is helping to reduce the state's reliance on imported coal and natural gas. The state's public benefit fund, net metering policy and incentives for renewable energy manufacturing also provide it with a supportive policy foundation for continued, diversified renewable energy development. Delaware possesses extensive biomass resources in addition to promising offshore wind resources that are becoming nationally recognized through Delaware's commitment to increasing renewable energy's role in the state's overall economy.

Cumulative Renewable Energy Capacity, 2010			
Wind	2 MW	Ocean	-
Solar Photovoltaic	4.9 MW	Biomass Power	7 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	6 mGy
Small Hydro	7 MW	**Totals**	20.9 MW; 6 mGy

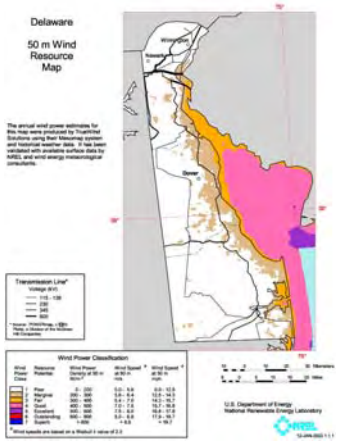
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Delaware is planning an offshore wind farm, the 450 MW Bluewater Project, which has no near-term completion date. In addition, The University of Delaware and the National Renewable Energy Laboratory have announced a five year partnership to develop a shallow-water research zone where companies can test offshore wind technologies.
- The Dover SUN Park will be the state's first utility-scale solar project, with 10 MW of capacity, to be completed in 2011.
- After becoming the world's first laboratory dedicated to PV research and development in 1972, the University of Delaware has been responsible for a number of ground-breaking innovations in the solar PV industry throughout the years.
- Although plans had been announced in 2009 to close Delaware's 34 MW General Electric solar manufacturing facility, it will now remain open and be owned by a Taiwan-based company. The deal saved approximately 70 jobs and plans have been announced to hire an additional 75 people by the end of 2010.



Biomass Resources- Delaware has about 482 thousand metric tons per year of biomass resources. Crop residue (dark brown in the map) accounts for about half of its total resource.



Wind Resources- Delaware's wind resource map. Purple represents an excellent resource area while blue and purple indicate outstanding to superb resources.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	672
Organizations	18
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$60.0m, 1/1 deal
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$3.0m
Competitive Grants & Tax Credits (48C & 1603)	$1.8m, 25 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal.
Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Delaware

Policies

Renewable Portfolio Standard (RPS): Amended in July 2010, Delaware's RPS requires its investor-owned utility (IOU), the Delaware Electric Cooperative and municipal utilities to purchase 25% of the electricity sold in-state from renewable sources generated in-state, including 3.5% from solar PV systems, by 2025. Suppliers who fail to comply with the standard's requirements must pay into the Delaware Green Energy Fund an alternative compliance payment with increasing rates for repeated shortfalls and higher payments for failing to comply with the PV requirements. Suppliers receive a 300% credit toward RPS compliance for in-state customer-sited PV generation and fuel cells using renewable fuels that cannot be applied to the PV requirement; a 150% credit toward RPS compliance for energy generated by wind turbines; and a 350% credit for offshore wind facilities.

Net Metering and Interconnection: The maximum capacity of a net metered system is 25 kW for residential customers; 100 kW for farm customers on residential rates; 2 MW per meter for non-residential customers of Delmarva Power and Light (DP&L); and 500 kW per meter for non-residential customers of Delaware Electric Cooperative (DEC) and municipal utilities through the Delaware Municipal Electric Corporation (DEMEC). Net excess generation (NEG) is carried over to the customer's next billing cycle at the utility's retail rate until the end of a 12-month period. Customers have the choice to carry over their NEG indefinitely or request payment if over $25 or credit if under. If the aggregate capacity of all net metered systems exceeds 5% of the capacity necessary to meet the electric utility's aggregated customer monthly peak demand for a particular calendar year a utility may deny net metering to a customer. The program was amended in July 2010 to allow homes and businesses to sell back 110% of their aggregate consumption to the grid and to allow for aggregate net metering. The Delaware Public Service Commission has not adopted mandatory interconnection standards, although Delaware law requires it to develop rules using the Interstate Renewable Energy Council's and Department of Energy's model rules as a guide.

Performance-Based Incentive: A solar renewable energy credit (SREC) is equivalent to 1 MWh of retail electricity sales that come from solar PV energy. Electric suppliers must purchase SRECs to meet their RPS requirements, or pay a Solar Alternative Compliance Payment (SACP), which is priced from $400—$500/MWh.

Public Benefit Fund: The Green Energy Fund, which supports state renewable energy grant programs, is subsidized by DP&L customers on a per kWh basis. The program collects approximately $3.2 million a year for renewable energy and energy efficiency programs and $0.8 million a year for low-income programs.

Grants: Through the Green Energy Fund, Delaware provides grants to renewable energy demonstration projects for up to 25% of equipment costs. The program has a budget of $720,000 annually. Grants are also provided to projects that "develop or improve" renewable energy in the state, for 35% of the costs or up to $250,000 per project. The program has a budget of $288,000 annually.

Loans: The Delaware Sustainable Energy Utility offers loans of up to $20,000 to Delaware businesses, nonprofits, and governmental organizations that make energy efficiency improvements, including renewable energy installations. Loans are limited to the payback period for the measure plus one year, or ten years. Interest rates are currently set at 1.99% for all projects. The program also offers cash incentives of up to $20,000 per project and is funded by the American Recovery and Reinvestment Act.

Rebates: For the state's IOU, rebates are offered for up to $0.35-$2.55 of installation costs for PV, solar water heating, fuel cell, and wind turbine systems and $700-$1000/ton for geothermal heat pumps. For municipal utilities, rebates ranging from 25-50% (depending on technology) of installed costs are offered for PV, solar thermal, wind, geothermal, and fuel cell systems. These rebate programs are funded by the Green Energy Fund.

ACORE Members in Delaware

Dupont
SolarDock

Renewable Energy in D.C.

Summary

There are currently no utility-scale renewable energy systems installed or under development in the District of Columbia. Renewable energy credits from other states are mostly used to satisfy the state's 20% renewable portfolio standard. Within the District, distributed generation has been increasing in significance, and there are over 325 solar electricity systems installed on residential, commercial and government properties across the District. Given the federal government's commitment to generating or purchasing renewable energy, and the District's suitable solar and wind resources and the large amount of available, unused roof space, the prevalence of distributed generation is set to increase.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	1.4 MW	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	-
Small Hydro	-	**Totals**	1.4 MW

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

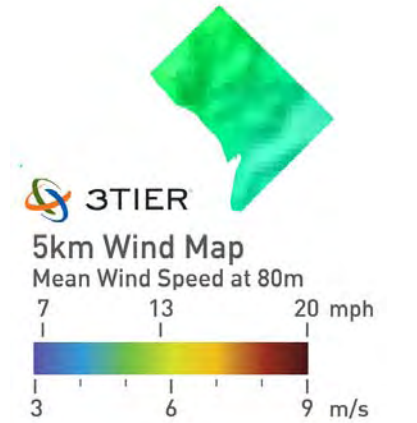
- In 2008, the first government agency, the Department of Energy, adopted a roof-mounted solar array, a 205 kW system on its Forrestal Building that provides up to 8% of the building's energy during peak hours.
- In a symbolic move, President Barak Obama announced the return of solar panels to heat water and supply electricity to the White House in October 2010. Previously, President Jimmy Carter spent $30,000 to install a solar water heating system in the 1970s (which was later removed in 1986).

Economic Development

Employment	
Direct and Indirect Jobs, 2009	38
Organizations	20
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$5.6m
Competitive Grants & Tax Credits (48C & 1603)	$0.1m, 2 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Solar Resources- D.C. has a moderate solar resource, suitable for large and small photovoltaic and thermal systems.



Wind Resources- D.C.'s wind resource is best suited for small scale systems.

District of Columbia

Policies

Renewable Portfolio Standard (RPS): D.C. electricity suppliers must purchase renewable energy credits (RECs) to meet 20% of their electricity sales by 2020, including 0.4% from solar. Suppliers must also meet annual benchmarks to satisfy the requirement. In 2020, only "Tier 1" resources may be used to satisfy requirements, and include solar electric or thermal, wind, biomass, landfill gas, wastewater treatment gas, geothermal, ocean power or thermal, and fuel cells. "Tier 2" resources must be used to satisfy a percentage of the requirement in the years prior to 2020, declining in steps from 2.5% in 2007 to 0.5% in 2019, and includes hydropower (other than pumped-storage) and municipal solid waste. Electricity suppliers must give priority to solar generated in D.C., and may turn to purchasing solar RECs from other jurisdictions only when the supply is exhausted. As a penalty for noncompliance, suppliers must pay into the D.C. Renewable Energy Development Fund a $0.05 per kWh of shortfall from Tier 1 resources and a $0.01 per kWh of shortfall from Tier 2 resources, and, from 2009 to 2018, a $0.50 per kWh of shortfall from required solar resources.

Net Metering and Interconnection: The District's only investor-owned utility, PEPCO, is required to offer net metering to renewable energy systems with a capacity up to 1 MW. If the utility chooses to install an additional meter on the residence, it must be at its expense. Net excess generation (NEG) for systems of 100 kW or less is credited to the customer's next bill at the full retail rate, or at the generation rate for systems larger than 100 kW. Interconnection standards apply to all distributed generation systems up to 10 MW that are operated in parallel with the electric distribution system. Interconnection rules have four levels of review, generally based on system capacity.

Public Benefits Fund: The Sustainable Energy Trust Fund supports renewable energy incentives and demonstration projects as well as energy efficiency systems, and is financed by a surcharge on the electric and natural gas bills of utility customers (with some exceptions). It has a budget of $17.5 million in 2011.

Rebates: Rebates range from $1-$3/watt for PV and wind systems that do not exceed onsite consumption.

ACORE Members in D.C.

Advance Capital Markets
Advanced Biofuels Association
Akin Gump Strauss Hauer & Feld LLP
Alliance for US India Business
Alliance to Save Energy
American Biogas Council
American Public Power Association
Andrews Kurth LLP
Australian Trade Commission
Biomass Thermal Energy Council
Bipartisan Policy Center
Bridging Nations
Center for American Progress
Center for Environmental Innovation in Roofing
Christensen Global Strategies, LLC
Chrysalis Energy Partners
Clean Economy Network
Council on Competitiveness
Covington & Burling
David Gardiner & Associates, LLC
Dickstein Shapiro LLP
Distributed Sun
EarthShot Foundation
Electric Power Research Institute (EPRI)
Embassy of Canada
Energy Future Coalition
Environmental and Energy Study Institute
Fox Potomac Resources, LLC
Global Business Development Network
Goddard Claussen Public Affairs
Green Strategies Inc.
Greengate LLC
Hager Ernst LLC
Hogan Lovells
Hogwood PLLC
Holland & Knight LLP
Hunton & Williams
ICG Aeolian Energy
International Self-Powered Building Council (ISPBC)
Koeppen Elliott & Associates Limited
KRK Capital
Leaf Clean Energy Company
Lighthouse Consulting Group, LLC
Locke Lord Bissell & Liddell LLP
McGuire Woods LLP
Mintz Levin
Morse Associates
National Center for Sustainable Development
National Hydropower Association
New West Technologies
Northeast-Midwest Institute
Oerlikon Solar
Oryx Investments
Overseas Private Investment Corporation
Pathfinder Renewables LLC
Perennial Energy Consulting
Planet2025 Network
Renew & Sustain
Renewable Energy Markets Association
Resource Mobilization Advisors (RMA)
Resources for the Future
Royal Danish Embassy
Skadden Arps Slate Meagher & Flom LLP
SNR Denton LLP
Solar Electric Light Fund
Solena Group
Taylor-DeJongh
Technology Transition Corporation
TechVision21
The Stella Group
Thompson Hine LLP
Troutman Sanders LLP
United States Department of Energy - Office of Energy Efficiency & Renewable Energy (EERE)
US Green Building Council (USGBC)
Wellford Energy Advisors
Wilson Sonsini Goodrich & Rosati
Womble Carlyle Sandridge & Rice, PLLC
Wright & Talisman

Renewable Energy in Florida

Summary

Florida's attractive business climate has spurred the growth of leading renewable energy companies and has attracted investment in large renewable energy projects. As a result of the state's supportive policies, Florida is expected to continue its commercial growth and leadership in the solar PV and biomass sectors, while continuing to invest in the research and development of ocean energy and cellulosic ethanol fuel alternatives. Of note, Gainesville, Florida is home to the first municipal feed-in tariff in the United States, a tariff based largely on a model from Germany that has successfully supported significant expansion of renewables.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	71.2 MW	Biomass Power	684 MW
Concentrated Solar Thermal	75 MW	Bioethanol	-
Geothermal	-	Biodiesel	65.8 mGy
Small Hydro	-	**Totals**	830.2 MW; 65.8 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

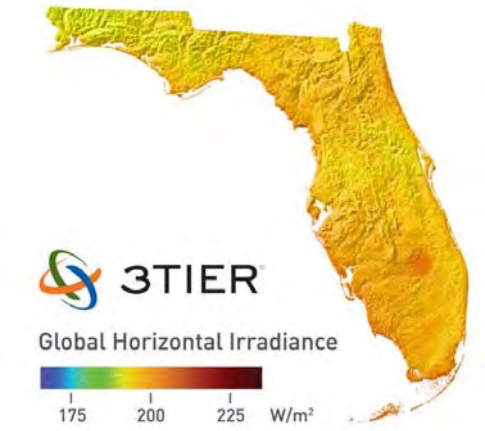
Market

- Florida is home to the second operating solar photovoltaic plant in the nation, the 25 MW Desoto Next Generation Solar Energy Center. Florida's planned solar PV projects, including the first hybrid solar thermal and combined-cycle plant, position the state to become a national leader in solar energy.
- Public and private research centers conduct innovative solar, bioenergy, and ocean energy R&D across the state. Florida's technology incubators and support infrastructure for clean energy companies help to speed clean energy innovations to market.
- As the largest producer of biomass in the country, Florida has attracted many companies working to commercialize the next -generation of biofuels with pilot projects using algae, waste, grasses and other cellulosic materials as feedstocks.
- In January 2010, a waste-to-ethanol facility in Florida received a conditional commitment from the federal government for a $75 million loan guarantee through the USDA.

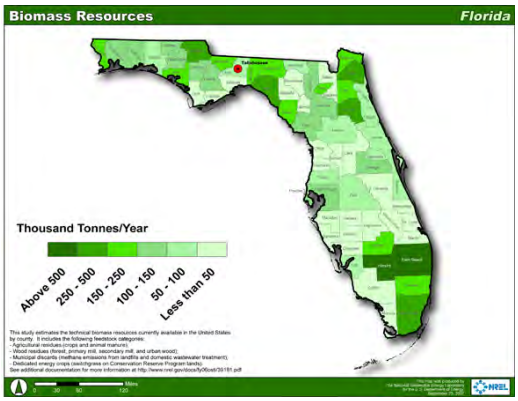
Economic Development

Employment	
Direct and Indirect Jobs, 2009	3,942
Organizations	106
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/4 deals
Venture Capital & Private Equity (Grossed up)	$16.2m, 4 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$1.6m
Competitive Grants & Tax Credits (48C & 1603)	$99.2m, 123 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Solar Resources- Florida has good solar potential throughout the state, most notably in the southern half of the state, and could develop 89,000 MW of solar.



Biomass Resources- Florida's potential for biomass is focused more in the northern part of the state, and could be derived from various sources including plant biomass, agricultural waste, animal waste, and municipal waste.

Florida

Policies

Net Metering and Interconnection: Florida's net metering and interconnection laws apply to customers of investor-owned utilities (IOUs) with systems up to 2 MW in capacity. Customer net excess generation (NEG) is carried forward to a customer's next bill at the retail rate for up to 12 months. At the end of the period, the utility pays the customer for any remaining NEG at the utility's avoided-cost rate. Interconnection rules include provisions for three tiers of net metered renewable energy systems, based on size. Municipal utilities and electric cooperatives are also required to develop standard interconnection agreements and net metering programs.

Tax Incentives: The *Solar Energy Equipment Sales Tax Exemption* exempts solar PV and thermal heating systems from the state's sales and use tax.

The *Capital Investment Tax Credit* provides an annual tax credit for 5% of eligible capital costs generated by qualifying projects for a maximum of 20 years. Solar manufacturing facilities employing over 400 may transfer tax credits earned through the program.

Local Feed-in Tariff: Florida's Gainesville Regional Utilities (GRU) launched the first city-based solar feed-in tariff program in the United States in early 2009. GRU purchases energy from qualified PV systems via a standard offer contract at predetermined rates for 20 years. In 2011, the fixed rate for the life of the contract starts at $0.30/kWh or $0.25/kWh, depending on system size and application, and declines for new projects each year.

ACORE Members in Florida

Caribbean Energy & Technology
CITEL Inc.
Complete Energy Systems
Florida International University
Gulf Coast Energy Network
IF, LLC
Intisol Group
Kitson & Partners
NextEra Energy Resources
Profit Revenue Optimization
Seminole Financial Services LLC
Solar Outdoor Lighting (SOL) Inc.
U.S. Nova Corporation

Renewable Energy in Georgia

Summary

Georgia is heavily dependent on imported conventional fuel sources for its electricity supply and is growing increasingly interested in alternative, clean energy sources that can be produced in-state. Georgia's policy support, technological innovation, resource potential, and mission to become energy independent have helped move the state's bioenergy industry to the forefront of the Southeast. However, an unfavorable policy environment is blamed for limiting the full growth potential of the state's renewable energy markets.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	0.8 MW	Biomass Power	37 MW
Concentrated Solar Thermal	-	Bioethanol	100.4 mGy
Geothermal	-	Biodiesel	79.6 mGy
Small Hydro	-	**Totals**	37.8 MW; 180 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

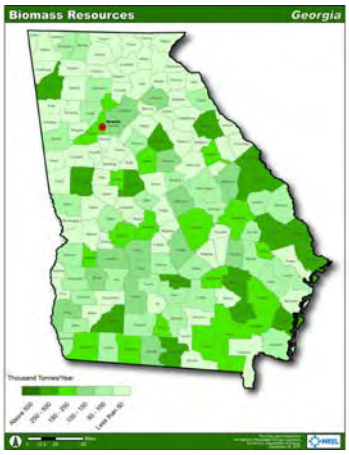
Market

- Georgia is home to a 100 million gallon per year bioethanol project that was the first large-scale bioethanol project in the southeastern U.S. Production started at the facility in October of 2008, and it remains the largest biofuel producer in Georgia.
- Georgia is home to a solar manufacturing facility that is currently expanding its capacity to handle 170 MW of power. Plans have been announced for another solar module facility that will have 800 MW of capacity after its final stage of expansion, and will bring $30 million in investment and 350 new jobs to Georgia's economy within the next five years.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	2,096
Organizations	51
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$308.0m, 2/3 deals
Venture Capital & Private Equity (Grossed up)	$75.5m, 2 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.0m
Competitive Grants & Tax Credits (48C & 1603)	$16.6m, 35 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Biomass Resources- Georgia ranks 1st in primary mill resources and 3rd in forest residue. The state has a cumulative resource of 14,804 metric tons per year.

Solar Resources- Georgia's moderate solar resource is suitable for photovoltaic applications, particularly in the southeast of the state.

Georgia

Policies

Net Metering and Interconnection: Georgia requires all utilities, including its investor-owned utility (IOU), municipal utilities, and electric cooperatives to offer net metering to their customers. Technologies qualifying under the net metering standards include solar PV, fuel cells, and wind turbines, with a capacity limit of 10 kW for residential systems and up to 100 kW for commercial systems. The aggregated capacity of net metered systems cannot exceed 0.2% of a utilities peak demand as calculated from the previous year.

In addition, Georgia requires its utilities to offer bi-directional or single-directional net metering depending on the interconnection of the customer's system to the grid. For a customer to receive bi-directional net metering the system must be connected behind the meter (on the customer's side), thereby allowing the customer to sell all net excess generation (NEG) to the utility at a pre-determined rate, which is then credited to the customer on the next billing cycle. Single-directional net metering allows customers connected ahead of the meter to sell all the electricity generated from their system. The state's IOU pays up to 17 cents per kWh for PV systems with single-directional net metering, up to an aggregated capacity of 2.5 MW.

Tax Incentives: Georgia offers a 35% personal or corporate tax credit toward the project cost of a renewable energy system or the maximum dollar amount specified for the technology, whichever amount is least.

Georgia exempts entities from the state's sales and use tax for the purchase of biomass materials used in the production of electricity, steam, or both electricity and steam.

ACORE Members in Georgia

Association of Energy Engineers
Barnes & Thornburg, LLP
Bruks Rockwood
Emory University
Georgia Institute of Technology
Hurst Boiler & Welding Company
International Applied Engineering
MAGE Solar
Morris Manning & Martin, LLP
Paragon Scientific Inc.
Southern Company
Sterling Planet
Sutherland Asbill & Brennan LLP
The Parton Group
Tula International
Turner Foundation Inc.

Renewable Energy in Hawaii

Summary

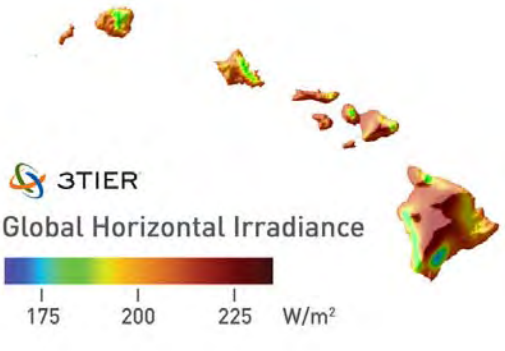
Hawaii has one of the most diverse renewable energy generation opportunities of any state, but a challenge comes in the issue of transmission to areas of high demand. Hawaii has excellent wind, solar, geothermal, biomass, hydropower, and ocean resources, and is a leader in ocean thermal research. Of note is Hawaii's Clean Energy Initiative with the U.S. Department of Energy, which aims for 70% clean energy by 2030. The initiative aims to decrease Hawaii's reliance on imported oil, which was nearly 90% of its primary energy supply in 2008. Renewable energy is expected to be a major economic driver in the state over the next decade, with roughly a billion dollars spent to support the industry in 2010.

Cumulative Renewable Energy Capacity, 2010			
Wind	63 MW	Ocean	0.04 MW
Solar Photovoltaic	26.3 MW	Biomass Power	194 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	35 MW	Biodiesel	-
Small Hydro	-	**Totals**	318.3 MW

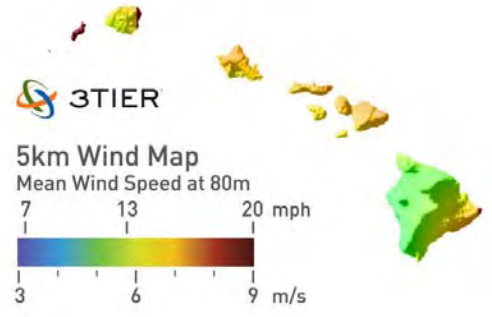
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Hawaii is in the planning stages of an undersea, inter-island cable project to transmit wind energy generated on Molokai and Lanai to be used on Oahu, where demand is greatest.
- Hawaii has been the site for almost all of the major U.S. Ocean Thermal Energy Conversion (OTEC) experiments, and the Natural Energy Laboratory of Hawaii Authority (NELHA) has been recognized as the world's foremost laboratory and test facility for OTEC and OTEC-related research. Plans for a 1 MW OTEC facility at NELHA have been announced.
- Hawaii is a national leader in solar water heating, and is responsible for one-third of all the nation's systems installed in 2008.
- In mid-2010, a Hawaiian company was awarded a $117 million federal loan guarantee for the construction of a 30 MW wind power plant with an integrated 10 MW battery storage system, one of the first projects of its kind.



Solar Resources- Hawaii has excellent solar resources for photovoltaic, thermal and solar thermal electric applications.



Wind Resources- Hawaii's wind resources. Most of the Hawaiian Islands have areas with high quality wind resources, and there is significant potential for offshore wind development.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	2,016
Organizations	28
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$18.0m, 1/5 deals
Venture Capital & Private Equity (Grossed up)	$2.0m, 1 deal
Federal Funding	
Recovery Act Funding, Department of Energy	$0.8m
Competitive Grants & Tax Credits (48C & 1603)	$12.0m, 37 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Hawaii

Policies

Renewable Energy Portfolio Standard (RPS): Hawaii's RPS, expanded in 2009, mandates investor-owned utilities (IOUs) and rural electric cooperatives to generate 40% of their net electricity sales through renewable electrical energy generation by 2030. Three intermediate targets of 10%, 15%, and 25% must be met by the last day of 2010, 2015, and 2020 respectively. The Public Utilities Commission (PUC) can establish standards that prescribe what portion of the RPS shall be met by specific types of renewable electrical energy resources.

Net Metering and Interconnection: Hawaii's net metering law applies to all utilities, with individual system capacity limits depending on the utility, ranging from 50 kW to 100 kW. All utilities have been mandated to develop a pilot program to allow net metering to a limited number of systems 100 kW to 500 kW in capacity. Net excess generation is credited to customer's next bill at retail rate, but forfeited at the end of 12-month billing cycle. The aggregate capacity limit is either 1% or 3% of the utility's peak demand, depending on the utility. Through the Hawaii Clean Energy Initiative, an agreement was made that provides that there should be no system-wide caps on net metering, and that net metering should transition towards a feed-in-tariff. Changes are being considered to meet this agreement. Hawaii has no specified system capacity limit for interconnection and has simplified, streamlined practices for smaller renewable energy systems.

Tax Incentives: Hawaii offers a 100% tax credit over five years on an equity investment in a qualified high tech business (QHTB), which includes businesses that conduct more than 50% of its activities researching energy technologies based on non-fossil sources. From January 1, 2009 to January 1, 2011, the amount of credit a taxpayer can take for investments in QHTBs is limited to 80% of the taxpayer's income liability.

The *Hawaii Energy Tax Credits* program offers income tax credits of 20% of the cost of equipment and installation of a wind system and 35% of the cost of equipment and installation of a solar thermal or PV system to both individuals and corporations. Excess credit may be carried forward until exhausted.

Rebates: Residential customers of the Hawaiian Electric Company (HECO) and its subsidiaries are eligible for a one-time rebate of $750 for installing solar water heaters. As of January 1, 2010, this rebate is not available for systems installed on new residential construction. Commercial customers may receive custom incentives of $125 per deferred kW plus $0.05 per kWh for retrofits and $0.06 per kWh for new construction.

Feed-in Tariff: Hawaii established a feed-in tariff (FiT) in September 2009 that applies to all IOUs in the state and is applied at a fixed rate for 20-year contracts. There are three tiers for rates, which range from $0.138 per kWh to $0.269 per kWh, differentiated by technology and system size. Eligible systems include solar PV, concentrating solar power, onshore wind and in-line hydropower of up to 5 MW, depending on technology. The FiT for Tiers 1 and 2 is open as of November 17, 2010 for Hawaii Electric Company (HECO) and is open as of November 24, 2010 for Hawaii Electric Light Company (HELCO) and Maui Electric Company (MECO).

Loan Program: Hawaii offers loans for agriculture and aquaculture-based PV, hydroelectric, wind power, methane generation, biodiesel, and ethanol projects. Loans may provide up to 85% of the project cost, up to a maximum of $1,500,000 for a term of up to forty years.

Public Benefits Fund (PBF): The Hawaii Energy Efficiency Program is funded by a surcharge on utility bills that is based on a percentage of total utility revenue, and affects customers of all utilities in the state, with the exception of Kauai Island Utility Cooperative (KIUC). The PBF will have a target budget of 1.5% for 2011 and 2012, and 2% for 2013 and all future years. Programs supported by the PBF include rebates for industrial energy efficiency, and solar water heaters, among others.

Other Standards: Hawaii will not issue building permits for new single-family homes that do not include a solar water heating system, with some exceptions.

ACORE Member in Hawaii

Hawaiian Electric Company

Renewable Energy in Idaho

Summary

Idaho has taken some important steps in building a healthy renewable energy market which is well-positioned for further growth. The state is rich in renewable energy resources with the Snake River and smaller river basins offering some of the greatest hydroelectric power resources in the nation. The state's historically low electricity prices have traditionally favored coal, but in 2006, the state passed a two year moratorium on new coal plants to promote development in alternative energy sources. Idaho is also home to Idaho National Laboratory which is the lead national lab in geothermal sciences and the biomass gasification process.

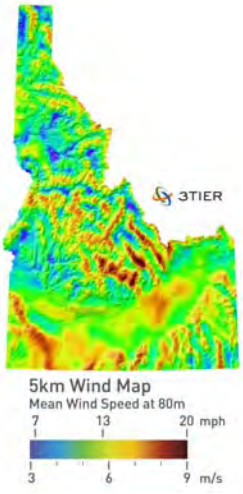
Cumulative Renewable Energy Capacity, 2010			
Wind	353 MW	Ocean	-
Solar Photovoltaic	0.2 MW	Biomass Power	8 MW
Concentrated Solar Thermal	-	Bioethanol	54 mGy
Geothermal	15.8 MW	Biodiesel	10 mGy
Small Hydro	20 MW	**Totals**	397 MW; 64 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- In 1892, the nation's first geothermal district heating system was established in Boise, and is still in use today. District heating systems continue to heat residences and businesses in the state, including the state capitol.
- Idaho is home to companies and university research institutions focused on solar, fuel cells, advanced battery technologies, kinetic energy capture, biomass, and alternative fuels. Solar and wind companies have set up manufacturing facilities in the state.
- Idaho is the 3rd largest dairy producer in the nation and is setting up anaerobic digestion projects throughout the state.
- Idaho has a number of geothermal plants in development, including the 100 MW Idatherm plant in the permitting stage in Willow Springs, Idaho.
- Nordic Windpower was awarded a conditional commitment for a $16 million federal loan guarantee to support the expansion of its wind turbine assembly plant in Pocatello, which would create 75 jobs.

Geothermal Resources- Pink indicates areas of known or potential geothermal resources.



Wind Resources- Idaho has strong winds across its southern plains suitable for utility-scale production. The American Wind Energy Association (AWEA) ranks the state 13th in the nation for potential capacity.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	970
Organizations	24
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$557m, 13/16 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$10.1m
Competitive Grants & Tax Credits (48C & 1603)	$47.5m, 20 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Idaho

Policies

Net Metering: Idaho does not have a statewide net metering policy. However, each of the state's three investor-owned utilities has a net metering tariff on file with the Idaho Public Utilities Commission. Each utility: (1) offers net metering to customers that generate electricity using solar, wind, hydropower, biomass or fuel cells; (2) limits net metering to 0.1% of its retail peak demand in a baseline year; (3) limits residential systems to 25 kilowatts; and (4) restricts any single customer from generating more than 20% of such peak production.

Tax Incentives: *Residential Alternative Energy Tax Deduction* – Idaho allows taxpayers an income tax deduction of the cost of a solar renewable-type system. Taxpayers can apply a 40% deduction in the year in which the system is installed and can also deduct 20% of the cost each year for three years thereafter. The maximum deduction in any one year is $5,000. The total maximum deduction is $20,000.

Renewable Energy Equipment Sales Tax Refund – Idaho offers a 100% sales and use tax credit to purchasers of equipment that is used to develop a facility or a project capable of generating at least 25 kW of electricity.

Property Tax Exemption – Idaho law exempts commercial wind operators and geothermal energy producers from paying taxes on real estate, fixtures or property related to their renewable energy systems. In lieu of property taxes, however, wind and geothermal energy producers must instead pay a tax of 3% of their gross energy earnings.

Loan Program: The Idaho Office of Energy Resources administers low-interest loan programs for active renewable energy projects. The interest rate is 4% with a 5-year repayment term. Loans are available for retrofit only, with the exception of some renewable resources. The maximum loan available for residential applications is $15,000. For all other applications, the maximum loan amount is $100,000.

Bond Program: Idaho legislation allows independent (non-utility) developers of renewable energy projects in the state to request financing from the Idaho Energy Resources Authority, a state bonding authority created in March 2005 by the Environment, Energy and Technology Energy Resources Authority Act. The authority was created to finance the construction of electric generation and transmission projects by electric utilities.

Solar Easements: Idaho's solar easement provisions allow for the access rights to sunlight for a solar energy device.

ACORE Member in Idaho

Portas Ventures

Renewable Energy in Illinois

Summary

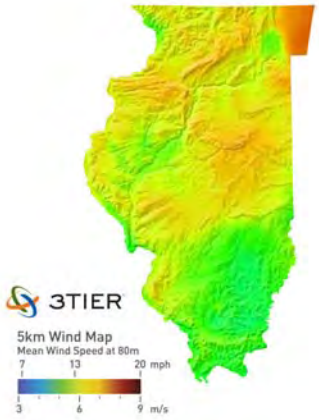
Illinois is one of the top electricity-generating states in the nation and a leading net exporter of electricity to other states. It is also home to some of the most extensive wind and biomass resources in the nation. The state has attracted large amounts of investment capital due in large part to an aggressive renewable portfolio standard (RPS) and progressive state and local incentives. Illinois' public benefit fund and state backed renewable energy bonds have aided in creating an environment of continued job growth and encouragement for its citizens and the commercial, industrial and utility sectors to invest in these growing industries.

Cumulative Renewable Energy Capacity, 2010			
Wind	2,046 MW	Ocean	-
Solar Photovoltaic	14.6 MW	Biomass Power	175 MW
Concentrated Solar Thermal	-	Bioethanol	1480 mGy
Geothermal	-	Biodiesel	131 mGy
Small Hydro	-	**Totals**	2,235.6 MW; 1,611 mGy

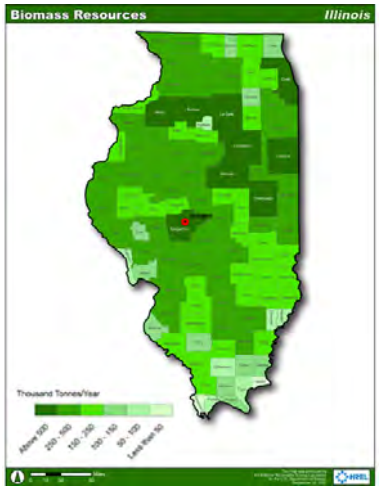
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Illinois is the third largest ethanol producing state in the nation. Bioethanol plants in Decatur and Peoria alone produce more than 550 million gallons per year.
- The state ranked second in the nation in overall biomass resources in 2007, with 28,284,000 tons available per year. Accordingly, the state's crop residue resources were 19,593,000 tons per year, with methane from landfills aggregating 974,000 tons per year in 2007. Each of these categories was ranked second, nationally.
- The wind energy supply chain in Illinois comprises of over 100 companies. Chicago is home to at least 13 global or U.S. headquarters of major wind power companies (Environmental Law & Policy Center).
- In December 2010, the state's two largest utility companies, Ameren Illinois and Commonwealth Edison (ComEd), have signed 20-year agreements to obtain a large amount of electricity from solar and wind projects in order to comply with the state's RPS requirement.



Wind Resources- The American Wind Energy Association ranks the state 16th in the nation for potential wind capacity.



Biomass Resources- Dark green indicates a strong resource potential, with the potential to produce over 500 thousand metric tons per year.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	3,488
Organizations	104
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$899.2m, 4/7 deals
Venture Capital & Private Equity (Grossed up)	$219.9m, 7 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$14.6m
Competitive Grants & Tax Credits (48C & 1603)	$721.9m, 31 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Illinois

Policies

Renewable Portfolio Standard (RPS): Illinois requires investor-owned utilities (IOUs) and retail electric suppliers to produce 25% of their energy from qualifying renewable energy sources by 2025. Qualifying renewable energy sources include solar, landfill gas, wind, biomass, hydroelectric and biodiesel facilities located within the state. As a part of the requirement, IOUs must produce 75% of their annual requirement from wind, while retail electric suppliers must produce 60% from wind. In addition, IOUs must purchase 0.5% of their power from solar sources by June 2012, a requirement which continues to ramp up to 6% by June 2015. Requirements may be met through energy bundled with renewable energy credits or through the purchase of tradable renewable energy credits.

Net Metering and Interconnection: Illinois requires IOUs to offer net metering to residential and non-residential customers for most conventional renewable energy systems. Residential customers are provided by utilities with a single bi-directional meter for systems up to 40 kW in capacity. Any net excess generation (NEG) during a billing period is credited on a kWh basis to the next billing cycle. For nonresidential customers who have a system greater than 40 kW, and less than 2 MW, a dual meter must be purchased. The customer must pay all taxes, fees and utility delivery charges. Utilities must provide net and dual metering to customers until 1% of their peak load capacity is reached. Illinois has established interconnection standards for projects up to 10 MW with four levels of review and separate standards for projects of 10 MW or larger which are not already subject to federal or regional rules.

Loan Program: Illinois business owners, nonprofit organizations and local governments may qualify for a rate reduction for loans on certain energy efficiency and renewable energy upgrades, under the Green Energy Loan program through the Illinois State Treasurer's Office, in partnership with eligible banks in the state. Loans range from $10,000 to $10 million.

Bond Program: The Illinois Finance Authority (IFA) is an issuer of tax exempt bonds and credit enhancements backed by the state of Illinois. The IFA has been authorized to issue tax-exempt bonds for renewable energy projects that provide a significant public benefit for the citizens of Illinois. Most conventional renewable energy technologies are eligible under this program with the inclusion of transmission related projects and products.

Tax Incentives: Illinois provides state and local sales tax exemptions for building materials incorporated into wind powered facilities.

Public Benefit Fund: The Renewable Energy Resources Trust Fund (RERTF), administered by the Illinois Department of Commerce and Economic Opportunity (DCEO), was established to disperse grants, loans and other incentives to renewable energy projects. Funding for the program is subsidized through surcharges on all IOU customers' bills, and on municipal or cooperative utilities that voluntarily participate in the program. RERTF is expected to collect a total of $100 million from its inception in 1998 to 2015, which can be used for most conventional renewable energy projects, except waste-to-energy.

ACORE Members in Illinois

Acciona Energy North America Corp.
ACG Chicago
Alternative Energy Capital
Broadwind Energy
Dayaway Careers LLC
Daycholah Capital
Enviro-Burn
Environmental Law and Policy Center
General Energy Corporation
INEOS Bio
Lincoln Renewable Energy LLC
Madison Dearborn Partners
Marathon Capital, LLC
Power Equipment Associates
Principia College
Recycled Energy Development
RSMR Global Resources
Suzlon Energy
United Financial of Illinois
US Mainstream Renewable Power

Renewable Energy in Indiana

Summary

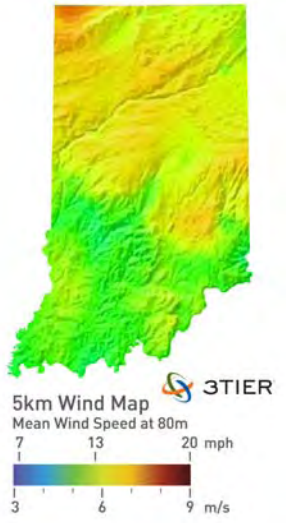
The Hoosier state is blessed like many of its Midwestern neighbors with plentiful wind and biomass resources, but coal is solely responsible for 95% of the state's electricity supply. Due to its lack of a statewide renewable portfolio standard, Indiana has only been able to attract a fraction of the investment in renewable energy projects and manufacturing facilities seen by neighboring states such as Michigan. Nevertheless, Indiana has numerous large-scale wind farms in operation and is ranked fifth in the nation in ethanol production.

Cumulative Renewable Energy Capacity, 2010			
Wind	1,339 MW	Ocean	-
Solar Photovoltaic	0.4 MW	Biomass Power	5 MW
Concentrated Solar Thermal	-	Bioethanol	998 mGy
Geothermal	-	Biodiesel	115.5 mGy
Small Hydro	22 MW	**Totals**	1,366.4 MW; 1,113.5 mGy

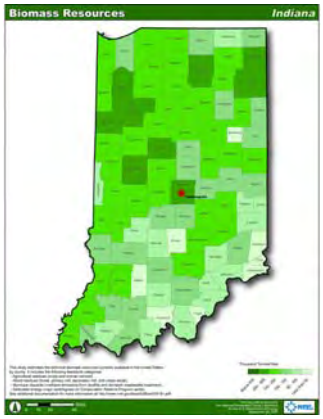
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Indiana is planning at least two commercial-scale next generation ethanol plants, which would produce fuel from municipal and industrial waste. The project in Schneider is expected to open in late 2011.
- Indiana's wind industry has grown from virtually nonexistent in 2007 to over 1 GW in three years. It is currently ranked 11th in installed capacity.
- The state is home to one of the largest operational wind farms in the nation. Located in the Fowler Ridge area near Benton, IN the two-phase project has a nameplate capacity of 600 MW.
- More than 10 companies in Indiana manufacture wind turbine components and employ more than 1,000 people, providing a sustainable economic benefit to the state.
- Abound Solar Manufacturing, LLC was awarded a conditional commitment for a $400 million loan guarantee to manufacture state-of-the-art thin-film solar panels at two facilities, one of which will be located in Tipton, Indiana.



Wind Resources- Indiana has the potential to derive 40,000 MW of energy from its wind resources.



Biomass Resources- Indiana's biomass resource is concentrated in the farming areas in the northern region of the state. The biomass reserves from this agricultural area can be harvested for heat, electricity, and advanced biofuels.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	2,286
Organizations	33
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$30.0m, 1/5 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.0m
Competitive Grants & Tax Credits (48C & 1603)	$363.6m, 10 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Indiana

Policies

Net Metering and Interconnection: The Indiana Utility Regulatory Commission (IURC) requires the state's investor-owned utilities (IOUs) to offer net metering to residential customers and K-12 schools. Eligible systems include solar, wind and hydroelectric projects with a maximum capacity of 10 kW. The aggregate amount of net metering capacity is limited to 0.1% of its most recent summer peak load. Net excess generation (NEG) is credited to the customer's next monthly bill indefinitely, with any unused credit reverting to the utility if the customer ceases the use of net metering. Utilities are required to assume all costs and fees associated with the installation, and customers can elect a single or dual meter configuration. Indiana's interconnection rules require the state's investor-owned utilities to provide three levels of interconnection to customer-generators: up to 10 kW, up to 2 MW, and larger than 2 MW.

Grants: The Indiana Solar Thermal Grant Program offers public institutions, nonprofit organizations and commercial entities that use over 100,000 gallons of hot water per year a grant that covers 25% of the cost of solar water heat, up to $25,000.

Tax Incentives: Indiana offers a property tax exemption for the entire cost of a renewable energy system and the affiliated equipment that is unique to the system, which is allowed every year that an eligible system is generating energy.

ACORE Member in Indiana

Innovative Energy Solutions

Renewable Energy in Iowa

Summary

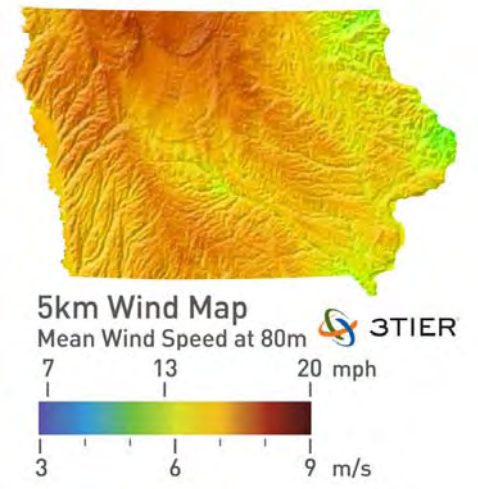
Iowa is a leading state in the production of renewable energy from wind, ethanol and biodiesel, and has seen significant renewable energy growth in recent years. The state's strong manufacturing and agricultural sectors coupled with its early policy support have created an attractive business climate for companies interested in researching, developing and manufacturing renewable energy technologies in the state. With continued support, Iowa will have the opportunity to increase its share of the renewable energy market and serve as a national model for renewable energy production.

Cumulative Renewable Energy Capacity, 2010			
Wind	3,675 MW	Ocean	-
Solar Photovoltaic	-	Biomass Power	24 MW
Concentrated Solar Thermal	-	Bioethanol	3,595 mGy
Geothermal	-	Biodiesel	313.7 mGy
Small Hydro	2 MW	**Totals**	3,701 MW; 3,908.7 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Iowa is the leading producer of ethanol in the nation, accounting for over 25% of U.S. ethanol production, and is second in the nation in the production of biodiesel. One of the first commercial-scale cellulosic ethanol facilities in the nation, a 25 mGy expansion to an existing ethanol plant, is being developed in Emmetsburg, Iowa. It is projected to have a nearly $38 billion impact on the state.
- Iowa is second in the U.S. in installed wind capacity. Iowa installed 879 MW in 2009 alone, becoming the first state to generate more than 10% (currently 20%) of its total generated electricity from wind power.
- Iowa's active wind market and strong manufacturing base has attracted seven international wind manufacturing companies to the state and has encouraged the growth of locally-owned small businesses.

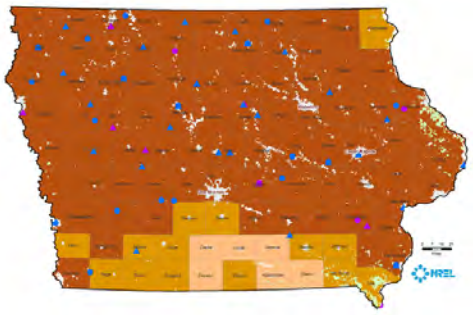


Wind Resource- Iowa's greatest wind resources are located in the northwestern part of the state, and along the Loess Mountain Range. The American Wind Energy Association ranks the state 10th in the nation for potential capacity.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	3,780
Organizations	72
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$468.0m, 3/7 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.0m
Competitive Grants & Tax Credits (48C & 1603)	$290.9m, 50 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Biomass Resource- Iowa's strong agricultural base offers great potential for alternative fuels (ethanol and biodiesel) and biomass energy production. Highest possible biomass resources (dark brown) are located in all but a few counties.

Iowa

Policies

Alternative Energy Law (AEL): Iowa requires its two investor-owned utilities (IOUs) to own or contract for a combined total of 105 MW of renewable energy generating capacity and associated energy production. The utilities are currently fulfilling their obligation almost entirely from wind power production, with a small amount of biogas production. Iowa also has a secondary, voluntary goal of reaching 1,000 MW of wind generating capacity by 2010.

Net Metering and Interconnection: Though not explicitly authorized, the Iowa Utilities Board (IUB) has implicit authority to mandate net metering for customers of Iowa's two investor-owned utilities. There is no explicit limit on either the size of a net metered system or on total enrollment in the IUB's rules; however, separate rule waivers have allowed the utilities to limit individual systems to 500 kW. Net excess generation is credited indefinitely to the customer's next bill. Iowa's interconnection rules were adopted in May 2010 and mandate that, for all facilities not subject to Federal Energy Regulatory Commission (FERC) regulation, the standards apply to distributed generation facilities of up to 10 MW. For facilities larger than 10 MW, the standards are used as a starting point. Iowa set four levels of review for interconnection requests based on system capacity, among other things.

Tax Incentives:

- Under Iowa Code § 476C, personal and corporate production tax credits of 1.5¢ per kilowatt-hour are available for energy generated and sold by eligible wind energy generators and other renewable energy facilities of above 750 kW.
- Under Iowa Code § 476B, personal and corporate production tax credits of 1.0¢ per kilowatt-hour are available for electricity generated by eligible wind energy facilities of below 2.5 MW, including electricity used for on-site consumption.
- Real and personal property used to decompose waste or utilize it for energy is exempt from property taxation for 10 years.
- All wind and solar equipment and installation costs are exempt from the state sales tax.
- The market value added to a property by a solar or wind energy system is exempt from the state's property tax for five full assessment years.
- In lieu of a property tax on generation facilities, Iowa imposes a replacement generation tax of 0.06 cent per kWh on energy generated from landfill gas, wind and hydroelectric systems.

State Loan Program: The Alternate Energy Revolving Loan Program (AERLP) is administered by the Iowa Energy Center and provides loan funds to individuals and organizations that seek to build renewable energy production facilities in Iowa. The AERLP provides 50% of the total loan at 0% interest, up to a maximum of $1 million for up to 20 years. The remainder of the loan is provided by a lender at market rate. As of March 2009, the AERLP had provided loans of more than $11.4 million in support of 88 renewable energy projects.

Solar Access Laws: Iowa's solar access easement provision grants municipalities authority over access to sunlight in order to operate a solar energy system. Iowa code also grants municipalities the right to issue ordinances prohibiting subdivisions from including restrictive covenants that limit the use of solar collectors.

ACORE Member in Iowa

University of Iowa

Renewable Energy in Kansas

Summary

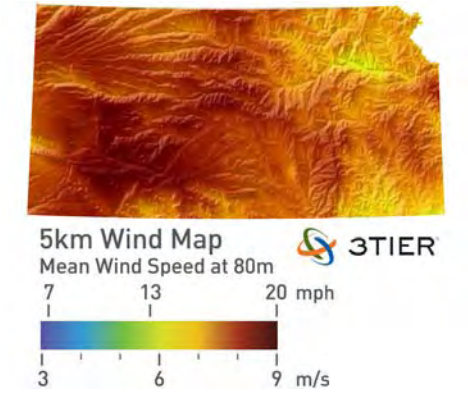
Kansas has the third most promising wind resource potential in the country and is one of the top ten states in installed wind capacity. In addition, Kansas is home to multiple bioethanol plants and is ranked eighth in the nation in bioethanol production. The state passed a renewable energy portfolio standard in May 2009 and provides numerous tax incentives and loans to promote large and small scale renewable energy generation and to attract renewable energy businesses into the state. The wind industry in Kansas is expanding, and is poised to become a center for the manufacture of turbines and generation of wind energy in the coming years.

Cumulative Renewable Energy Capacity, 2010			
Wind	1,074 MW	Ocean	-
Solar Photovoltaic	-	Biomass Power	13 MW
Concentrated Solar Thermal	-	Bioethanol	491.5 mGy
Geothermal	-	Biodiesel	-
Small Hydro	-	**Totals**	1,087 MW; 491.5 mGy

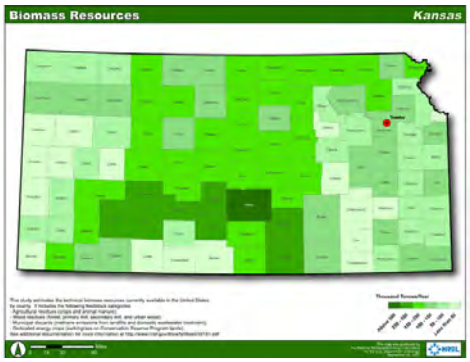
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- The nation's first commercial-scale hybrid cellulosic ethanol facility and traditional grain ethanol plant is being developed in Hugoton, a $550 million facility which would produce 100 million gallons of ethanol annually using corn stover, wheat straw and switchgrass as feedstock. The project is currently applying for a federal loan guarantee for support, and is expected to become operational in 2013.
- In the period 2008-2009, Kansas' wind industry more than doubled, adding over 660 MW of wind energy. Growth was less aggressive in 2010.
- The Siemens wind turbine manufacturing plant in Hutchinson, which opened in late 2010, represents the first major original equipment manufacturer (OEM) facility in Kansas. The 300,000 square foot facility is expected to support more than 400 jobs at full capacity. Plans have also been announced for at least one other wind manufacturing plant in Kansas.



Wind Resources- The American Wind Energy Association (AWEA) ranks the state third in the nation in potential capacity, and has estimated that Kansas has 120 GW of potential wind resources.



Biomass Resources- Kansas ranks fifth in switchgrass resources on Conservation Reserve Program (CRP) lands resources with 6,274 thousand metric tons per year in the nation. The state also ranks sixth in crop residue with 3,556 thousand metric tons per year in the nation.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,204
Organizations	43
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$23.3m, 1/1 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$2.4m
Competitive Grants & Tax Credits (48C & 1603)	$1.5m, 8 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Kansas

Policies

Renewable Portfolio Standard (RPS): Kansas requires investor-owned utilities (IOUs) and some cooperative utilities to either generate or purchase 20% of their peak demand capacity by 2020 and onward from qualifying renewable energy technologies, including solar (thermal and electric), landfill gas, biomass, wind, hydroelectric and fuel cells using renewable fuels. Unlike in many other states, Kansas' standard is based on generation capacity rather than on retail electric sales. The utilities are allowed to purchase only a certain percentage of Renewable Energy Credits (RECs) in order to comply with the RPS. Utilities may also purchase capacity from other renewable energy producers for compliance.

Net Metering and Interconnection: Kansas requires IOUs to offer its customers net metering for systems up to 25 kW for residential customers and 200 kW for non-residential customers. In addition, utilities are required to provide their customers bi-directional net meters at no cost. Any net excess generation (NEG) will be rolled over to the next billing cycle at the full retail rate, with NEG remaining in the customer's account at the end of the calendar year granted to the utility. The program is offered to customers until the aggregated net metered capacity reaches 1% of the utilities peak demand as calculated from the previous year. The utilities will maintain ownership of RECs created as part of the net metering program. General interconnection standards apply to systems that generate electricity using conventional renewable energy technologies, to residential customers with net metered systems of 25 kW or less, and for non-residential customers with net metered systems of 200 kW or less.

Tax Incentives: Kansas provides a personal and corporate investment tax credit for renewable energy systems owned by commercial, industrial or agricultural entities and located on their property. Electricity produced must either be used on-site and/or utilized to displace current or future energy usage. The credit is in the amount of 10% for the first $50 million invested in the project, and 5% for expenditures thereafter. The credit is claimed in 10 equal annual installments and must be operational for all ten years. Systems must be operational by December 2011.

Companies manufacturing solar or wind components are eligible for up to $5 million in financing from the Kansas Department of Commerce. To be eligible, the project must hire at least 200 new employees within 5 years and pay them an average salary of $32,500 per employee. In addition the project must create at least $30 million of new investment in Kansas.

Kansas offers a 100 % property tax exemption for most conventional renewable energy systems that are used primarily to produce electricity. In addition, any property used to treat, refine, or transport landfill gas is eligible to this exemption.

Loans: Kansas offers a revolving loan program to homeowners for up to $20,000 and to small business for up to $30,000 to help pay for renewable energy systems issued through the customer's utility or a partner lender. Participants must pay for an energy audit to identify the best energy systems appropriate for their property and have up to 15 years to repay the loan.

ACORE Members in Kansas

Black & Veatch Corporation
EFL Associate, Inc.
Greater Topeka Chamber of Commerce/GO Topeka
ICM Inc.

Renewable Energy in Kentucky

Summary

As the third largest producer of coal and with some of the lowest electricity prices in the nation, Kentucky remains largely dependent on conventional fuel sources to generate electricity. The state has identified bioenergy, wind, solar, hydro, and geothermal energy as potential new energy sources in its energy plan, and is pushing policy and incentives that would help move the renewable energy industry forward. For the time being, however, utility-scale growth is limited to just a few planned biomass power and fuels facilities, with no announced plans to develop the state's other untapped, available renewable energy resources.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	-	Biomass Power	9 MW
Concentrated Solar Thermal	-	Bioethanol	35.4 mGy
Geothermal	-	Biodiesel	52 mGy
Small Hydro	-	**Totals**	9 MW; 87.4 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

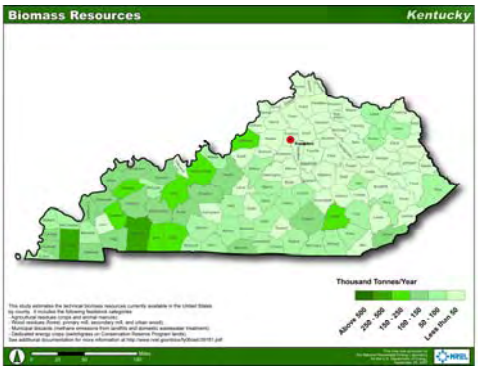
Market

- Kentucky is home to two operating bioethanol plants and two operating biodiesel plants which use agricultural residue and industrial waste as feedstocks.
- Biomass power production in the state comes entirely from four landfill energy projects.

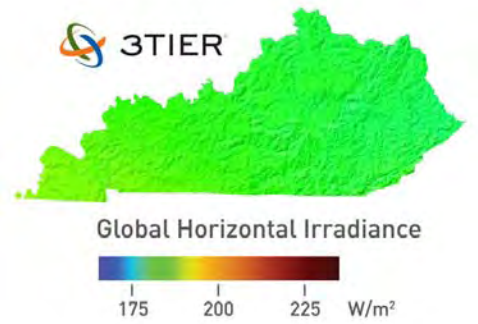
Economic Development

Employment	
Direct and Indirect Jobs, 2009	292
Organizations	14
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/0 deals
Venture Capital & Private Equity (Grossed up)	$1.0m, 1 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.0m
Competitive Grants & Tax Credits (48C & 1603)	$0.0m, 2 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Biomass Resources- Utilizing Kentucky's 3,384 thousand metric tons per year of forest residue, Kentucky has the potential to displace 2.3% of its energy in its residential and commercial sector.



Solar Resources- Kentucky's moderate solar resource ranges between 180 and 190 watts per square meter.

Kentucky

Policies

Net Metering and Interconnection: Kentucky requires investor-owned utilities (IOUs), with the exception of Tennessee Valley Authority (TVA), and rural electric cooperatives to offer single bi-directional net metering to its customers, for most conventional renewable energy systems, up to 30 kilowatts (kW) in capacity. Any net excess generation (NEG) is credited on the customer's next billing cycle at the utility's retail rate, and carries forward indefinitely. Customers retain ownership to all renewable energy credits (RECs) created from the generation of their systems. Once the aggregate amount of capacity for net metered systems reaches 1% of a utility's single hour peak load, the obligation to offer net metering becomes limited. Kentucky requires IOUs and electric cooperatives operating in Kentucky, with the exception of TVA, to establish a two-tiered system for interconnection. Net metering customers are required to follow the first tier of the interconnection standard.

Grant Program: The Office of Agriculture Policy developed the On-Farm Efficiency & Production Incentives Program with funding from the 2009 American Recovery and Reinvestment Act (ARRA). Incentives are available for on-farm biomass energy crop production and equipment for on-farm energy production for 25% of project costs, up to $10,000. Requests for funding must have been made before December 15, 2010.

Tax Incentives: Kentucky offers a personal and corporate 30% state income tax credits for solar, wind, and geothermal systems that meet the program's guidelines. Systems must be erected on commercial and/or single or multi-family residences. Individuals and corporations installing PV systems can elect to take a $3.00 per watt tax credit in lieu of the 30% tax credit. Credit is calculated by the system's nameplate capacity. The total cap for single residential homes installing wind or solar systems is $500, and $1,000 for multi-family or commercial properties.

Under Kentucky's Incentives for Energy Independence Act, companies that build or renovate renewable energy facilities are eligible for (1) a sales tax incentive of up to 100% on Kentucky's sales and use tax paid on materials, machinery and equipment used to construct the project, (2) a wage assessment of up to 4% for direct and indirect employees and (3) an income or limited liability entity tax incentive of up to 100%. Solar power systems must generate at least 50 kW of electricity, while other eligible renewable energy systems must generate at least 1 MW of electricity and be sold to an unrelated party. There is a $1 million minimum capital expenditure floor, and the aggregate amount of all credits taken must not exceed 50% of the capital investment.

Renewable Energy in Louisiana

Summary

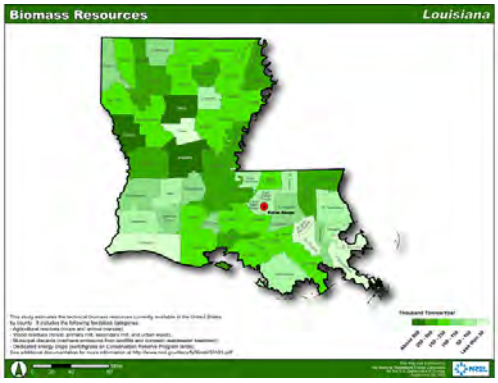
Louisiana has viable resources for solar and biomass which, combined with its tax incentives and supportive net metering program, provide opportunities for renewable energy expansion. Louisiana has also introduced a number of clean energy bills and has made progress on developing a renewable portfolio standard. In order to further diversify its energy portfolio, the state has authorized analysis of its offshore wind resources to determine feasibility of installing offshore turbines.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	0.2 MW	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	1.5 mGy
Geothermal	-	Biodiesel	75 mGy
Small Hydro	-	**Totals**	0.2 MW; 76.5 mGy

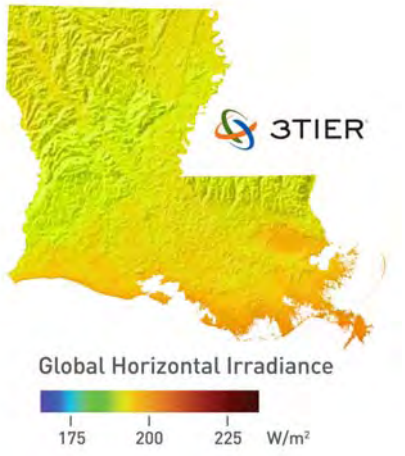
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Louisiana is home to operating demonstration-scale and pilot cellulosic ethanol projects that are used to test different feedstocks for process optimization, including energy crops, wood waste, and sugarcane bagasse. The demonstration plant was funded in part by the U.S. Department of Energy.
- Louisiana announced plans for a $124 million wood pellet plant that would produce 450,000 metric tons per year of wood pellets to be used as bioenergy in Europe. The facility is projected to create up to 100 new direct jobs and 273 new indirect jobs and is also projected to generate $12.9 million in new, state tax revenue and $9.6 million in new, local tax revenue over the next 10 years (Louisiana Economic Development).
- In September 2010, a Cameron Parish-based company received a $5 million grant from the U.S. Department of Energy to develop geothermal technologies to cut carbon pollution from electricity generation.



Biomass Resources- Dark green indicates a strong resource potential. Louisiana ranks third in forest residue with 3,384 metric tons per year and ninth in primary mill resources with 3,577 metric tons per year. The state has a cumulative resource of 143,054 metric tons per year.



Solar Resources- Louisiana has moderate solar resources and potential to produce 4,500 to 5,500 Whr per square meter using photovoltaics, and 3,500 to 4,500 Whr per square meter for concentrated solar (NREL).

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,331
Organizations	20
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/0 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$5.2m
Competitive Grants & Tax Credits (48C & 1603)	$0.2m, 3 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Louisiana

Policies

Net Metering and Interconnection: Louisiana requires all utilities to offer net metering and interconnection to customers generating electricity from solar, wind, hydropower, geothermal or biomass systems. Residential systems must not exceed 25 kW and commercial systems no more than 300 kW. Utilities must pay for the cost of the meter and any net excess generation (NEG) is credited to the following month's bill indefinitely. There are fees associated with interconnection and the installation of the meter to measure the flow of electricity in both directions. The Public Service Commission does not regulate municipal utilities, but they are required to develop their own programs based on the statute.

Tax Incentives: *Personal Tax Credit* – Louisiana offers tax credits equal to 50% of the first $25,000 of the cost of solar (thermal and electric) and wind energy systems installed at a residence or rental apartment complex. There is a maximum incentive of $12,500 per installed system. The credit may be applied to personal, corporate, or franchise taxes, depending on the purchaser of the system.

Property Tax Exemption – Any solar energy equipment attached to a house for heating and cooling, or for hot water is considered personal property and therefore exempt from ad valorem taxation.

Loan Program: The Louisiana Department of Natural Resources (DNR) offers five-year loans for homeowners to improve the energy efficiency of their existing home, including the installation of solar PV, solar thermal and geothermal heat pumps. The DNR subsidizes half of the financing at a low interest rate to participating lenders, up to a maximum DNR subsidy of $6,000.

Solar Rights: Louisiana law prohibits entities from unreasonably restricting a property owner from installing a solar collector.

ACORE Members in Louisiana

AMCREF Community Capital, LLC
Cleco Corp
Guascor

Renewable Energy in Maine

Summary

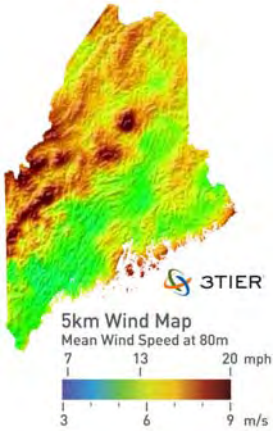
As New England's largest renewable energy producer, Maine is committed to developing its regionally strong bioenergy, on and offshore wind, and ocean energy resources into strong, nationally-recognized markets. It is doing so through sustained research and development, supportive policy mechanisms, and eased permitting requirements. Of note are Maine's actions to become a leader in offshore renewable energy development, which would benefit the state by bringing hundreds of megawatts of clean energy to meet mainland demand as well as meeting the demand of Maine's numerous offshore islands.

Cumulative Renewable Energy Capacity, 2010			
Wind	266 MW	Ocean	0.06 MW
Solar Photovoltaic	0.3 MW	Biomass Power	197 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	0.3 mGy
Small Hydro	49 MW	**Totals**	512.4 MW; 0.3 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Maine is committed to transforming its traditional logging industry into a bioenergy industry. Maine has more than 10 biomass generation facilities which use wood, wood waste, and municipal solid waste as feedstocks. It is also home to one biodiesel plant.
- Maine is seeking to develop up to 5,000 MW of offshore generating capacity by 2050 and has called for initial proposals for 30 MW. Currently, Maine is home to the largest ocean energy device installed in the U.S., a 60 kW grid-compatible pilot system.
- Research institutions throughout the state are committed to developing the offshore wind and ocean energy sectors. The U.S. Department of Energy recently awarded the University of Maine $20 million to study and test deepwater offshore wind turbines.

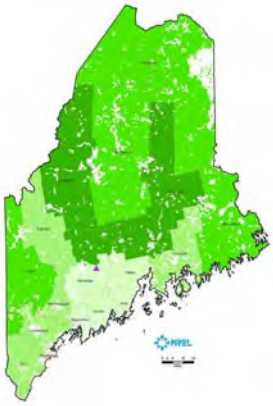


Wind Resources- The American Wind Energy Association ranks Maine 19th in potential power capacity. The state has the highest concentration of class 5 and above wind in the northeastern U.S., as identified by NREL.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	2,467
Organizations	25
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$260.0m, 5/7 deals
Venture Capital & Private Equity (Grossed up)	$6.1m, 2 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$8.1m
Competitive Grants & Tax Credits (48C & 1603)	$108.0m, 17 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Biomass Resources- Dark green indicates excellent potential from forestry residues. Roughly 70% of the state has greater than 250,000 metric tons per year per country of forest and primary mill residues.

Maine

Policies

Renewable Portfolio Standard: Maine's Renewable Resource Portfolio requirement requires investor-owned utilities (IOUs) and retail electric suppliers to supply at least 40% of their total retail electric sales from renewable energy and certain energy efficiency resources by 2017, of which 10% must be from "Class I resources" constructed after 2005 (which, unlike "Class II resources, does not include municipal solid waste facilities, combined heat and power (CHP) systems, and hydropower facilities that do not pass fish passage requirements). To qualify, electricity must be generated by a facility no greater than 100 MW (excluding new wind, which may exceed this requirement), and come from fuel cells, tidal power, solar arrays and installations, wind power, geothermal power, hydropower, biomass power, or generators fueled by municipal solid waste in conjunction with recycling. Additionally, Maine passed a law to have 8,000 MW of wind power by 2030 (with an interim goal of 2,000 MW by 2015), 5,000 MW of which must come from coastal waters or offshore.

Utilities may pay an alternative compliance payment (ACP) instead of meeting portfolio requirements. ACP income supports the Renewable Resource Fund, the state's public benefits fund, and was set at $60.93 per MWh in 2010.

Net Metering and Interconnection: All of Maine's electric utilities must offer net metering for individual customers. IOUs must offer net metering to eligible facilities with capacity limits up to 660 kW, while municipal utilities and electric cooperatives must provide net metering to customer-generators up to 100 kW. Net excess generation is credited to the following month for up to 12 months, at which point any remainder is granted to the utility. Shared net metering is allowed if customers share the costs of the facility and the resulting benefits. Interconnection standards apply to all transmission and distribution utilities in the state and is based on the Interstate Renewable Energy Council's model interconnection standards. There are four levels of review, depending on system size and use. No size limit is specified.

Rebate Program: Through the Solar and Wind Energy Rebate program, Maine offers a $2 per watt rebate for an owner or tenant who purchases a PV system, with a maximum of $2,000 awarded. Owners of solar-thermal systems qualify for a rebate based on the efficiency of the building. For residential wind energy systems, the rebate is $500 per 500 W, up to 2,000 W. Non-residential systems are eligible for a $500 rebate per 500 W up to 4,000 W. The program is funded through an assessment on the state's utilities and with money allocated from the American Recovery and Reinvestment Act (ARRA), for a total of $1 million annually.

Tax Incentive: Maine offers a 100% sales and use tax refund for qualified community wind generators under 10 MW.

Public Benefit Fund: Maine's Renewable Resource Fund is a voluntary program allowing customers to contribute to a fund, via their monthly electric bill, that supports renewable energy projects. The fund supports grants for renewable energy research and development, and demonstration projects.

Production Incentive: The community-based Renewable Energy Pilot Program offers incentives for certain locally-owned renewable energy systems. Up to 50 MW of generating capacity is permitted under the program, and individual participants may not exceed 10 MW.

Offshore Renewable Energy Development Support: Maine and Nova Scotia signed an MOU in July 2010 to work cooperatively on tidal and offshore wind development efforts by furthering academic research and establishing a formal council.

ACORE Members in Maine

Biomass Power Association
College of the Atlantic
International WoodFuels LLC

Renewable Energy in Maryland

Summary

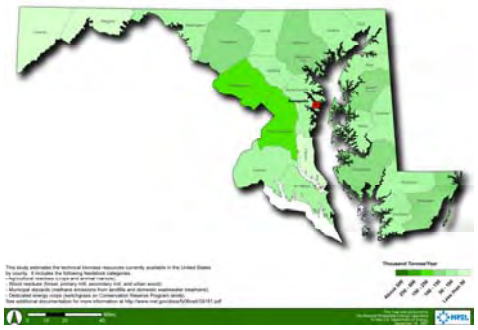
Maryland is seeking to diversify its electricity portfolio through increased wind and solar power generation, which show strong potential in the state. With its feasible solar generation requirement and the capability of meeting two-thirds of the state's total energy demand through offshore wind, Maryland is positioned to meet its renewable portfolio standard of 20% by 2022. Maryland also boasts numerous tax incentives and rebates at the state and local levels designed to increase residential and commercial-sited renewable energy generation.

Cumulative Renewable Energy Capacity, 2010			
Wind	70 MW	Ocean	-
Solar Photovoltaic	8.7 MW	Biomass Power	126 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	8 mGy
Small Hydro	19 MW	**Totals**	223.7 MW; 8 mGy

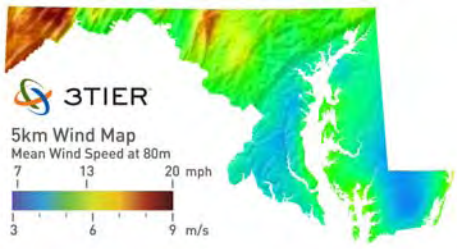
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- As a member of the Atlantic Offshore Wind Consortium, a group of states working with the U.S. Department of the Interior to develop offshore wind off the Atlantic coast, and the developer of a regional offshore wind memorandum of understanding with neighboring states, Maryland has shown great initiative in facilitating developer interest in offshore wind projects.
- Through the Generating Clean Horizons program, the state of Maryland and the University of Maryland have signed long-term power purchase agreements for four large-scale solar and onshore wind energy projects.



Biomass Resources- The brightest green indicates resources of 150-250 thousand metric tons per year. Maryland has 2,131 thousand metric tons per year of biomass resources available.



Wind Resources- The offshore wind resources in Maryland can provide up to two-thirds, 3,900 MW, of the state's energy.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	4,586
Organizations	39
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$152.4m, 3/7 deals
Venture Capital & Private Equity (Grossed up)	$0.8m, 1 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$1.6m
Competitive Grants & Tax Credits (48C & 1603)	$2.8m, 16 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Maryland

Policies

Renewable Portfolio Standard (RPS): Maryland requires all electricity suppliers to use renewable energy sources to generate a minimum portion of their retail sales. By the end of 2022, retail sales must reach a level of 18% from Tier 1 resources (which include most traditional renewable energy sources), and an additional 2% from solar energy. Tier 2 resources (which include large hydroelectric power and waste-to-energy facilities) began at 2.5% in 2006 and decrease to 0% by the end of 2018. Electricity suppliers purchasing solar renewable energy credits (SRECs) directly from a solar energy system owner must enter into a contract for at least 15 years. Utilities that fail to meet compliance standards must pay a price per kWh which corresponds to the category the supplier fails to meet, those funds going into the Maryland Strategic Energy Investment Fund.

Net Metering and Interconnection: Maryland requires all utilities to offer net metering to their customers until statewide aggregate capacity of all net metered systems reaches 1,500 MW. Most conventional renewable energy systems are eligible as long as system capacity is under 2 MW, except micro-CHP resources which are limited to 30 kilowatts (kW). Net excess generation (NEG) is continually carried over to the customer's next bill at the utilities retail rate, until consumption eliminates NEG, or until the customer requests compensation for NEG at the end of a 12-month billing cycle. Maryland's rules for interconnection include provisions for four levels of interconnection for systems up to 10 MW, based on the system size.

Rebates and Grants: Maryland offers rebates on geothermal heat pumps at $500 per ton; for mid-sized solar photovoltaic systems at $500 per kW; for solar water heating systems at 15% installed cost; and for mid-sized wind energy systems at $1,500 per kW. Geothermal rebates are offered for up to $2,000 and $7,000 for residential and non-residential, respectively, with a program budget of $3.2 million for FY 2011. PV is allotted up to $50,000 and solar hot water up to $25,000, for non-residential systems 20 kW-100 kW and larger than 100 sq. feet, respectively, with a program budget of $500,000 for FY 2011. Wind rebates are offered for up to $75,000 for non-residential systems 20 kW-200 kW, with an annual program budget of $500,000 for FY 2011.

Maryland's Windswept Program offers rebates for wind systems 1 kW (or 1.5 kW for non-residential) to 100 kW of $2,800 per kW for the first 5 kW and $2,100 per each subsequent kW. The maximum incentive is the lesser of $20,000 or 50% of the net installation cost. The budget for FY 2011 is $3.2 million.

Maryland's solar energy grant program offers rebates for residential and non-residential solar PV (up to 20 kW) and thermal systems. Solar PV grants are awarded at $0.50 per W and solar water heating grants are awarded at 20% of the installed cost, with maximum incentives of $10,000 and $1,500 respectively. The budget for FY 2011 is $3.2 million.

Tax Incentives: Maryland offers a broad array of tax incentives to benefit most renewable energy technologies, which include: a full sales and use tax exemption for solar, wind, wood heating and geothermal heat pump equipment; a full property tax exemption for solar and wind systems; and a personal and corporate income tax credit for bio-heating oil of $0.03 per gallon. The state also provides a personal and corporate income tax credit of $0.0085 per kWh for electricity generated from most renewable energy systems, and has a maximum incentive of $2.5 million of total credits during a five-year period. The credit is dropped to 0.5 cents per kWh for systems that utilize co-firing.

Loans: The Jane E. Lawton Conservation Loan Program (JELLP) provides loans to install cost-effective renewable energy systems. The revolving loan program allots up to $500,000 per loan at an average 2.5% interest (with a payback of 10 years or less) for non-residential renewable energy systems, with a $2.2 million budget for 2011.

ACORE Members in Maryland

ADAGE
Alliance for Green Heat
Bechtel Power Corporation- New Technologies and Renewables
Castlebay Group LLC
Clean Fuels Development
EDF Inc.
Frostburg State University
Grant Capital Management
Hannon Armstrong
International Economic and Ecological Services (I-Eco-S, Inc.)
Lockheed Martin
Maryland Clean Energy Center
Maryland-District of Columbia-Virginia Solar Energy Industries Association
P/V Enterprises
Reznick Group, P.C.
Standard Solar
SunEdison LLC
Think Energy, Inc
US EcoGen LLC
Windcurrent

Renewable Energy in Massachusetts

Summary

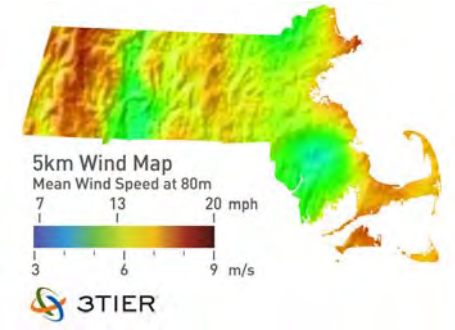
With a combination of steady investments from the private sector and broad and diverse policy measures such as the new target to cut greenhouse gas emissions to 25% below 1990 levels by 2020, Massachusetts has become an early leader in clean energy research and innovation. The state is host to multiple renewable energy resources, including offshore wind, wave, and tidal power. However, siting concerns, unclear permitting requirements, and unclear interconnection standards pose barriers to utility-scale renewable energy projects. By further leveraging its scientific expertise, academic and innovation resources, highly educated workforce, and institutional and financial services assets, Massachusetts can continue to advance its renewable energy economy.

Cumulative Renewable Energy Capacity, 2010			
Wind	18 MW	Ocean	-
Solar Photovoltaic	20.8 MW	Biomass Power	306 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	-
Small Hydro	2 MW	**Totals**	346.8 MW

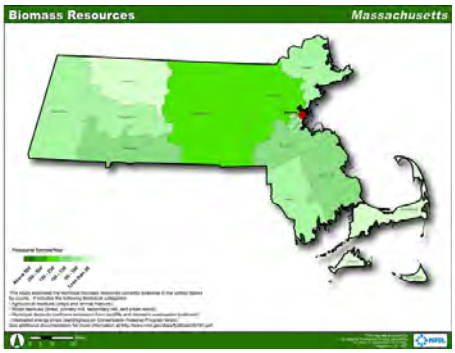
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Massachusetts is a global hub for the research and innovation of high-tech renewable energy technologies. R&D organizations located in the state, along with leading university researchers, are engaged in basic energy sciences research, next-generation project development, and other activities.
- Cape Wind became the first offshore wind farm in the United States to receive all required permits in January 2011, 10 years after work on the project began. The project will produce up to 420 MW when complete, and is expected to exceed $1 billion in expenditures. Massachusetts is also committed to developing an R&D program to reduce the cost of offshore wind.
- In addition to the state's numerous cutting-edge clean tech companies, including, notably, companies in solar PV production, wind turbine manufacturing, energy storage and many others. The state is seeking to lead the production of offshore wind turbines in the U.S. with a facility in development in New Bedford.



Wind Resources- Massachusetts has good to outstanding offshore wind resources as well as strong onshore resources in the western half of the state.



Biomass Resources- Massachusetts has biomass resources throughout the state from the forestry and agricultural sectors. Bright green indicates a moderate potential.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	2,595
Organizations	113
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$4.6m, 1/3 deals
Venture Capital & Private Equity (Grossed up)	$284.8m, 21 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$36.2m
Competitive Grants & Tax Credits (48C & 1603)	$25.8m, 107 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Massachusetts

Policies

Renewable Portfolio Standard (RPS): Massachusetts mandates that investor-owned utilities (IOUs) and retail suppliers procure 15% of their electricity supply from new renewable energy resources (Class I) by 2020, and 7.1% from existing renewable energy resources (Class II) in 2009 and thereafter. Class I requirements include a carve-out for retail suppliers to build 400 MW of in-state solar photovoltaics. Class II requirements include a waste energy minimum standard that requires all retail electricity suppliers to provide 3.5% of kWh sales to end use customers from waste energy each year. Compliance is demonstrated through the purchase of renewable energy credits (RECs) to meet Class I and Class II requirements, or solar renewable energy credits (SRECs) to meet the solar carve-out for the Class I requirement. Retail suppliers may pay the alternative compliance payment (ACP) for a higher rate than RECs and SRECs.

Solar Renewable Energy Credits (SRECs): Electric suppliers must purchase SRECs to demonstrate compliance with the solar carve-out of the state's RPS requirement. Unlike similar programs in other states, the program creates a mechanism to allow long-term project financing based on SREC revenue and contains self-correcting adjustments to prevent market oversupply.

Net Metering and Interconnection: Net metering rules apply only to the state's investor-owned utilities, although municipal utilities may offer net metering voluntarily. The aggregate capacity of net metering is limited to 1% of each utility's peak load. There are different net metering categories for systems under 60 kW, systems between 60 kW and 1 MW, and systems between 1 MW and 2 MW that generate electricity from agricultural projects, solar energy or wind energy. "Neighborhood net metering" is offered for facilities owned by groups of 10 or more residential customers. Net excess generation (NEG) is monetized and net metering credits are calculated based on the excess kWh produced. Treatment of NEG varies by facility class and customer type. Massachusetts's interconnection standards apply to all the state's four IOUs, with three levels of interconnection. These include inverter-based, single-phase less than 10 kW, and certified three-phase systems up to 25 kW in capacity.

Public Benefit Fund: The Renewable Energy Trust Fund provides grants, contracts, loans, equity investments, energy production credits, bill credits and rebates to customers to support renewable energy. It is funded by a systems benefit charge of 0.05 cents per kWh and its annual budget is $25 million.

Tax Incentives: *Personal Tax Credit* – A state income tax credit of 15% (up to $1,000) is offered for renewable energy systems on primary residences.

Property Tax Exemption – A 20-year, full local property tax exemption is offered to individuals or businesses that install solar or wind energy systems.

Renewable Energy Equipment Sales Tax Exemption – Massachusetts provides a state sales tax exemption for solar power, wind power, and heat pump equipment used on residences.

Other Exemptions – Massachusetts offers personal and corporate income tax deductions for income received from the sale or lease of a renewable energy patent or associated royalty income.

Rebates: Massachusetts offers rebates of up to $4 per W (with a maximum of $130,000) for design and construction of customer-sited small wind public projects and $5.20 per W (with a maximum of $10,000) for non-public projects, between 1 kW and 99 kW in capacity. The program is a hybrid rebate, part capacity-based and part expected performance based, for which 90% of the rebate amount is paid up front and 10% is paid after one year of reporting. The state also provides rebates of $0.75-$1.70 per W for the installation of grid-tied PV systems.

ACORE Members in Massachusetts

Beacon Power Corporation
Boston Carbon
Cape Cod Community College
Carlisle Tax Credit Advisors
Conservation Services Group
CP Energy Group, LLC
Enel North America
Energy Access Foundation, Inc.
First Wind
Global Energy Investors, LLC
Goodwin Procter
GreenerU
Greenough Communications
International District Energy Association
Iridium Clean Energy LLC
John Hancock
Konarka Technologies
Massachusetts Clean Energy Center
Mavel
McCauley Lyman
National Venture Capital Association
Qteros, Inc.
Rasky Baerlein Strategic Communications
Solar Design Associates
State Street Bank and Trust Company
Stevens Capital Advisors
US SolarTech
WilmerHale
Winslow Management Company, LLC

Renewable Energy in Michigan

Summary

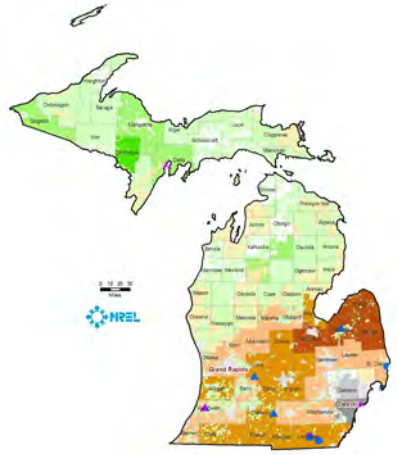
Political leadership, a skilled workforce, and significant renewable energy resource development have positioned Michigan to become an important U.S. hub for clean energy production. The state also benefits from vast resources, particularly wind and biomass. Michigan incentives rank among the best in the country for attracting clean energy manufacturing and R&D. Examples include renewable energy renaissance zones and refundable business tax credits, to scale up the state's wind, bioenergy, energy storage, solar, and hydroelectricity markets.

Cumulative Renewable Energy Capacity, 2010			
Wind	164 MW	Ocean	-
Solar Photovoltaic	0.7 MW	Biomass Power	185 MW
Concentrated Solar Thermal	-	Bioethanol	265 mGy
Geothermal	-	Biodiesel	55 mGy
Small Hydro	-	**Totals**	349.7 MW; 320 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- An increasing number of companies are setting up manufacturing plants in the state, including small and large-scale wind turbine manufacturing plants and advanced battery facilities. In addition, the Dow Chemical Company is investing more than $1 billion in wind, solar, advanced battery manufacturing, and other projects in Michigan that will create more than 6,900 new jobs.
- Michigan has one of the fastest growing wind markets in the U.S., growing from 2.6 MW in 2006 to 164 MW in 2010, and headed to more than 400 MW by 2012. Plans are being developed for offshore wind energy research studies in Lake Michigan, Lake Huron, and Lake Erie.
- Michigan is investing in research and development programs which will support growing companies and create high-tech jobs. The state of Michigan and Michigan universities are presently establishing and conducting R&D programs with the state's bioenergy, solar, wind, and other companies, often in collaboration with the U.S. Department of Energy and its National Laboratories.

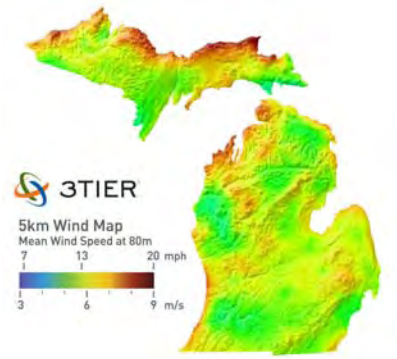


Biomass Resources- Dark brown and dark green indicate excellent potential from crop and forestry residue. Michigan has 7.5 million dry tons of cellulosic biomass, and 6.2 million dry tons of crop biomass.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	5,282
Organizations	69
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/3 deals
Venture Capital & Private Equity (Grossed up)	$16.6m, 3 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$2.1m
Competitive Grants & Tax Credits (48C & 1603)	$269.7m, 33 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Wind Resources- At least 22,000 MW of offshore wind in Michigan is economically achievable (Michigan State Land Policy Institute).

Michigan

Policies

Renewable Portfolio Standard (RPS): Michigan's RPS requires all electricity providers in the state to provide 10% of their electricity using eligible renewable energy resources by 2015. The state's two largest investor-owned utilities (IOUs)– Detroit Edison and Consumers Energy – have additional capacity requirements of 500 and 600 MW by 2015, respectively. The RPS allows utilities to use energy efficiency and advanced cleaner energy systems (including gasification, industrial cogeneration and clean coal facilities) to meet a limited portion of their obligations. Compliance can be met by purchasing renewable energy credits (RECs) with or without the associated renewable energy. Bonus credits are given for electricity generated by certain types of energy systems, including solar power systems, systems that generate electricity at peak demand times or store it during off-peak times, and systems that use equipment made in Michigan.

Net Metering and Interconnection: Michigan's net metering law applies to IOUs and cooperatives. All qualifying customer generators up to 20 kW are eligible for "true" net metering and most systems between 20 kW and 150 kW qualify for "modified" net metering. True net metering is available until aggregate capacity reaches 0.5% of a utility's peak load. For true net metering, net excess generation (NEG) during a billing period may be carried forward to the next billing period at the retail rate. Modified net metering allows NEG carry-over only for the power supply component of the retail rate. NEG may be carried forward indefinitely and system owners retain RECs associated with onsite production. Michigan's rules for interconnection include provisions for five levels of interconnection, with no limit on system size.

Tax Incentives:

- Non-refundable business activity credit for businesses engaged in the research, development, and manufacturing of alternative energy technologies;
- Refundable payroll tax credit for businesses located in the NextEnergy Zone conducting R&D or manufacturing of alternative energy technologies;
- Refundable tax credit equal to 25% of the capital costs of building a PV manufacturing facility (up to $15 million);
- 100% personal property tax exemption for alternative energy systems less than 2 MW, or less than 10 MW for a combination of technologies;
- 100% property tax exemption for biomass gasification and methane digesters.

Renewable Energy Renaissance Zones (RERZ): Michigan enacted legislation in 2006 allowing for the creation of 15 RERZs, 5 of which will focus on the production of cellulosic fuels. Renewable energy facilities within these zones – including generation facilities and facilities that focus on research, development or manufacturing – are exempt from the Michigan Business Tax, state education tax, person and property taxes and local income taxes (where applicable) for up to 15 years.

Public Benefit Fund: The Low-Income and Energy Efficiency Fund (LIEEF) issues requests for proposals for prospective projects, which includes renewable energy projects. Total annual funding for the public benefit fund amounts to around $83.8 million, collected as surcharges on the electric utilities' distribution rates.

Grant Programs: The Michigan Biomass Energy Program (MBEP), funded by the U.S. Department of Energy's State Energy Program, provides competitive grant opportunities for state bioenergy and biofuels projects on a regular basis.

ACORE Members in Michigan

Atwell, LLC
Augment Capital, LLC
Dow Corning Corporation
Fountainhead Engineering Ltd
Midland Tomorrow
Nextek Power Systems, Inc.
NextEnergy
Saginaw Future
Topp Law Plc

Renewable Energy in Minnesota

Summary

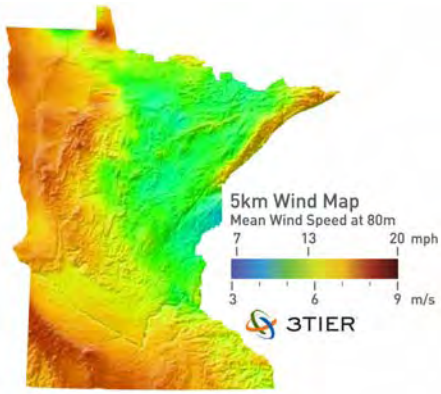
Minnesota has been diligent in providing tax incentives, loans, and grants that help support its ranking in the top five ethanol-producing states and the top ten biodiesel-producing states. Minnesota has also been successful in developing a mature wind industry which is supported by the state's renewable portfolio standard. With continued policy support, Minnesota's wind, solar and bioenergy markets hold a great potential for further growth.

Cumulative Renewable Energy Capacity, 2010			
Wind	2,192 MW	Ocean	-
Solar Photovoltaic	2.2 MW	Biomass Power	240 MW
Concentrated Solar Thermal	-	Bioethanol	1,136.6 mGy
Geothermal	-	Biodiesel	35.9 mGy
Small Hydro	22 MW	**Totals**	2,456.2 MW; 1,172.5 mGy

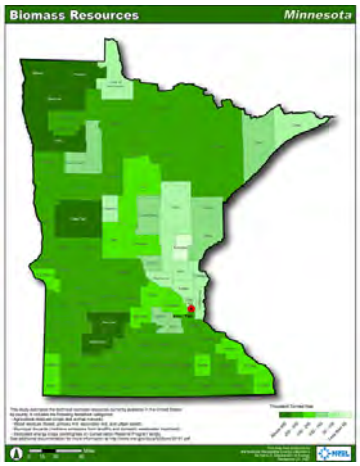
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Minnesota recently approved the construction of a $6.1 million photovoltaic (PV) manufacturing plant in Mountain Iron at a former mining dump site. The plant will initially produce approximately 2 MW of solar modules per year with the capability to expand to 10 MW per year. Construction began in September 2010.
- Minnesota is home to 19 operating bioethanol facilities and 3 biodiesel facilities. Plans for two cellulosic ethanol plants have been announced which would each use forestry residues as feedstock.
- Minnesota houses two major original equipment manufacturer (OEM) wind facilities.
- University researchers in Minnesota are regularly pushing innovations in wind, solar and biomass technologies. Recently, Minnesota researchers cleared a major hurdle to the increased efficiency of solar cells.



Wind Resources- The American Wind Energy Association ranks the state 9th in the nation for potential capacity.



Biomass Resources- Minnesota's crop residue biomass resource. Darker green indicates a very good resource. Minnesota ranks 3rd in crop residue resources with 14,231 metric tons per year.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	2,848
Organizations	116
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$136.5m, 4/10 deals
Venture Capital & Private Equity (Grossed up)	$26.7m, 7 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$12.4m
Competitive Grants & Tax Credits (48C & 1603)	$46.1m, 23 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Minnesota

Policies

Renewable Portfolio Standard: Minnesota requires Xcel Energy to generate 30% of retail sales from renewable energy sources by 2020. Of the 30% renewable energy required, at least 25% must be generated by wind or solar energy systems, with solar limited to no more than 1%. Minnesota also requires all other utilities to generate 25% of retail sales by 2025. The Public Utility Commission (PUC) is allowed a wide range of compliance penalties. These include ordering the utility to construct facilities or purchase renewable energy, imposing financial penalties which may not exceed the estimated cost of achieving compliance, etc.

Net Metering and Interconnection: Minnesota requires all investor-owned utilities (IOUs), municipal utilities, and electric cooperatives to provide net metering for customers with systems less than 40 kW in capacity. There is no limit on statewide capacity and customers have the option to have net excess generation (NEG) credited to their next bill or be compensated at the retail rate. Interconnection standards have been adopted by the PUC that establish an order of standards for utility tariffs of facilities up to 10 MW.

Rebates and Grants: Minnesota offers a residential and commercial rebate of 35% of installed system costs for small wind systems up to 35 kW. The maximum incentives for each program are $10,000 and $25,000, respectively. Funding comes from the American Recovery and Reinvestment Act.

Minnesota offers rebates for solar water and space heat at $25 per ft^2 of net aperture. The rebates have a maximum incentive of the lesser of 25% or up to $2,000 for one family, 25% or up to $4,000 for multi-family, or 25% or up to $25,000 for small businesses and larger dwellings (4+ units).

Minnesota provides a grant for low-income residences of up to $4,700 to install solar or biodiesel heating systems.

Production Incentive: Minnesota offers a payment of 1 to 1.5 cents per kWh for electricity generated by biomass, hydro, and on-farm anaerobic digester facilities. In the past, wind systems were also eligible. The program is funded by the Renewable Development Fund. It is funded by a required annual contribution from Xcel Energy until 2020, which is currently $10.9 million.

Tax Incentives: Solar and wind energy systems, including the tools required for maintenance of the system, are exempt from sales tax and real property tax. The land on which the systems are located remains taxable.

In place of a property tax on larger wind facilities, a production tax is in effect, tiered by system size.

Loans: The Minnesota Rural Finance Authority (RFA) provides a variety of loans for the agriculture sector for installations or improvements of renewable energy technology. The Agricultural Improvement Loan Program provides loans for improvements made to permanent structures including wind turbines, anaerobic digestion, and biomass facilities. In addition, livestock producers can receive loans for biomass or anaerobic digestion process systems. Lastly, loans are available to help farmers finance the purchase of cooperatives, limited liability companies, or limited liability partnerships that include but are not limited to their participation in wind energy, anaerobic digestion, biomass, and solar photovoltaic systems.

Minnesota offers loans in amounts of up to $40,000 per farm family, with up to $160,000 available for joint projects, for on-farm energy production.

Low-interest loans of between $2,000 and $35,000 are offered for renewable energy improvements at residences, with repayment terms varying between 1 and 20 years and a fixed interest rate of 5.75%.

Community-Based Energy Development Tariff (C-BED): Public utilities in Minnesota are required to create a 20-year power purchase agreement (PPA) for community-owned renewable energy projects.

ACORE Members in Minnesota

Byrne & Company Limited
Easy Energy Systems
Ever-Green Energy, LLC
Fredrikson & Byron PA
Fulbright & Jaworski LLP
Hearth and Home Technologies
SGS North America, Inc.
Short Elliott Hendrickson Inc
University of Minnesota - Morris
Windustry

Renewable Energy in Mississippi

Summary

Although the state lacks significant policy support for renewable energy, Mississippi has been successful in attracting renewable energy manufacturers with favorable tax incentives. Mississippi's biomass resources are ranked sixth in the nation, yet remain largely untapped. They hold great potential for the expanded use of biomass heating and production from next generation fuels such as cellulosic ethanol.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	0.1 MW	Biomass Power	10 MW
Concentrated Solar Thermal	-	Bioethanol	54 mGy
Geothermal	-	Biodiesel	114 mGy
Small Hydro	-	**Totals**	10.1 MW; 168 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

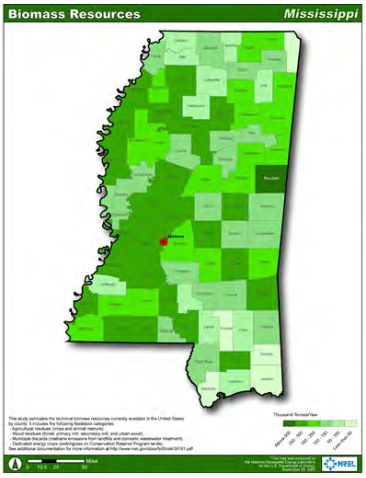
Market

- Mississippi is home to six biodiesel plants and one bioethanol plant. Plans have been announced to build four commercial-scale cellulosic ethanol facilities, which would bring 71 mGy of next generation biofuels online in 2011 and 2012.
- A Mississippi-based company received a $50 million grant from the DOE and the USDA's Advanced Biorefinery Projects to produce ethanol and other green chemicals through gasification and catalytic processes at an existing landfill.
- The state's manufacturing activities include: an existing OEM wind turbine assembly plant; a planned $500 million solar CIGS manufacturing facility in Hattiesburg, which will create 1,000 jobs in the state; and a planned crystalline silicon module manufacturing plant in Senatobia, which will create at least 500 jobs and have a manufacturing capacity of 100 MW.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	393
Organizations	16
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.8m, 1/1 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.0m
Competitive Grants & Tax Credits (48C & 1603)	$0.2m, 2 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Biomass Resources- Dark green indicates an above average resource potential of between 250 and 500 thousand metric tons of biomass per year. Mississippi ranks first in the nation in forest residue resources and ranks sixth in primary mill resources (NREL).

Solar Resources- The state has solar resources for photovoltaic systems of up to 200 W per meter squared per day.

Mississippi

Policies

Tax Incentives: Mississippi's Clean Energy Initiative allows for a 10-year income, franchise, and sales and use tax exemption. This exemption applies to companies that manufacture systems or components used to generate renewable or alternative energy, including but not limited to, biomass, solar, wind, hydro-electric generation, and nuclear power.

Loans: Mississippi's Energy Investment Loan Program offers low-interest loans for commercial and industrial renewable energy systems ranging from $15,000 to $300,000. The program is supported by revolving loan funds whose interest rates are 3% below prime and have a 7-year maximum term.

Renewable Energy in Missouri

Summary

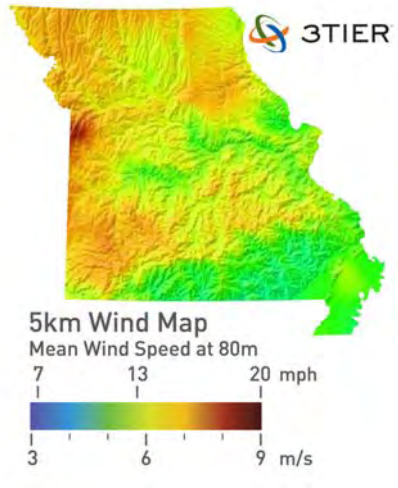
The renewable energy industry of Missouri is less mature than some of its neighboring states, but it possesses an equally strong renewable energy resource potential. Missouri has enacted technologically diverse policies and tax incentives to help support renewable energy production, especially through provisions in its renewable energy portfolio standard. The state is already a leading ethanol producer, but has a vast opportunity to use its switchgrass lands as the commercial cellulosic ethanol industry gains traction in the U.S.

Cumulative Renewable Energy Capacity, 2010			
Wind	457 MW	Ocean	-
Solar Photovoltaic	0.2 MW	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	261 mGy
Geothermal	-	Biodiesel	155.9 mGy
Small Hydro	-	**Totals**	457.2 MW; 416.9 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Missouri ranks 13th in the nation for bioethanol capacity. As of February 2011, Missouri facilities were operating at a 100% production capacity and supplying 261 million gallons of ethanol a year.
- Missouri added over 250 MW of wind energy in 2008 and 2009. Kansas City Power & Light Company (KCP&L), headquartered in Kansas City, Missouri, announced in 2009 that it had issued requests for proposals to add up to 300 MW of additional wind energy in 2010 and 2011.
- Rockport, MO was the first 100 percent wind powered community in the U.S.
- Plans for at least two wind turbine manufacturing plants were announced in 2010, which chose to move to the state due to its location as the strategic center of wind production facilities in the U.S.

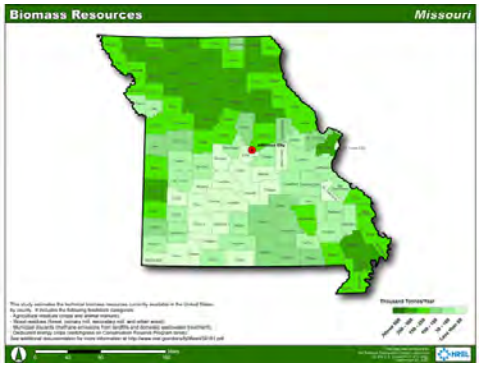


Wind Resources- Missouri has a favorable wind resource, particularly in the western part of the state.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,024
Organizations	47
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/1 deals
Venture Capital & Private Equity (Grossed up)	$0.3m, 1 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.5m
Competitive Grants & Tax Credits (48C & 1603)	$195.3m, 15 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Biomass Resources- Dark green indicates an above average resource potential of between 250 and 500 thousand metric tons of biomass per year.

Missouri

Policies

Renewable Portfolio Standard (RPS): Missouri requires investor-owned utilities (IOUs) to achieve 15% electricity production from renewable sources by 2021, with 0.3% generated from solar. Eligible resources include electricity generated from solar thermal electric, PV, landfill gas, wind, biomass, municipal solid waste, anaerobic digestion and small hydroelectric systems (under 10 MW), as well as fuel cells using renewable fuels. Renewable energy credits (RECs) and solar renewable energy credits (SRECs) can be used for compliance for up to 3 years from the generation date. RECs created from in-state generation receive a multiplier of 1.25 compared to out-of-state generation. Utilities that do not comply are subject to penalties of at least twice the market value of RECs or SRECs.

The law also requires IOUs to offer rebates of at least $2 per watt for customer-sited solar electric systems under 25 kW. Utilities are allowed to offer standard offer contracts for the purchase of SRECs from customer-owned systems.

Net Metering and Interconnection: Missouri requires all electric utilities to offer net metering to customers with conventional renewable energy systems, up to 100 kW. Net metering must be offered until the aggregate generating capacity meets 5% of a utility's single-hour peak load estimated from the previous year, or once the aggregate capacity for interconnection exceeds 1% of a utility's single-hour peak load for the previous calendar year. Net excess generation (NEG) is credited on a customer's next billing cycle at a rate greater than or equal to the utility's avoided-cost. At the end of a 12-month period NEG not used by the customer is granted to the utility. Interconnection standards exempt systems under 100 kW from limited liability insurance and place municipal and electric cooperatives responsible for their interconnection standards.

Tax Incentives: The Wood Energy Tax Credit allows individuals or businesses processing Missouri forestry residues into fuels a transferable income tax credit of $5.00 per ton of processed material. This program is in effect until June 2013.

Loans: The Missouri Energy Revolving Fund Loan Program, administered by the Division of Energy in the Missouri Department of Natural Resources (DNR), offers loans for solar electric and thermal, wind and biomass systems at public and government buildings and structures. The program is new and details are still unknown.

ACORE Members in Missouri

Ameren Corporation
Energy Asset Advisors, LLC
Innovative Energy Incorporated
Milbank Manufacturing

Renewable Energy in Montana

Summary

Montana has one of the best wind resources in the nation and a significant geothermal resource, which together offer the state a clean and reliable energy supply. Montana's varied resource landscape has been complimented by supportive policy to increase the state's movement toward a renewable energy economy. However, transmission constraints have prevented Montana from developing its wind energy potential to the extent of other states in the region. With continued support and expanded infrastructure development, Montana is positioned to become a leader in the deployment and generation of renewable energy technology.

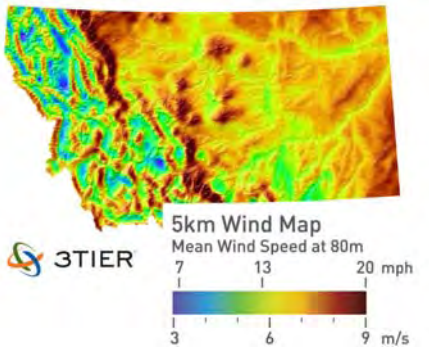
Cumulative Renewable Energy Capacity, 2010			
Wind	386 MW	Ocean	-
Solar Photovoltaic	0.7 MW	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	-
Small Hydro	36 MW	**Totals**	422.7 MW

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Biofuels producers in Montana are working with next-generation feedstocks, such as camelina, to develop biodiesel on a large scale, and other companies are working to commercialize cellulosic ethanol.
- A Bozeman-based renewable energy company, in partnership with multiple wind developers, announced plans in May 2010 to develop a large wind project complete with a pumped storage reservoir that would serve Montana, North Dakota, and Alberta. This project would cost over $2 billion to build.
- Geothermal development in the state has thus far been limited to low-temperature (less than 100°C) near-surface geothermal resources used to heat buildings, grow plants in greenhouses, or heat water for aquaculture.
- Montana is the tentative site of a wind turbine assembly plant which would be developed and owned by a German wind company. The plant would employ 150 people.

Geothermal Resources- Orange and red indicate an excellent to superb geothermal resource. Montana is home to 25,000 square miles of high-potential sites, the greatest of which are located at or northwest of Yellowstone National Park.



Wind Resources- All together, the state has 17 million acres of land adequate for small to commercial scale wind turbines, and this land has the potential to produce 1.020 billion MWh per year.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,047
Organizations	12
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$117.5m, 1/2 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.4m
Competitive Grants & Tax Credits (48C & 1603)	$68.8m, 8 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Montana

Policies

Renewable Portfolio Standard (RPS): Montana requires public utilities and competitive electricity retail suppliers to acquire 15% of their retail electricity sales by 2015, with two intermediate targets of 5% and 10% by 2008 and 2010 respectively. Facilities must begin operation after January 1, 2005, and must either be located in Montana or located in a state that delivers electricity to Montana. Utilities and competitive suppliers can meet the standard by purchasing electricity bundled with renewable energy credits (RECs), by purchasing the RECs separately, or by a combination of both. Montana does not allow the recovery of noncompliance penalties through rate increases.

Net Metering and Interconnection: Montana's net metering law requires all customers of investor-owned utilities (IOUs) who have systems of up to 50 kW in capacity to have access to net metering at no cost to them. Only systems generating electricity utilizing solar, wind or hydropower resources are eligible. No limit on enrollment or statewide installed capacity is specified. Net excess generation is credited to a customer's next bill at the retail rate, but granted to the utility at end of each 12-month billing cycle. The interconnection standard has the same capacity limit as the net metering standard and mirrors national standards except that it also requires a manual, lockable, external disconnect switch.

Loans: The Alternative Energy Revolving Loan Program, administered by the Department of Environmental Quality, provides loans for the installation of most renewable energy systems that generate energy for their own use. The 2010 fixed interest rate is set at 4.0% annually with a maximum loan term of 15 years, and a maximum loan amount of $60,000.

Tax Incentives: Multi-family residential and non-residential structures are exempt from property tax resulting from the installation of a renewable energy system, up to $100,000, for 10 years post-installation.

New electricity generating facilities under 1 MW are exempt from property taxes for five years after the systems' installation. New or expanded energy generation facilities over 1 MW are eligible for a 50% property tax reduction for five years. New production, manufacturing and research and development facilities qualify for a 50% property tax abatement.

Residential taxpayers who install a renewable energy system on their property are eligible for a tax credit equal to the investment and installation cost, up to $500 per individual or $1,000 per household. Residents who install a geothermal heating or cooling system can claim a tax credit based on the installation cost of the system up to $1,500.

Commercial and net metering alternative energy investments of $5,000 or more are eligible for a personal or corporate tax credit of up to 35% against taxes on income generated by the investment. Unused credit may be carried over for 7 years.

Public Benefit Fund: The Universal System Benefits Program (USBP) supports renewable energy and energy efficiency programs in the state, including research and development programs, market transformation programs designed to encourage competitive markets, and renewable energy projects and applications. All electric utilities are required to contribute revenue from a surcharge on customers' electricity use. The budget is around $5 million annually.

ACORE Members in Montana

Grasslands Renewable Energy
Great Falls Development Authority

Renewable Energy in Nebraska

Summary

Nebraska's landscape has diverse and plentiful renewable energy resources, including vast wind and biomass resources as well as moderate solar and geothermal resources. While Nebraska's policy portfolio for renewable energy is limited, the state has become a leader in the biofuels industry. Nevertheless, Nebraska has only tapped a fraction of its diverse renewable energy potential. Without policy drivers like a renewable portfolio standard, the state's wind, solar and geothermal markets may remain limited.

Cumulative Renewable Energy Capacity, 2010			
Wind	213 MW	Ocean	-
Solar Photovoltaic	-	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	1864.0 mGy
Geothermal	-	Biodiesel	10 mGy
Small Hydro	-	**Totals**	213 MW; 1,864.0 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

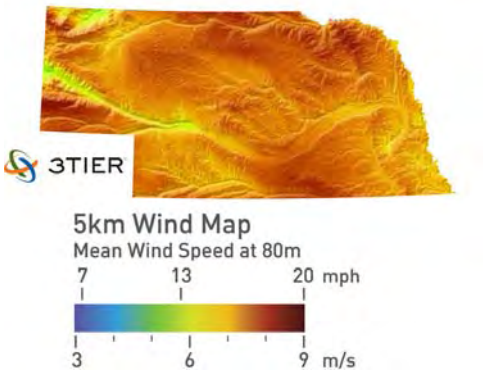
Market

- Nebraska is ranked second in the nation in ethanol production and has 27 operating ethanol plants. In addition, it has one biodiesel plant producing 10 million gallons per year.
- At least two wind farms are expected to begin operation within the next year, which would together bring 141 MW of new wind power online.

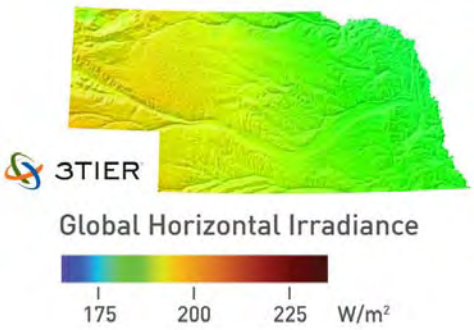
Economic Development

Employment	
Direct and Indirect Jobs, 2009	616
Organizations	32
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$200.0m, 1/3 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.4m
Competitive Grants & Tax Credits (48C & 1603)	$78.3m, 4 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Wind Resources- The American Wind Energy Association (AWEA) ranks Nebraska 6th in potential power capacity.



Solar Resources- Nebraska's solar resources for photovoltaic systems are in the range of 5.5 kWh per meter squared a day, and 4.5 kWh per meter squared a day for concentrated solar power resources (NREL).

Nebraska

Policies

Net Metering and Interconnection: Nebraska requires all utilities in the state to offer net metering to customers that install solar, methane, wind, biomass, hydropower or geothermal energy systems under 25 kW. Net excess generation (NEG) is credited to the customer's next billing period at the utility's avoided cost rate, with any NEG at the end of an annualized period paid out to the customer. Net metering must be offered until the aggregate generating capacity of all generators equals 1% of the utility's average monthly peak demand for that year. To be eligible for interconnection, a facility must meet all applicable standards established by the National Electric Code, be under 25 kW, and be capable of automatically isolating itself from the electrical grid in the event of a power outage. Bi-directional meters should be provided to the customer with no additional cost to them.

Loans: Nebraska's Dollar and Energy Savings Loan program makes available low interest loans for residential and commercial conventional renewable energy systems and energy efficiency improvements. Only improvements to existing buildings that are at least 5 years old are eligible for loan assistance. Loans allotted are to be between $35,000 - $75,000 for residential systems and $75,000 - $175,000 for non-residential systems. With additional funding provided through the American Recovery and Investment Act (ARRA), loans of up to $750,000 are available. Only a handful of loans have been provided for renewable energy projects since the program's inception in the 1990s.

Tax Incentives: Nebraska allows a 100% exemption from the sales and use tax imposed on the gross receipts from the sale, lease, or rental of personal property for use in community-based wind energy development projects.

ACORE Member in Nebraska

Nebraska Public Power District

Renewable Energy in Nevada

Summary

Nevada contains excellent sites for developing renewable energy resources. Its solar and geothermal resources are among the best in the nation, and it is a substantial producer of electricity from each. Nevada's policies have kept it in the forefront of the renewable energy industry, including an aggressive target of 25% renewable energy by 2025 and strong net metering and interconnection policies designed to encourage distributed generation. However, the lack of available transmission capacity has prevented Nevada from taking full advantage of its abundant resources. As a response, the state created a task force to recommend zones with deployable renewable energy resources for the construction of new transmission routes.

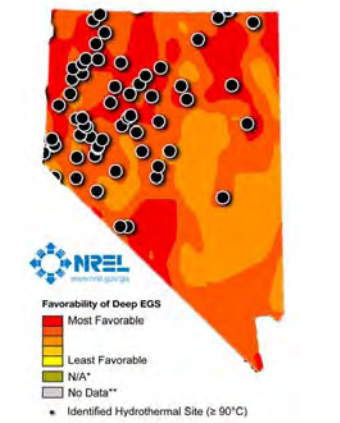
Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	100.4 MW	Biomass Power	-
Concentrated Solar Thermal	64 MW	Bioethanol	-
Geothermal	448.4 MW	Biodiesel	14 mGy
Small Hydro	-	**Totals**	612.8 MW; 14 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Nevada ranks second in the nation in installed solar capacity, and first in per capita solar energy production. It is home to one of the largest CSP plants in the world: the 64 MW Nevada Solar One project near Boulder City. It is also home to the largest operating PV plant in the country: the 48 MW Sempra Cooper Mountain project, also near Boulder City.
- Nevada ranks second in the nation in installed geothermal capacity, with over 20 operating geothermal power plants ranging from 1 MW to 67 MW. It is poised to become the leader, with more projects in the pipeline than any other state.
- In 2010, a Nevada company was offered a conditional commitment from the U.S. Department of Energy to provide a partial guarantee for a $98.5 million loan to help build the Blue Mountain Geothermal project, a 49.2 MW plant in Humboldt County.
- Nevada is an attractive location for solar manufacturing. In 2008, Ausra built the first U.S. manufacturing plant for solar thermal power systems in Las Vegas. Nevada will also soon be the home to a major original equipment manufacturer (OEM) wind facility, to be developed by Chinese companies. The plant will produce 1.1 GW of turbines annually.

Solar Resources- With over 300 days of sunshine per year, Nevada could produce approximately 83 million MWh per year from solar energy. Its solar resource ranks 6th in the nation.



Geothermal Resources- Nevada has one of the strongest high-temperature geothermal resources in the country. Commercial geothermal potential ranges from 1488-2895 MW (Western Governors Association).

Economic Development

Employment	
Direct and Indirect Jobs, 2009	105
Organizations	44
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$49.5m, 4/7 deals
Venture Capital & Private Equity (Grossed up)	$109.0m, 2 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$71.5m
Competitive Grants & Tax Credits (48C & 1603)	$128.3m, 9 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Nevada

Policies

Renewable Portfolio Standard (RPS): Nevada's RPS requires investor-owned utilities (IOUs) and retail suppliers to provide 25% renewable energy from eligible resources by 2025, with interim targets every two years through 2015 and every five years thereafter. Solar power is required to comprise 6% of the target, or 1.25% total, by 2025. Energy efficiency may be used to satisfy a portion of the requirement, which is capped at 25% of the total standard in any particular year.

Nevada authorizes energy providers to buy and sell portfolio energy credits (PECs) in order to meet portfolio requirements. Nevada also created a Temporary Renewable Energy Development (TRED) Program to help facilitate renewable projects, which allows IOUs to collect revenue from electric customers to pay for renewable energy separately from other wholesale power purchased.

Net Metering and Interconnection: Nevada offers net metering for IOU customers with renewable energy systems of less than 1 MW and less than 150% of the customer's peak demand. Aggregate system capacity is limited to 1% of the utility's peak capacity.

Interconnection is available for customers of NV Energy with on-site generation up to 20 MW in capacity. Interconnection standards are largely consistent with IEEE 1547 standards, California's interconnection rule, and the model agreement developed by NARUC.

Rebates: The Renewable Generations Rebate Program offers rebates for the installation of small wind, PV and hydroelectric systems which are sited at schools and at commercial, residential, public, nonprofit and agricultural locations. Incentive levels vary by technology type, customer class and program year. There are no size restrictions for participating systems. The program is administered by the utility NV Energy, which takes ownership of the renewable energy credits associated with the system to count toward its goals under the state's RPS. The demand for solar rebates set a record in early 2010, with over 1,000 applicants.

Tax Incentives: A significant sales and use tax abatement and 55% property tax abatement for 20 years is available to new or expanded businesses for qualifying renewable energy generation facilities of greater than 10 MW. There are several job creation and job quality requirements that must be met in order for a project to receive an abatement.

Solar and Wind Access Laws: Nevada prohibits siting restrictions that would prohibit the installation of or decrease the efficiency or performance of wind and solar energy systems.

Pending - Feed-in Tariff: State Senator Mike Schneider submitted Bill Draft Request 229 in August 2010 to create a feed-in tariff (FIT) program in Nevada. BDR 299 will attempt to create a multi-technology FIT for projects sized up to 3 MW using best practices from North America and Europe. It will be considered during the 2011 legislative session.

ACORE Members in Nevada

BEC Environmental, Inc.
Brownstein Hyatt Farber Schreck LLP
City of Las Vegas, NV
ElectraTherm
Greenberg Traurig LLP
Ormat Technologies, Inc.
Ram Power Corp.
Renewable Capital
White Raven Research
Windspire Energy, Inc

Renewable Energy in New Hampshire

Summary

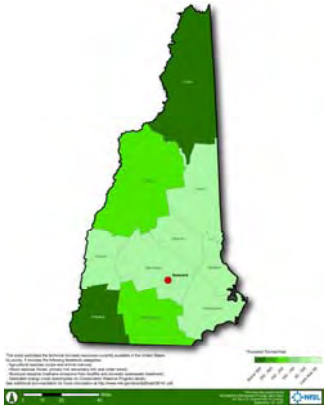
New Hampshire has an active biomass industry and an emerging wind industry, which are poised to meet the state's renewable portfolio standard (RPS) of 23.8% by 2025. Although it has a comparatively limited solar resource, the state also has an RPS carve-out for electricity generated from solar technologies. With its strong biomass resources, particularly in the forestry sector, New Hampshire has the opportunity to increase its role in the production of next-generation bioenergy technologies as well as develop its biomass heating sector.

Cumulative Renewable Energy Capacity, 2010			
Wind	26 MW	Ocean	-
Solar Photovoltaic	0.7 MW	Biomass Power	126 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	-
Small Hydro	-	**Totals**	152.7 MW

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- New Hampshire is home to a growing bioenergy industry; plants throughout the state use woodchips and municipal solid waste to produce electricity.
- A 99 MW wind farm is under development in Coos County, which will involve a total investment of up to $275 million. It is expected to be operational in December 2011.



Biomass Resources- Dark green indicates an excellent resource of over 500 thousand metric tons of biomass a year. About half of these resources come from primary mill residue, while the other half comes from forest residues.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	717
Organizations	23
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$275.0m, 1/1 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.0m
Competitive Grants & Tax Credits (48C & 1603)	$2.4m, 5 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Wind Resources- The American Wind Energy Association ranks New Hampshire as 35th in the nation in potential power capacity.

New Hampshire

Policies

Renewable Portfolio Standard (RPS): New Hampshire's RPS requires all electricity suppliers except municipal suppliers to acquire renewable energy certificates (RECs) equivalent to 23.8% of retail electricity sold to customers by 2025. There are mid-term deadlines for certain technologies and types of facilities. Class I resources must account for 16% of the requirement by 2025, and include new wind, geothermal, renewable hydrogen, ocean energy, biogas, certain biopower, and solar electric and thermal facilities. Class II systems must account for 0.3% of the requirement by 2014 and after, and include new solar energy systems built after 2006. Class III technologies must account for 6.5% of the requirement by 2011 and after, and include existing biomass and methane-powered systems. Class IV systems were required to account for 1% of the requirement in 2009 and after, and include existing small hydroelectric systems under 5 MW. Non-compliance is assessed from adjustable rates based on the Class system not met that year.

Net Metering and Interconnection: New Hampshire revised its net metering policy in June 2010, increasing the capacity limit from 100 kW to 1 MW (with the exception of wind, which keeps the existing cap). All utilities are required to provide net metering, with net excess generation carried over indefinitely. The aggregate capacity limit is 1% of the utility's annual peak load. There is only one level of review for interconnection standards for net metered systems. Insurance is not required, and external disconnect switches are not required for inverter-based systems. The Public Utilities Commission has not yet established regulations in accordance with the new law.

Rebates: New Hampshire's renewable energy rebate program is subsidized by the alternative compliance payment issued under the RPS. Residential solar or wind energy systems up to 5 kW of capacity are eligible for a $1.25 per watt rebate. The maximum incentive is the lesser of $4,500 or 50% of system costs. Commercial and industrial systems under 100 kW are eligible for rebates ranging from $0.50 to $1.00 per W for PV systems and $0.04 to $0.07 per modeled kBtu per year for solar thermal systems, with a maximum incentive of the lesser of 25% the total cost or $50,000. The program budget is $1 million.

New Hampshire offers a state-funded rebate for solar thermal hot water heater and solar space heating systems ranging from $600 to $900, depending on size, with a maximum incentive of $2,900. The program also receives funding from the American Recovery and Reinvestment Act to provide loans for $2,000. The program budget is $995,000.

Tax Incentives: New Hampshire allows local governments to exempt residential property taxes in the amount of the assessed value of a renewable energy system used on the property. Eligible technologies include solar energy, wind energy, and wood-fired central heating systems.

Loans: The Renewable Energy and Energy Efficiency Business Loan Program provides low-interest loans to the commercial sector to purchase equipment that reduces energy consumption or generates renewable energy. Loan amounts can be provided at a minimum of $10,000 and have a maximum term of seven years. The interest rate is prime minus 1%.

The New Hampshire Community Loan Fund and the New Hampshire Community Development Finance Authority offer the Enterprise Efficiency Fund, a revolving loan funded by the American Recovery and Reinvestment Act. The program provides loans to commercial and nonprofit entities to install certain renewable energy systems on their property. Loans of $10,000 to $500,000 are provided for 3 to 10 years. For businesses, rates are between 2.75 and 4% and for nonprofit entities they are between 2 and 2.5%, depending on the length of the loan. The program budget is $6.6 million, with a limited amount of funding for grants.

ACORE Members in New Hampshire

American Biomass Corporation
New Energy Capital LLC
New Hampshire Electric Cooperative, Inc.

Renewable Energy in New Jersey

Summary

By enacting a strong renewable portfolio standard, net metering and interconnection standards, and the Solar Renewable Energy Credit (SREC) financing model, New Jersey has become the second largest market for solar in the country, with over 6,000 commercial and residential installations. New Jersey does not have the solar resource of many sunnier areas, but continued government support has catapulted the state's industry from virtually nonexistent to a U.S. leader within a decade. New Jersey's incentive programs are also designed to take advantage of its wind and biomass resources and to attract renewable energy manufacturers into the state.

Cumulative Renewable Energy Capacity, 2010			
Wind	8 MW	Ocean	0.04 MW
Solar Photovoltaic	139.5 MW	Biomass Power	239 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	103 mGy
Small Hydro	-	**Totals**	386.5 MW; 103 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- New Jersey ranks 2nd only to California in installed solar capacity in the U.S. The state lacks the land resource for many larger-scale projects, and historically, many of its projects were commercial and residential. However, in 2011, New Jersey will be commissioning one of its largest solar projects: a 20 MW utility-scale facility in Pilesgrove, which represents a $90 million investment.
- Current project proposals for offshore wind farms include Fishermen's Energy for 20 MW, Garden State Offshore Energy for 350 MW, and Bluewater Wind for 350 MW. Although two of the projects are similar in size, there is a significant variance in capital and commissioning costs.

Wind Resources- The annual onshore wind potential in New Jersey is 1,328 MW with an average annual capacity factor of 21%. New Jersey has good to excellent offshore wind resources.

Solar Resources- New Jersey has a moderate solar resource, good for residential and commercial electricity generation and non-electric solar thermal generation.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,815
Organizations	101
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$90.0m, 1/11 deals
Venture Capital & Private Equity (Grossed up)	$126.6m, 10 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.0m
Competitive Grants & Tax Credits (48C & 1603)	$88.2m, 209 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

New Jersey

Policies

Renewable Portfolio Standard (RPS): New Jersey's RPS calls for investor-owned utilities (IOUs) and retail electric suppliers to procure 22.5% of the electricity they sells from renewable energy by 2021. As a portion of this target, 5,316 GWh must be met by in-state solar electric generators in the year 2025. Rules are being established to meet another carve-out of 1,100 MW from offshore wind. Hydro facilities under 30 MW and resource recovery facilities are limited to meeting 2.5% of the requirement. Utilities may purchase renewable energy credits (RECs), solar RECs (SRECs) or offshore wind RECs (ORECs) for compliance. Alternative compliance payments (ACPs) are required for noncompliance, for the amount of the REC or SREC that was not submitted.

Net Metering and Interconnection: New Jersey's net metering program and interconnection standards apply to all customers of the state's IOUs as well as to certain municipal utilities and electric cooperatives. There is no maximum system capacity limit to qualify or aggregate capacity limit. Interconnection fees are divided into three levels, depending on system size and complexity. Net metering is available to all customer classes as well as to most renewable energy resources (excluding hydro). Customers with net excess generation at the end of the year may choose among alternate forms of compensation.

Public Benefit Fund: New Jersey's Clean Energy Fund supports investments in energy efficiency and renewable energy. It is funded by a "societal benefit charge," a charge imposed on customers of the state's seven IOUs. As of November 2009, the program had supported the installation of 4,719 renewable energy projects in the state, totaling 153.9 MW. In early 2010, $158 million was appropriated from the Clean Energy Fund to cover the state's $2.2 billion shortfall.

Solar Renewable Energy Credits: The SREC program provides a means for solar renewable energy credits to be created and verified, and allows electric suppliers to buy these certificates from most sectors in order to meet their solar RPS requirements. The current maximum incentive is around $675 per MWh.

Other Production Incentives: New Jersey offers competitive production incentives for grid-connected wind and biomass generation projects. The bulk of the incentive will take the form of a payment for energy production once the project is operating. There is an unapproved budget proposal for $7.4 million in 2011.

Rebates: The *Renewable Energy Manufacturing Incentive Program* provides rebates for businesses and homeowners that install PV projects up to 500 kW which have components manufactured in New Jersey. Rebates range from $0.05 to $0.55/W, depending on equipment type, sector and system size. At present, the incentives are limited to solar PV systems, but there are plans to cover other technologies. Incentives are limited to first 10 kW for residential installations and first 500 kW for non-residential installations.

The *Renewable Energy Incentive Program* provides rebates for wind systems of up to $3.20 per kWh for the first 16 MWh and $0.50 per kWh for the next 984 MWh; for biomass and fuel cells without CHP of $0.15 - $4 per W; for systems with CHP of $0.65 - $5 per W; and for feasibility studies of up to 50% of the study cost. The program is funded by the state's system's benefit charge, and has $14.2 million in available funding in 2011.

Tax Exemptions: New Jersey offers a full exemption from the state's sales tax for all solar energy equipment. The state also offers a 100% property tax exemption for the value added by renewable energy systems at commercial, industrial, or residential sites.

A tax credit is offered for businesses that manufacture wind energy equipment and employ at least 300 full-time employees and have a minimum investment threshold of $17.5 million. The credit is for 100% of the qualified capital investment of the facility.

Loans: Ten-year, 0% interest loans and grants are available for manufacturers of renewable energy products. A 50% cost share is required. There is a maximum incentive of $300,000 for grants and $3 million for loans.

ACORE Members in New Jersey

American Clean Energy
Chinook Energy LLC
Chubb Corporation
Cleantech Group
Covanta Energy
EMECO
First Infrastructure
Green Campus Partners
Hudson Clean Energy Partners
JPF Consulting LLC
National Energy Partner, LLC
New Jersey Economic Development Authority
Noveda Technologies
NRG Energy
Pure Power
Quadrillion Solar Partners
Ridgewood Renewable Power
S&C Electric
Solar Rainbow Services LLC
State of New Jersey, Board of Public Utilities
Sunlight Photonics

Renewable Energy in New Mexico

Summary

Over the past decade, New Mexico has made significant progress in developing its wind sector, and is currently making strides to expand its emerging solar sector. A broad spectrum of tax credits and exemptions provide incentives for industry, businesses, and homeowners to take advantage of the state's renewable resources. In order to improve the transmission of energy from resource intense areas to load centers, New Mexico has recently created a task force to create a blueprint for a future clean energy grid. The state created a rule for a carbon action plan in late 2010 that would have required emitters of greenhouse gas to reduce their emissions by 3% a year, but it has since been blocked by the incoming governor.

Cumulative Renewable Energy Capacity, 2010			
Wind	700 MW	Ocean	-
Solar Photovoltaic	33.5 MW	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	30 mGy
Geothermal	-	Biodiesel	0.4 mGy
Small Hydro	-	**Totals**	733.5 MW; 30.4 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

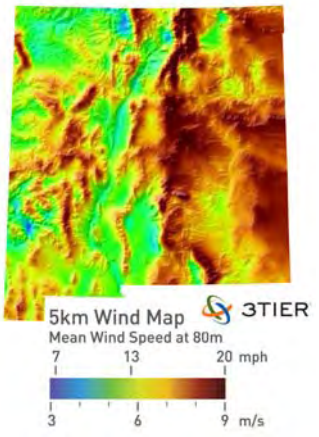
- New Mexico is planning its first utility-scale solar energy projects to meet the solar energy carve-out included in the state's RPS. The Cimarron Solar project, which came online in January 2011, is a 30 MW, $100 million project and among the nation's largest solar PV plants. A 92 MW solar tower plant in southeast New Mexico is expected to be commissioned in the summer of 2011.
- Albuquerque's Mesa Del Sol region is the site of two major solar energy companies. A state-of-the-art photovoltaic manufacturing facility is also planned, which would employ 300 workers within two to three years with a potential of up to 500 thereafter.
- A research and development center for the commercialization of algae technology is planned for completion in mid-2011 in Roswell.

Solar Resources- Dark red indicates the highest potential. New Mexico has enough solar resources to produce 6.5 kWh to 7 kWh per square meter, totaling 104 million MWh per year.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,695
Organizations	31
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$235.0m, 2/5 deals
Venture Capital & Private Equity (Grossed up)	$6.5m, 1 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$18.8m
Competitive Grants & Tax Credits (48C & 1603)	$59.3m, 8 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Wind Resources- New Mexico has abundant wind power resources which can produce 56 million MWh per year. Dark red indicates the highest potential.

New Mexico

Policies

Renewable Portfolio Standard (RPS): New Mexico's RPS directs investor-owned utilities (IOUs) to generate 20% of total retail electricity sales from renewable energy resources by 2020, with interim standards of 10% by 2011 and 15% by 2015. There are carve-outs for solar (4% of total sales), wind (4% of sales), distributed renewables (0.6% of sales), and combined biomass, geothermal energy, and other renewables (2% of sales). Compliance is demonstrated through the use of renewable energy certificates (RECs). On July 1 of every year, IOUs must file a report to the Public Regulation Commission (PRC) on their procurement and generation of renewable energy during the prior calendar year and submit a procurement plan. Rural electric cooperatives must meet a standard of 10% by 2020.

Net Metering and Interconnection: New Mexico law dictates that electric cooperatives and IOUs must offer net metering and interconnection standards to customers with systems up to 80 MW in capacity. Any net excess generation is credited to customer's next bill or reconciled monthly at the avoided-cost rate. To be eligible for interconnection, systems must comply with all relevant local and national standards and follow a specific application process dependent on system size, with four levels of review.

Tax Incentives: New Mexico has a broad spectrum of tax incentives with at least 12 incentives available for renewable energy systems.

Sales Tax Incentives—Businesses in New Mexico have a gross receipts tax structure instead of a sales tax, in which they are taxed on the gross amount of their business receipts each year before expenses are deducted. Before the gross receipts tax is calculated, businesses are able to deduct from gross receipts the revenue generated by the (1) the sale and installation of solar electric, geothermal electric and CHP/cogeneration facilities above 1 MW for up to $60 million; (2) the sale of certain wind turbine and solar electric equipment to government entities; (3) the sale and installation of solar thermal and electric systems at residential and commercial properties. In addition, the biomass equipment and materials used for the processing of biopower, biofuels or biobased systems may be deducted when determining the amount of compensating tax due (the state's excise or use tax).

Property Tax Incentives—Solar thermal and electric systems are exempted from property tax assessments at the time the system is installed.

Tax Credits—New Mexico provides a 10% personal income tax credit (up to $9,000) for residents and businesses that install solar thermal and electric systems. PV systems must be at least 100 W, solar thermal systems must be at least 15 square feet, and solar water heating systems must heat at least 50% of the total water heating load.

Personal and corporate production tax credits of 1¢/kWh are available for companies or individuals that generate electricity from wind or biomass systems above 1 MW, for the first 400 GWh annually for 10 years. Companies that generate electricity from solar energy systems above 1 MW can receive a tax incentive that varies annually, averaging 2.7¢/kWh, for the first 200 GWh annually for 10 years. There is a statewide cap of 2,000 GWh plus an additional 500 GWh for solar electric.

Geothermal heat pumps purchased and installed between 2010 and 2020 on the taxpayer's property are eligible for a 30% tax credit (corporate or personal), for up to $9,000 of the system's cost. Unused credit can be carried forward for up to 10 years. The program's budget is $2 million per year.

The Advanced Energy Tax Credit allows 6% of the cost of solar electric and geothermal projects with a minimum project capacity of 1 MW to be credited against personal and corporate income taxes. The credit cap is $60 million, and any unused credit may be carried forward for up to 10 years.

A tax credit is available for companies that manufacture renewable energy products and components. The total amount of the credit may not exceed 5% of the taxpayer's qualified expenditures.

ACORE Members in New Mexico

Everguard Solar Energy
New Mexico State University—Alamogordo
QMI Environmental Inc.

Renewable Energy in New York

Summary

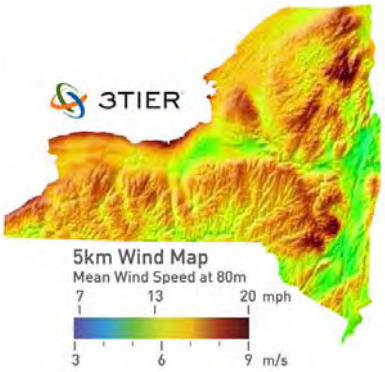
Renewable energy technologies are at the center of New York's concerted strategy to move to a clean energy economy. The state has a significant amount of installed wind generation capacity and solar generation capacity and is also one of the nation's top generators of electricity from landfill gas and solid municipal waste. Through its supportive, multifaceted package of incentives and continued workforce development, New York is well positioned to further increase its market share of the renewable energy industry.

Cumulative Renewable Energy Capacity, 2010			
Wind	1,275 MW	Ocean	-
Solar Photovoltaic	34.4 MW	Biomass Power	453 MW
Concentrated Solar Thermal	-	Bioethanol	164 mGy
Geothermal	-	Biodiesel	5 mGy
Small Hydro	834 MW	**Totals**	2,596.4 MW; 169 mGy

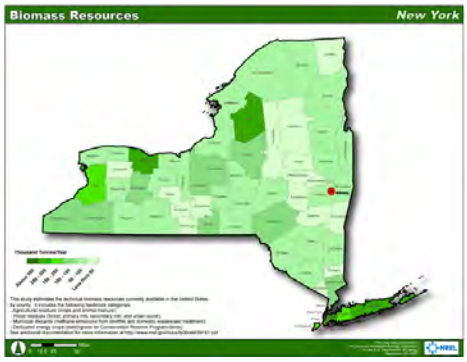
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- New York is ranked 13th in the nation in installed wind capacity, and the sector is steadily expanding, with 345 MW installed in 2009 alone.
- New York is ranked 8th in installed solar capacity. In January 2010, The New York Power Authority (NYPA) issued a request for proposals (RFP) seeking a public-private partnership for the installation of up to 100 MW of photovoltaic (PV) systems across the state, the state's largest solar program to date.
- New York has 4 tidal power projects in development. Verdant Power has been running a test tidal project in the East River since 2007, the first major tidal power project in the U.S.
- New York is home to more than 50 companies that manufacture renewable energy technologies or related products and over 90 companies that are certified to install solar photovoltaic systems (this number reflects installers that are eligible to participate in NYSERDA's PV Incentive Program).



Wind Resources- New York has a significant wind resource which can be tapped for large-scale electricity generation. According to projections, New York will be adding approximately 1000 MW of wind each year (New York Independent System Operator).



Biomass Resources- New York has an abundant supply of biomass from the forestry, agricultural and other sectors, particularly anaerobic digesters. There is potentially 1 million to 1.68 million acres of non-forest land that can be used for bioenergy feedstock production in New York (NYSERDA, Renewable Fuels Roadmap).

Economic Development

Employment	
Direct and Indirect Jobs, 2009	4,287
Organizations	188
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$20.0m, 1/3 deals
Venture Capital & Private Equity (Grossed up)	$992.8m, 6 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$71.5m
Competitive Grants & Tax Credits (48C & 1603)	$312.2m, 76 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

New York

Policies

Renewable Portfolio Standard (RPS): New York requires 30% of state electricity consumption to come from renewable resources by 2015 (including all hydroelectric power and cogeneration facilities). Of the target, 20.7% will be derived from existing facilities, 1% will be met through voluntary green power sales, and the remainder will be derived from new, eligible resources centrally procured by the New York State Research and Development Authority (NYSERDA). Eligible new generation falls into two tiers—a Main Tier (roughly 93% of incremental renewables generation) and a Customer-Sited Tier (CST) (roughly 7%). NYSERDA can procure Main Tier resources through auction, requests for proposals, or standard offer contracts. To fund the RPS, NYSERDA manages an RPS fund gathered through a surcharge on each kWh sold by the state's investor-owned utilities (IOUs), which is separate from the state's systems benefit charge (SBC). New York runs a state-operated procurement program into which project developers bid to receive production incentives.

Net Metering and Interconnection: New York mandates that IOUs offer net metering for solar systems up to 25 kW for residential or up to 2 MW or peak load for non-residential; wind systems up to 25 kW for residential, up to 500 kW for farm-based, or up to 2 MW or peak load for non-residential; biogas systems up to 1 MW (farm-based only); and micro-CHP and fuel cells up to 10 kW (residential only). Net excess generation can be credited to the customer's next bill at the retail rate, and excess can be reconciled annually at the avoided cost rate. There is an aggregate capacity limit of 1% of the utility's 2005 demand (0.3% for wind). New York's interconnection rules apply to systems up to 2 MW located in the service areas of the state's IOUs. All systems up to 25 kW are subject to a simplified application process.

Tax Incentives: New York provides a residential property tax exemption for the installation of residential solar electric and thermal, biomass, wind, or geothermal heat pump systems for the value it adds to the residence. Sales tax is also exempted for the installation and sale of residential solar thermal and electric systems.

New York offers a personal income tax credit for expenditures on solar thermal and PV equipment used on residential property, equal to 25% of the cost of equipment and installation, up to $5,000.

Refundable personal and corporate tax credits are offered for the residential use of biodiesel for space heating or hot water, for 1 cent per gallon and a maximum incentive of 20 cents per gallon.

Public Benefit Fund: New York's SBC supports renewable energy, education and outreach, research and development, and low-income energy assistance. It is funded through a small surcharge on IOU customers' electricity bills. The program is administered by NYSERDA and funds the New York Energy $mart Program. The program extends until mid-2011, with annual funding of $175 million.

Rebates, Grants and Loans: NYSERDA provides a broad array of incentives for the installation of renewable electric and thermal systems at residential, commercial, industrial, public and agricultural facilities, as well as incentives to attract manufacturers of renewable energy equipment. Refer to the NYSERDA website for information: http://www.nyserda.org/funding/funding.asp?i=2

ACORE Members in New York

A. Page & Associates
AgriPower
Alfred University
Alternative Aviation Fuels LLC
Ambata Capital Partners
Baker & McKenzie
Bank of America Merrill Lynch
BOCH Consulting
Braemar Energy Ventures
Broadrock Renewables LLC
Bryant Park Capital
Center for Architecture Science and Ecology (CASE)
Center for Sustainable Energy-Bronx Community College
Chadbourne & Parke LLP
Citigroup
Columbia Business School
Cornell University
Credit Suisse
Debevoise & Plimpton LLP
Deutsche Bank
Emerald Development Managers
EverPower Wind Holdings, Inc.
Evolution Markets
Fox Enterprises
Freshfields Bruckhaus Deringer
Future Energy Development, LLC
Gaia Human Capital
Germany Trade and Invest
Global Change Associates
Goldman Sachs
Good Energies, Inc
Gray Ghost Advisors
GreenOrder
Greentech Capital Advisors
Interstate Renewable Energy Council
Italian Trade Commission
J.P. Morgan
Japan External Trade Organization (JETRO)
K Road Power
Livingston Securities
Macquarie Capital
Milbank, Tweed, Hadley & McCloy LLP
Morgan Stanley
Mosaic Federal Affairs
National Grid USA
New Alternatives Fund
New Infrastructure Advisors
New Zealand Trade & Enterprise
NewWorld Capital Group
NorthWinds Advisors LLC
OwnEnergy, Inc.
Phillips Lytle LLP
Pliant Energy Systems
Portugal Global Business Development Agency (AICEP)
Powernetworks.org
Quebec Delegation General
REgeneration Finance, LLC
Rockefeller Brothers Fund
Scott-Macon Ltd
Solar & Environmental Technologies Corp.
Taylor Biomass Energy
TerraVerde Capital Management
The Prosser Group
Think Forward Financial Group
Utility Workers Union of America
Vencon Management
Verdant Power
Verizon Communications
Volvo Group North America
Weber Shandwick
White & Case LLP
Winston & Strawn, LLP
Woodlake Advisors

Renewable Energy in North Carolina

Summary

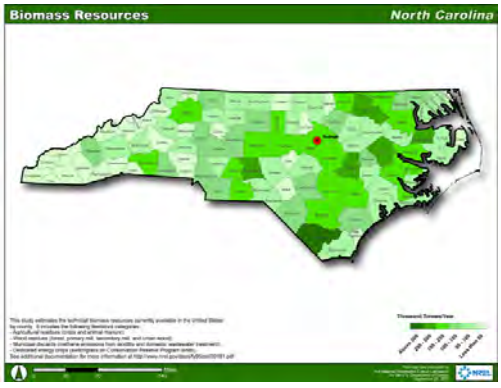
North Carolina has implemented a renewable portfolio standard (RPS) and a variety of initiatives to encourage its citizens, utilities, and commercial entities to increase use of renewable energy systems as an important element of the state's economy. North Carolina's coastline is situated at the point where the Labrador Current and the Gulf Stream meet in the Atlantic Ocean, which produces significant on and offshore wind energy potential.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	14.1 MW	Biomass Power	59 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	48.0 mGy
Small Hydro	-	**Totals**	73.1 MW; 48 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- North Carolina's biopower projects consist of four landfill gas facilities, one waste-to-energy facility, one forestry residue incineration facility, and one biogas anaerobic digestion facility located at a landfill. Plans are in the works for three additional incineration facilities which will use poultry litter as feedstock, presumably to meet the state's RPS carve-out for biopower from poultry litter.
- Once it is complete, North Carolina will be home to the 2nd largest solar PV project on the east coast. Phase II of the Davidson County solar project was expected to begin adding 13.4 MW to the existing 4 MW facility in December 2010. At least five other non-residential projects are in the development pipeline, all of which have received the necessary permitting.

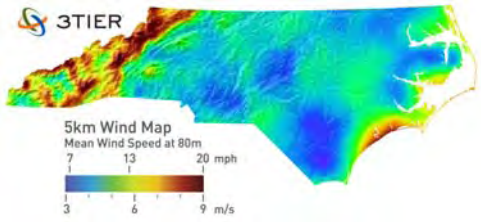


Biomass Resources- Dark green indicates an above average resource potential of 250 to 500 thousand metric tons of biomass a year. The state ranks 4th in forest residue resources with 2,995 thousand metric tons per year.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,092
Organizations	52
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/4 deals
Venture Capital & Private Equity (Grossed up)	$36.6m, 9 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$17.6m
Competitive Grants & Tax Credits (48C & 1603)	$10.0m, 26 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Wind Resources- North Carolina's greatest wind potential lies offshore and at the foothills of the Appalachian Mountains. The highest average winds occur throughout the counties of Avery, Watauga, and Ashe with average speeds reaching 7-7.5 m/s.

North Carolina

Policies

Renewable Portfolio Standard (RPS): North Carolina requires investor-owned utilities (IOUs) to produce 12.5% of their retail electricity sales from renewable resources (including solar electric and thermal, biopower, wind, geothermal electric, landfill gas, combined heat and power (CHP), hydrogen, anaerobic digestion, small hydroelectric and ocean energy) by 2021. Electric cooperatives and municipal utilities are required to produce 10% by 2018. Up to 25% of these obligations can be achieved through energy-efficiency technologies, including CHP systems fueled by non-renewable sources, until 2021, after which they may account for 40% of the standard. Specific requirements include 0.2% for solar power and swine waste by 2018 as well as 900,000 megawatt-hours (MWh) generated from poultry waste by 2014 for IOUs. Compliance is achieved through the procurement of Renewable Energy Credits (RECs) with 25% of RECs allowed from unbundled, out-of-state facilities. Although the North Carolina Utility Commission maintains the power to administer, adjust, and modify the RPS, there are currently no enforcement or penalty measures for non-compliance.

Net Metering and Interconnection: North Carolina requires IOUs to offer net metering to their customers for systems under 1 MW nameplate capacity with no aggregate capacity limit. Customers can elect any rate schedule available; however, customers taking payments on anything other than the Time Of Use schedule (TOU) surrender all RECs to the utility. Net excess generation (NEG) is credited to the customer's next billing cycle, until the summer's billing season, when utilities gain possession of used NEG credit. Interconnection standards have a three tiered approach to simplify the application process, modeled after the Federal Energy Regulatory Commission (FERC), and do not have restricted capacity. Systems do not need to be net metered to qualify for interconnection standards.

Grants: The North Carolina Green Business Fund provides businesses, organizations, and state and local government entities with grants up to $500,000 for deployment of renewable energy, biomass systems, waste-to-energy, and distributed transmission projects.

Tax Incentives: North Carolina offers an 80% property tax abatement for the fair market value of solar photovoltaic (PV) and solar thermal electric systems.

North Carolina offers a personal and corporate tax credit equal to 35% of the cost of new renewable energy property constructed, purchased, or leased. For residential customers, there is a maximum incentive of $1,400-$10,500, depending on technology. Commercial and industrial customers can receive a maximum of $2.5 million. In addition, these credits may be claimed in conjunction with the federal government's 30% Investment Tax Credit (ITC) program and Section 1603 Cash Grant program.

Renewable energy manufacturing facilities constructed or retooled between 2011 and 2013 are eligible for a tax credit worth 25% of the eligible costs of the facility, which includes construction and equipment costs.

Loans: North Carolina's Energy Improvement Loan Program (EILP) is available to business, local governments, public schools, and nonprofit organizations in order to finance renewable projects of up to $500,000 for ten years with a 1% interest rate.

ACORE Members in North Carolina

Abundant Power Group
Baker Renewable Energy
Duke Energy
Environment & Finance Enterprise
NCSU Solar Center
Novozymes North America
University of North Carolina at Chapel Hill

Renewable Energy in North Dakota

Summary

North Dakota's landscape is rich in mostly untapped biomass and wind energy resource potential. Although the state has a voluntary renewable portfolio standard, the non-binding approach has not established the price signals needed for the accelerated market growth of the renewable energy industry. State-provided tax incentives have helped to develop the wind and ethanol sectors; however, historically low energy prices still command conventional energy generation.

Cumulative Renewable Energy Capacity, 2010			
Wind	1,424 MW	Ocean	-
Solar Photovoltaic	-	Biomass Power	22 MW
Concentrated Solar Thermal	-	Bioethanol	353 mGy
Geothermal	-	Biodiesel	85 mGy
Small Hydro	-	**Totals**	1,446 MW; 438 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

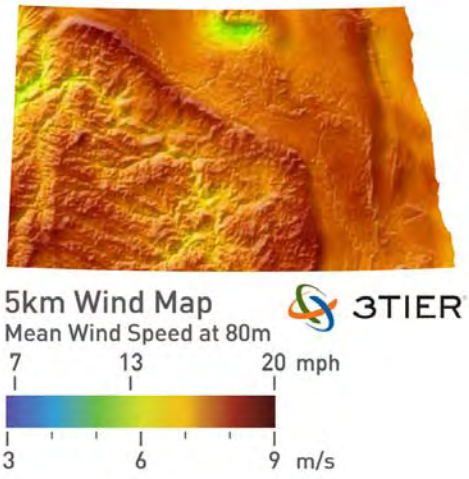
Market

- North Dakota is the 11th largest ethanol producing state in the nation. Bioethanol plants in Casselton and Hankinson alone produce more than 225 million gallons per year.
- North Dakota is ranked 9th in the nation in installed wind capacity. The state installed over 485 MW in 2009 alone.

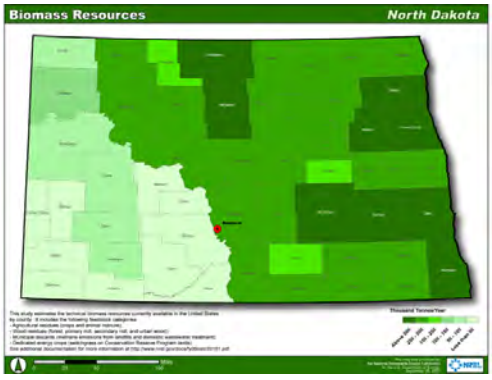
Economic Development

Employment	
Direct and Indirect Jobs, 2009	2,009
Organizations	13
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$662.0m, 4/6 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$1.7m
Competitive Grants & Tax Credits (48C & 1603)	$166.4m, 5 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Wind Resources- Potential wind resources throughout the state are estimated to be 1.21 billion MW (NREL).



Biomass Resources- North Dakota ranks first in the nation switchgrass resources with 10,476 thousand metric tons per year. The state also ranks 7th in crop residue resources with 6,602 thousand metric tons per year. Dark green represents the highest resource measured by NREL.

North Dakota

Policies

Renewable Portfolio Goal: North Dakota has established a voluntary objective that 10% of retail electricity sold in the state be obtained from renewable and recycled energy sources by 2015, including solar, wind, landfill gas, biopower, hydroelectric, geothermal electric, hydrogen, electricity from waste heat and anaerobic digestion. Renewable energy credits may be acquired from both in-state and out-of-state facilities. Retailers and suppliers are required to make an economic assessment determining the cost-effectiveness of renewable and recycled energy before deciding on the best option for meeting their consumers' electricity needs.

Net Metering: Investor-owned utilities (IOUs) are required to offer net metering to their customers that utilize renewable energy and/or combined heat and power (CHP) systems with a nameplate capacity of up to 100 kilowatts (kW). Any net excess generation (NEG) is purchased by the utility at the utility's cost-avoided rate. Customers retain title to RECs, except for the case of NEG when the utility becomes the title owner of RECs created, with compensation to the customer. There is no state-wide aggregate capacity limit for net metering systems, and utilities are permitted to cover all costs associated with a customer's net metering system. Interconnection standards are not provided.

Tax Incentives: North Dakota offers IOUs and commercial entities a property tax credit of 70% or 85% for centrally-assessed wind turbines with a nameplate capacity of 100 kW or larger.

Solar thermal and electric, geothermal thermal and electric, and wind systems are exempt from property taxes for the five years after installation.

A personal income tax credit is provided for individuals, estates and trusts for the cost of acquiring and installing a geothermal energy system, equal to 3% per year for five years (totaling 15%).

Corporate income tax credits are offered for 3% per year for five years of the actual costs acquiring or installing most renewable energy systems before January 1, 2015. In general, the excess credit may be carried over to each of the five succeeding taxable years if the amount exceeds the taxpayer's income tax liability, although there are some exceptions.

ACORE Member in North Dakota

BBI International

Renewable Energy in Ohio

Summary

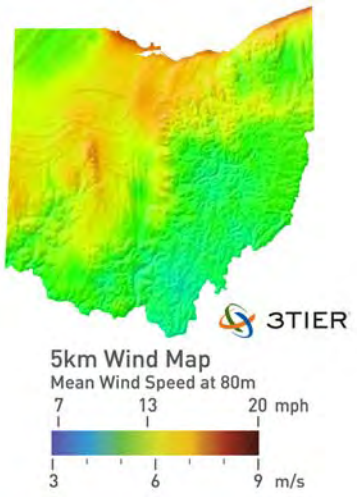
Ohio is becoming nationally recognized for the research and development of solar and wind energy technologies, and is emerging as a key player in the Midwest wind supply chain due to its proximity to large wind energy markets. The state also has a considerable biofuels market and is the 7th largest ethanol producer in the nation. With significant renewable energy resources from on and offshore wind power, solar power and bioenergy, and a multifaceted renewable energy policy portfolio, the state has tremendous potential to expand its emerging renewable energy markets.

Cumulative Renewable Energy Capacity, 2010			
Wind	11 MW	Ocean	-
Solar Photovoltaic	15.1 MW	Biomass Power	47 MW
Concentrated Solar Thermal	-	Bioethanol	538 mGy
Geothermal	-	Biodiesel	58.5 mGy
Small Hydro	-	**Totals**	73.1 MW; 596.5 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Ohio has more than 500 companies in the Ohio wind supply chain, and is becoming a leading U.S. component supplier for wind turbine original equipment manufacturers (OEMs). It is also home to three leading international suppliers who operate research and development centers for wind in the state.
- Ohio is investigating opportunities for offshore wind development, and is working on an offshore wind energy demonstration of several wind turbines to produce 5-20 MW, as well as a research center to research, test, and certify offshore wind technologies.
- Ohio is home to many leading solar industry firms which are engaged in the research, development, and commercialization of solar technologies. In 2010, Ohio commissioned one of its first utility-scale solar projects: a 12 MW plant in Wyandot County.
- A 50 MW solar array will be built on reclaimed land in the south-east part of Ohio, which would be the state's second large-scale solar farm and one of the largest projects in the nation. The project is said to have attracted two prominent Spanish solar manufacturers to set up facilities in Ohio to help supply panels needed for the project.



Wind Resources- Lake Erie offers some of the best potential in the Great Lakes region for offshore wind.

Biomass Resources- Dark green indicates an above average biomass resource. Ohio has 8 million dry tons of cellulose biomass and 10.1 million dry tons of crop biomass.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	4,803
Organizations	80
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$5.0m, 1/3 deals
Venture Capital & Private Equity (Grossed up)	$4.8m, 4 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.3m
Competitive Grants & Tax Credits (48C & 1603)	$117.8m, 50 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Ohio

Policies

Advanced Energy Resource Standard: Ohio mandates that investor-owned utilities (IOUs) and retail electric suppliers must provide 12.5% of their retail electricity supply from renewable energy sources by 2025 (including a 0.5% carve-out for solar electric). This is part of a broader standard to source 25% from alternative energy sources by 2025, which includes renewables, clean coal and nuclear power. Qualifying renewable energy sources include solar electric, wind, geothermal, biopower, landfill gas, qualified hydroelectric, waste-to-energy, fuel cells and certain storage facilities. Customer-distributed generation is also included. At least 50% must be met by in-state facilities, and the remaining 50% may be from facilities that deliver electricity to the state. Penalties for not meeting these standards include $45 per MWh for renewable energy deficiencies and $450 per MWh as Solar Alternative Compliance payments, yet utilities are not required to meet the benchmarks if doing so is expected to increase operating costs by 3% or greater. Only renewable energy credits (RECs) generated from facilities online after 2008 and over 6 kW may be used for compliance.

Net Metering and Interconnection: The net metering policy in Ohio applies to IOUs and has neither a project nor aggregate capacity limit. However, it does have an implied limit that customers not produce more electricity than they use. Customers may request refunds of net excess generation (NEG) credits after 12 months. Hospitals have different net metering tariffs wherein all electricity generated (used and otherwise) must be credited. IOUs also implement interconnection standards modeled after federal precedents, which include three levels of review for distributed generation systems up to 20 MW in capacity.

Tax Incentives: Ohio provides tax incentives to small and large businesses for new air quality projects, which includes renewable energy installations. These incentives include full tangible personal and real property tax exemptions (on property purchased as part of the project), an exemption on a portion of the corporate franchise tax, and a sales and use tax exemption. Energy facilities larger than 250 kW and built between 2009 and 2012 may be qualified to make a payment to the county in lieu of property tax of $7,000 per MW for solar energy facilities and ranging from $6,000 to $8,000 per MW (depending on the proportion of employees that are Ohio-based) for all other qualifying facilities.

Loans: Through the state loan program, homeowners who install solar electric and thermal, wind, geothermal heat pump systems are eligible for a maximum 3% rate reduction on a five-year loan for $25,000 or a seven-year loan for over $25,000 to $50,000. Terms of these loans vary by lending bank.

Industry Recruitment: The Ohio Job Stimulus Plan Advanced Energy Program awards funds to renewable energy projects that serve to "attract new investment to Ohio, build upon Ohio's manufacturing strength, advance energy technology development toward commercialization, and prepare Ohio's workforce for the future." $84 million is reserved for non-coal related projects in three annual appropriations administered by the Ohio Air Quality Development Authority (OAQDA). Bonds may be exempt from certain taxes and range from $50,000 to $2 million.

ACORE Members in Ohio

American Electric Power
Battelle
EdgeTech IG
Katzen International
PNC Energy Capital
The Babcock & Wilcox Company
Today's Energy Solutions Magazine
Wright Center for Photovoltaics Innovation & Commercialization- University of Toledo

Renewable Energy in Oklahoma

Summary

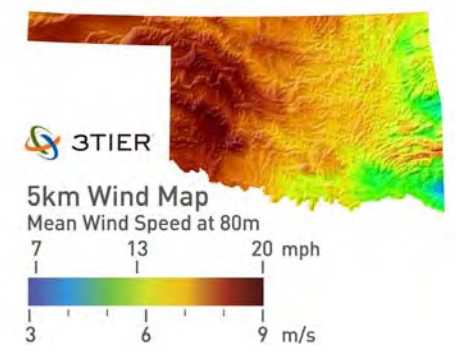
Oklahoma has a large wind industry that continues to expand, and boasts enough wind resources to supply 9% of the country's total electricity needs. The state also has growing biodiesel and ethanol industries. Oklahoma recently passed a voluntary 15% renewable energy standard to be achieved by 2015, which aims to create jobs and decrease dependence on carbon-intensive fuel sources.

Cumulative Renewable Energy Capacity, 2010			
Wind	1,482 MW	Ocean	-
Solar Photovoltaic	-	Biomass Power	17 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	42.4 mGy
Small Hydro	-	**Totals**	1,499 MW; 42.4 mGy

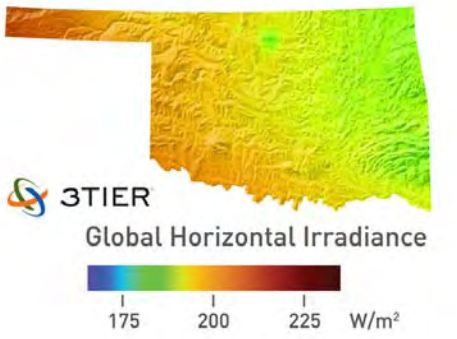
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Oklahoma is ranked 8th in the nation in installed wind power capacity, with 300 MW installed in 2009 alone. Japanese trading company ITOCHU and GE Energy Financial Services are jointly investing in a $319 million wind farm currently under construction in Woodward, as part of a partnership deal between the two companies to co-invest in renewable energy worldwide.
- Oklahoma has 3 biodiesel facilities and 1 ethanol facility in the state, which includes a 35.3 mGy biodiesel plant in Oklahoma that uses vegetable oils and animal fat to produce biodiesel.
- The Oklahoma Bioenergy Center (OBC) is a research and economic development collaboration between the University of Oklahoma, the Oklahoma State University, and the Samuel Roberts Noble Foundation working to cultivate the growth of Oklahoma's renewable energy industry.



Wind Resources- Oklahoma is rated 8th in the nation for its available wind resources, and has the potential to produce 4,300 MW of wind power.



Solar Resources- The state receives up to 215 W per square meter.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,466
Organizations	29
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$1,235.9m, 4/6 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$2.4m
Competitive Grants & Tax Credits (48C & 1603)	$65.6m, 6 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Oklahoma

Policies

Renewable Portfolio Goal: In 2010, Oklahoma established a goal for 15% of total generation capacity to be derived from renewable energy sources by 2015. Renewable energy sources including hydropower and hydrogen are eligible, and energy efficiency may be used to meet up to 25% of the goal. Utilities are not required to use renewable energy credits to demonstrate compliance; instead, each utility must file an annual report with the Oklahoma Corporation Commission to document their renewable energy usage.

Net Metering: Oklahoma requires investor-owned utilities (IOUs) and electric cooperatives under the commission's jurisdiction to offer net metering for customer-owned renewable energy systems and combined heat and power facilities of up to 100 kW for all customer classes. Utilities are not required to purchase net excess generation from customers, but customers may request that they do so.

Tax Incentives: In June 2010, Oklahoma established a two-year moratorium on many of its tax credit programs, including tax credits for renewable energy.

Loan Program: Oklahoma offers loans for public and nonprofit k-12 schools to reduce their energy consumption, which includes the installation of certain renewable energy systems. Loans generally cover 100% of the costs of the system, or up to $200,000 per eligible school district. There is a 3% interest rate and loans must be paid back within six years. The program is funded by oil overcharge restitution funds and has a budget of $1 million.

Oklahoma has also established a loan/lease fund for institutes of higher education to install renewable energy systems, including solar electric or thermal and wind systems. The loan amount varies, although there is a maximum incentive of $300,000. Loans must be repaid within one to six years at a 3% interest rate. The program's budget is $1.1 million.

The Oklahoma Department of Commerce operates a revolving loan fund that distributes loans of up to $150,000 for local governments to install solar thermal or electric, wind, biomass and other certain renewable energy systems. Loans must be repaid within six years, with a 3% interest rate. The program budget is $1 million.

Renewable Energy in Oregon

Summary

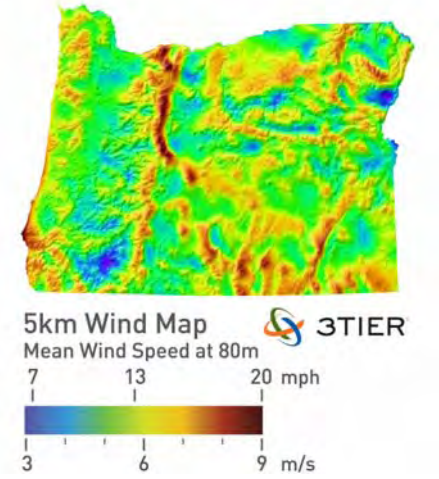
Oregon is on the leading edge of renewable energy production. It is one of the few states in the country undertaking wave power development, and a new wind project currently under development is scheduled to be the largest in the country to date. Oregon's tax credits for renewable energy have attracted many clean energy companies, particularly those involved in solar energy manufacturing. Recent technological and legislative developments across the board in wind, solar, biomass and waste, wave energy, geothermal and biofuels promise to provide Oregon with sustainable and diverse sources of energy for the future.

Cumulative Renewable Energy Capacity, 2010			
Wind	2,104 MW	Ocean	-
Solar Photovoltaic	14.2 MW	Biomass Power	64 MW
Concentrated Solar Thermal	-	Bioethanol	148 mGy
Geothermal	0.3 MW	Biodiesel	5 mGy
Small Hydro	16 MW	**Totals**	2,198.5 MW; 153 mGy

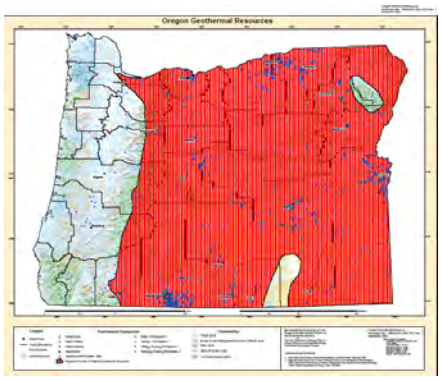
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Oregon has seen an influx of solar manufacturers due to the state's expertise in silicon, a skilled workforce, a network of suppliers, active solar development, and generous subsidies. It is likely to become a major solar manufacturing center within the next few years (GTM Research).
- Oregon is ranked fifth in the nation for installed wind capacity, and installed the most new capacity in the nation in Q3 2010. The largest wind farm in the nation is under development in eastern Oregon: the 845 MW Caithness Shepherds project. In December 2010, the U.S. Department of Energy provided the project with a partial loan guarantee for a $1.3 billion dollar loan.
- The first U.S. commercial wave power farm is being constructed off Oregon's coast near Reedsport. It will represent the first phase of a wave power station that will have a generating capacity of 1.5 MW.
- Oregon is home to a biodiesel facility and a bioethanol facility that together produce 45 million gallons annually. The facilities are powered by cooking oil from local companies and by corn, respectively.



Wind Resources- Good to excellent resource areas are concentrated on ridge crests throughout the state. Oregon has over 1 million acres of windy land which could produce up to 70 million MWh per year.



Geothermal Resources- Oregon has an outstanding geothermal resource in many areas of the state, which is viable for commercial-scale electricity production. The U.S. Interior Department identifies seven sites in Oregon as among the 35 "highest potential" geothermal regions in the country.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	6,366
Organizations	55
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$2,347.9m, 8/12 deals
Venture Capital & Private Equity (Grossed up)	$77.0m, 10 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$6.2m
Competitive Grants & Tax Credits (48C & 1603)	$424.3m, 61 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Oregon

Policies

Renewable Portfolio Standard (RPS): Oregon's RPS requires large utilities to procure 25% of their electricity sales from qualifying renewable energy sources by 2025 (which includes a limited number of hydropower facilities operational before 1995 and less than 11 MW of municipal solid waste each year). Smaller utilities are required to meet reduced targets (5% or 10% renewable energy by 2025), depending on their size. Investor-owned utilities (IOUs) must together develop 20 MW of solar PV by 2020. Oregon caps the amount of unbundled renewable energy credits (RECs) that utilities can use at 20% to meet RPS obligations.

Net Metering and Interconnection: Oregon has separate net metering programs for the state's primary investor-owned utilities (IOUs) and for its municipal utilities and electric cooperatives. For IOUs, the system capacity limit is 2 MW for non-residential and 25 kW for residential systems. For non-IOUs, the limit is 25 kW for non-residential and 10 kW for residential systems. Net excess generation is credited to an IOU customer's next bill at the utility's retail rate, but varies for non-IOUs. Interconnection capacity limits for IOUs are the same as for net metering, but are limited to 0.5% of a utility's historic single-hour peak load for non-IOUs. There are three levels of review for IOU customers and special rules for the interconnection of small, non-net metered generator facilities up to 10 MW and large generator facilities over 20 MW.

Production Incentive: Oregon's current pilot program differs from a typical "feed-in tariff." The rules and rates for the program are determined by the Oregon Public Utilities Commission and are offered and administered by the state's three IOUs. The pilot program installation cap is limited to an aggregate cap of 25 MW of solar PV, with a maximum system size cap of 500 kW. The incentive rate is set at time of enrollment and depends on system size and geographic zone. Unlike the German feed-in tariff model, the power produced onsite offsets the owner's electric costs. Payment to the producer is made for kilowatt-hours generated over a period of 15 years. The third round of bidding begins in April 2011. Current incentive rates range from $0.495 and $0.585 per kWh.

Tax Incentives: The Business Energy Tax Credit (BETC) applies to businesses that install or manufacture renewable energy systems, with differing cost return percentages and different maximum payouts depending on technology type, up to a state maximum credit of 50% of certified project costs or up to $20 million for manufacturing facilities and $10 million for renewable energy projects ($2.5 million for wind projects over 10 MW). The program allows public entities without tax liability to elect the "pass-through option," which allows a project owner to transfer the BETC eligibility to another entity in exchange for a lump-sum cash payment upon completion of the project. As a response to complaints of program abuse, a new tiered priority system opened in June 2010.

Personal tax credit rates for residential systems differ by technology. PV systems and fuel cells are eligible for the highest credit at $3 per peak watt with a maximum limit of $6,000, up to 50% of the installed cost .

In addition, Oregon law states that the added value from the installation of a qualifying renewable energy system may not be included in the assessment of the property's value for property tax purposes.

Rebates and Grants: The Energy Trust of Oregon, an independent nonprofit association, manages eight state-wide rebate and grant programs to provide a broad array of incentives for renewable energy installations, including rebates for solar water heating, solar PV, geothermal heat pumps, community wind projects of up to 20 MW in capacity, and small wind projects of up to 100 kW in capacity. Visit the website for more information: http://energytrust.org/residential/incentives

Loan Program: The Oregon Small-Scale Energy Loan Program (SELP) offers low-interest loans for renewable energy. There is no maximum loan amount; however, they generally range from $20,000 to $20 million and must be paid back within 5 to 15 years.

Public Benefit Fund (PBF): The Energy Trust of Oregon administers Oregon's PBF. The fund generates $13.8 million for renewables annually by requiring Pacific Power and Portland General Electric to collect a 3% public-purpose charge from their customers.

ACORE Members in Oregon

Agilyx
Christine Ervin Co (E/CO)
Ella Wind Development
Lane Community College
Stoel Rives LLP

Renewable Energy in Pennsylvania

Summary

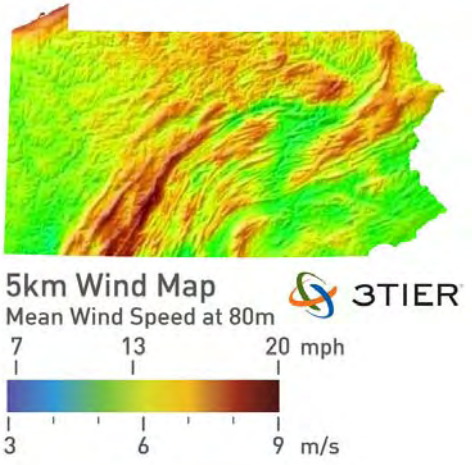
Pennsylvania is home to developing wind, solar, and biomass energy markets which hold significant opportunity for expansion. The state has been particularly successful in attracting renewable energy manufacturers, creating over 5,000 renewable energy jobs. However, Pennsylvania's alternative energy portfolio standard requires a greater percentage of generation from alternative energy sources, such as waste coal and coal gasification, than from renewable energy sources. This could slow deployment of renewable energy systems in the foreseeable future.

Cumulative Renewable Energy Capacity, 2010			
Wind	748 MW	Ocean	-
Solar Photovoltaic	38.3 MW	Biomass Power	445 MW
Concentrated Solar Thermal	-	Bioethanol	110 mGy
Geothermal	-	Biodiesel	54 mGy
Small Hydro	29 MW	**Totals**	1,260.3 MW; 164 mGy

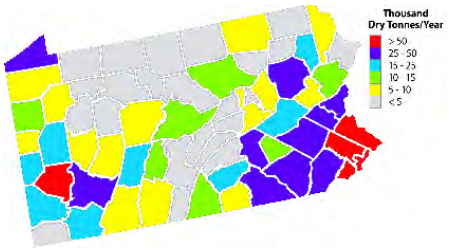
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- The state installed over 385 MW of wind power in 2009 alone, but development slowed in 2010 and no new wind projects were commissioned. Four projects are in the development pipeline, although none are in the construction phase.
- Pennsylvania is home to at least three major original equipment manufacturer (OEM) wind turbine plants. Two of the plants manufacture gearboxes and blades, while the other plant is devoted to assembly.
- Pennsylvania is home to a large vertically-integrated solar photovoltaic manufacturing plant that offers solar products at all stages of the manufacturing process.
- In November 2010, Pennsylvania announced it would invest $8 million for 21 alternative fuels projects, including biofuels, natural gas, and electric powered vehicles. The projects are expected to create 221 jobs and cut carbon dioxide emissions by 14.5 million pounds.



Wind Resources- Pennsylvania has a wind resource up to 9 m/s.



Biomass (Forest Residue) Resources- Red represents a superb resource area while blue and purple indicate excellent to superb. Pennsylvania ranks 2nd in secondary mill resources with 127 thousand metric tons per year and 7th in urban wood waste with 1,238 thousand metric tons per year in the United States.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	5,099
Organizations	93
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$396.0m, 4/4 deals
Venture Capital & Private Equity (Grossed up)	$23.5m, 3 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$4.6m
Competitive Grants & Tax Credits (48C & 1603)	$280.4m, 169 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Pennsylvania

Policies

Alternative Energy Portfolio Standard: Pennsylvania requires each electric distribution company (EDC) and electric generation supplier (EGS) to supply 18% of their electricity using alternative energy sources by 2020. This includes 8% from "Tier I" resources including both new and existing solar PV and thermal, wind, low-impact hydro, geothermal, biomass, biologically-derived methane gas, coal-mine methane, and fuel cell systems; and 10% from "Tier II" resources including both new and existing distributed generation systems, large-scale hydro, municipal solid waste, wood-pulping and manufacturing by-products, demand-side management, waste coal, and integrated gasification combined cycle coal technology systems. There is a 1.5% set-aside for solar PV systems. The standard also includes an alternative compliance payment (ACP) provision of $45 per MWh. For the solar carve-out provision, EDCs and EGSs must pay two times the sum of the market value of solar alternative energy credits (AEC), in addition to the fair value of up-front rebates received by sellers of solar AECs. AECs are allowed to be used as long as their production is verified by metered data on systems of 15 kW or more.

Net Metering and Interconnection: Pennsylvania requires investor-owned utilities (IOUs) to offer net metering to residential customers up to 50 kW in capacity, nonresidential customers up to 3 MW, and emergency and micro-grid systems up to 5 MW (which are above 3 MW). Net excess generation (NEG) is credited to the customer's next bill at the full retail rate. Customers are compensated for remaining NEG after the 12 month billing cycle and retain ownership to all AEC created. Virtual meter aggregation is allowed for properties the customer owns or leases within two miles of their property and within the same utility's service territory. Pennsylvania provides interconnection standards for net metered systems up to 5 MW, with four levels of review depending on system size and type.

Rebates: Under its Sunshine Program, Pennsylvania offers rebates to residential and commercial businesses that install PV and solar thermal systems, of more than 1 kW or 3 kW, respectively. Rates are as follows: $0.75 per W for residential PV (up to the lesser of $7,500 or 35% of installed costs); $0.50 - $0.75 per W for commercial PV (up to the lesser of $52,500 or 35% of installed costs); 35% of the installed costs of solar thermal systems (up to $5,000 for residential and $50,000 for commercial); and 35% of the installed costs of low-income systems. There is a total program budget of $100 million, funded by state bonds.

Solar Renewable Energy Credits: Pennsylvania offers incentives for solar production to help electricity suppliers meet their compliance obligations under the state RPS. There are no system size limitations and prices vary on market conditions but can range from $0.40 -$0.60 per kWh.

Tax Incentives: Pennsylvania allows wind turbines and related equipment (including towers and foundations) to be exempt from the valuation of property value by state tax assessors, but also provides an alternative valuation method.

Loans and Grants: The state offers programs for a range of residential and commercial renewable energy systems for varying grants, loans and industry incentives. Visit the state websites for more information: http://www.portal.state.pa.us/portal/server.pt/community/grants_loans_tax_credits/10395; http://www.newpa.com/find-and-apply-for-funding/alternative-energy-funding

Clean Energy Fund: Pennsylvania has four sustainable energy funds, created and overseen by the state's five major utilities. The funds aim to promote the development and use of renewable energy and advanced clean -energy technologies, energy conservation and efficiency, and sustainable-energy businesses. The funds have provided more than $20 million in loans and $1.8 million in grants to over 100 projects.

ACORE Members in Pennsylvania

Ballard Spahr Andrews & Ingersoll
Broadlands Financial Group, LLC
Drinker Biddle & Reath LLP
Element Partners
Exelon Corporation
Franklin and Marshall College
Harvel Plastics
Pardee Resources Company
Pennsylvania State University
Viridity Energy Inc
Wilson Engineering Services

Renewable Energy in Rhode Island

Summary

With some of the highest electricity prices in the nation and strong dependence on imported electricity, Rhode Island is in the initial stages of building its renewable energy sector in order to diversify its in-state energy fuel sources and decrease energy price volatility. The previous governor set a goal of meeting 20% of the state's electricity needs with renewable resources by 2012 (separate from the state's 16% renewable portfolio standard by 2020), including 15% from wind power. In 2007, a report noted that nearly 98% of the potential wind capacity needed to satisfy this goal is located offshore (Rhode Island Office of Energy Resources).

Cumulative Renewable Energy Capacity, 2010			
Wind	2 MW	Ocean	-
Solar Photovoltaic	0.6 MW	Biomass Power	12 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	-
Small Hydro	-	**Totals**	14.6 MW

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Two offshore wind farms are under development: the $205 million Deepwater Block Island project, to have a capacity of 28.8 MW; and the $5 billion Deepwater Wind Center, to have a capacity of 1 GW. The project developer is also building an undersea transmission network which will connect the projects to load centers. The network will stretch from Massachusetts to New York and cost an additional $500 million to $1 billion.
- Rhode Island has also announced plans for a $45 million wave energy pilot project near Block Island to have a capacity of 1.5 MW. The initial phase of the project would be followed by a further 15 to 20 MW facility off the mainland.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	281
Organizations	11
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$80.5m, 2/2 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.0m
Competitive Grants & Tax Credits (48C & 1603)	$155.2m, 1 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Wind Resources- Rhode Island has average onshore wind resources and above average offshore resources.

Biomass Resources- Light green indicates moderate biomass potential. The state has about 174 thousand metric tons a year of biomass resources. Wood waste accounts for about 1/3.

Rhode Island

Policies

Renewable Portfolio Standard (RPS): Rhode Island requires the state's investor-owned utilities (IOUs) and retail electric suppliers to provide 16% of their retail electricity sales from renewable energy technologies (individual hydroelectric facilities must not exceed 30 MW) by the end of 2019. Electricity providers may purchase renewable energy credits (RECs) generated from qualified renewable energy technologies to satisfy their compliance requirements. RECs sold may not be claimed by any other electricity supplier or used by electric utilities to meet renewable portfolio standards or emissions restrictions. A separate standard, the Long Term Contracting Standard for Renewable Energy, requires electric distribution companies to solicit proposals and enter into long-term contracts for new, in-state renewable energy facilities. Of this requirement, 90 MW must be contracted by 2014, with at least 3 MW from solar.

Net Metering: Rhode Island requires its investor-owned utilities (IOUs) to offer net metering to customers who install solar or wind systems. The individual system capacity limit for net metering is 3.5 MW for systems owned by cities, towns or the Narragansett Bay Commission; 2.25 MW for systems cited on their land but not owned by cities or towns; and 1.65 MW for other customers. IOUs must offer net metering until aggregated system capacity reaches 2% of a utility's peak load (1 MW is reserved for systems under 25 kW). For net excess generation (NEG), the customer has the option to either roll a credit over to the next billing period at slightly less than the retail rate or receive a monthly check. Rhode Island does not have statewide interconnection standards. After a 12-month period, credited NEG is used to offset recoverable utility costs.

Tax Incentives: Rhode Island offers a personal and corporate tax credit for the installation of solar electric and thermal, wind, and geothermal heat pump systems on residences. The tax credit is equal to 25% of the system costs and is only available to the resident or business that pays for the system. There is a maximum system cost of $15,000 for PV, solar space heating and wind systems and $7,000 for solar hot water and geothermal systems. Unused credits in the year of installation may not be carried over to subsequent tax years.

Solar electric systems, inverters for solar electric systems, solar thermal systems, manufactured mounting racks and ballast pans for solar collectors, geothermal heat pumps, and wind turbines and towers are exempt from the state's sales and use tax.

Rhode Island allows residentially installed PV, solar hot water systems, and active solar space heating systems to be assessed for municipal property tax purposes at no more than the value of a conventional system.

Grants and Loans: The Rhode Island Economic Development Corporation (RIEDC) provides financial assistance for renewable energy projects. The programs are funded through the Rhode Island Renewable Energy Fund (RIREF) which is supported from a surcharge on electric customer's bills of $0.0023/kWh. There are four program areas:

The *Nonprofit Affordable Housing Investment Program* provides up to two $100,000 awards per year.

The *Municipal Renewable Energy Investment Program* provides $500,000 per award per year ($1 million program cap) for municipalities.

The *Pre-Development Consultant and Technical Feasibility Program* provides funding of up to $200,000 per year for business, commercial, nonprofit, municipal and institutional projects. There is no project cap or limit.

The *Renewable Energy Development Program* provides up to $750,000 per award for business, commercial, nonprofit and institutional projects.

Renewable Energy in South Carolina

Summary

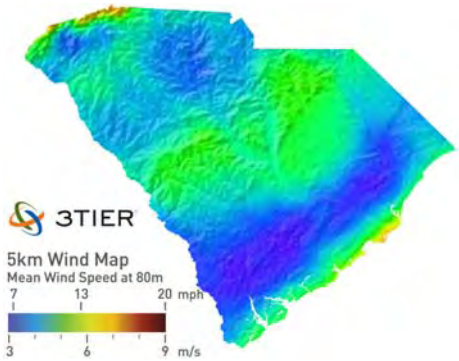
South Carolina has significant renewable energy development potential from its offshore wind and biomass resources. The state provides substantial tax incentives and loans that provide support for the industry's expansion, but the lack of a renewable energy standard has resulted in slow growth. As the offshore wind industry matures, South Carolina will be poised to become a leader in offshore wind energy generation.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	0.1 MW	Biomass Power	80 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	88 mGy
Small Hydro	-	**Totals**	80.1 MW; 88 mGy

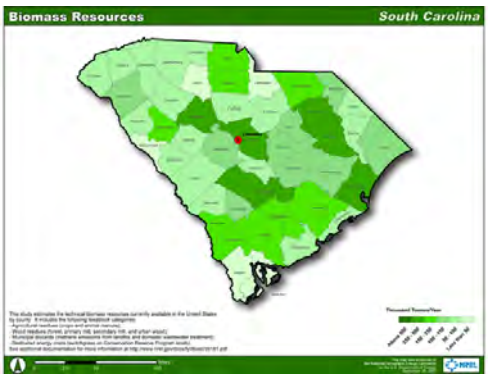
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- South Carolina is home to three biodiesel plants and one pilot bio-oil plant. Plans for three bioethanol plants have been announced, ranging from a 0.1 mGy cellulosic ethanol pilot plant to a 109 mGy corn-based fuel ethanol plant.
- South Carolina generates biomass power through landfill gas power, gasification, and incineration.
- A thin film solar manufacturer has announced plans to build a facility in Richland County, which would create 1,000 jobs over the next four years. The facility will begin producing CIGS solar cells by the beginning of 2012 and grow to 1 GW in annual capacity by 2015.
- When it is complete in early 2011, a facility in North Charleston is being developed to test large wind turbines of up to 15 MW, likely to be used in offshore wind farms.



Wind Resources- South Carolina's onshore wind resources are less than average, but its offshore resources offer sufficient potential for the development of large-scale wind farms.



Biomass Resources- South Carolina has about 6,315 thousand metric tons per year of biomass resources. Primary Mill waste accounts for about 1/4 of all biomass resources at 2,468 thousand metric tons per year.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,129
Organizations	10
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$40.0m, 1/2 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$45.6m
Competitive Grants & Tax Credits (48C & 1603)	$18.7m, 8 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

South Carolina

Policies

Net Metering and Interconnection: The South Carolina Public Service Commission issued a vague directive in 2008 for investor-owned utilities (IOUs) in South Carolina to offer net metering to its customers. Three IOUs have developed rules to provide net metering for residential systems up to 20kW and commercial systems up to 100kW. Aggregate net metering may not exceed 0.2% of the IOU's peak retail demand, and all customers must accept a time-of-use (TOU) tariff with historically high demand charges or otherwise pay additional fees. The same system and aggregate capacity limitations exist for interconnection standards.

Tax Incentives: A personal and corporate tax credit is provided for 25% of the eligible costs for the purchase and installation of solar (electric and thermal) and small hydropower systems. There is a maximum credit of $3,500 per year or 50% of the taxpayer's tax liability for that taxable year. Excess credit may be carried forward up to 10 years.

A tax credit is provided for up to 25% of the eligible costs of biomass energy systems. A maximum of $650,000 per year is provided, and the credit may not exceed 50% of the tax liability. Excess credit may be carried forward for 15 years.

The state allows a 100% sales tax exemption for any device, equipment, or machinery used to generate, produce, manufacture, or distribute hydrogen or fuel cell applications.

Loans: The state provides loans ranging from $25,000 to $500,000 for nonprofit, public, and institutional entities who install solar PV, biomass, geothermal heat pumps, and other unidentified renewable energy systems.

Production Incentives: Through the Energy Freedom and Rural Development Act, the state provides an incentive of $0.01 per kilowatt-hour (kWh) for electricity generated and $0.30 per therm (100,000 Btu) for energy produced from biomass systems utilizing landfill gas, CHP, and anaerobic digestion technologies. There is a maximum incentive of $100,000 per fiscal year per taxpayer, and $2.1 million per fiscal year for all taxpayers.

ACORE Members in South Carolina

Furman University
Normandeau Associates, Inc.
Santee Cooper

Renewable Energy in South Dakota

Summary

In order to diversify its energy portfolio, which is currently dominated by coal and hydroelectric power, South Dakota is steadily developing its wind and bioethanol markets. The state has implemented a renewable portfolio goal that opens the door for more aggressive policies. In addition, the state's tax credit for wind energy supports many of the development costs for building wind farms. With further policy support, South Dakota has a significant opportunity to benefit from its switchgrass, wind, and crop residue resources.

Cumulative Renewable Energy Capacity, 2010			
Wind	709 MW	Ocean	-
Solar Photovoltaic	-	Biomass Power	22 MW
Concentrated Solar Thermal	-	Bioethanol	1,016 mGy
Geothermal	-	Biodiesel	7 mGy
Small Hydro	-	**Totals**	731 MW; 1,023 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

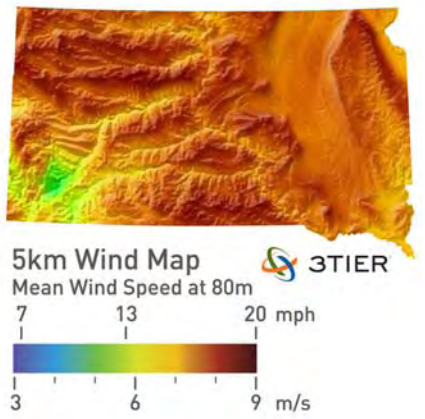
Market

- South Dakota ranks sixth among all other states for bioethanol production, most of which is derived from corn.
- The state's wind power market has experienced significant growth over the past three years. Plans have been announced for over 7 GW of new projects, including the 5 GW Titan II wind farm near Ree Heights, likely to be developed in many stages.

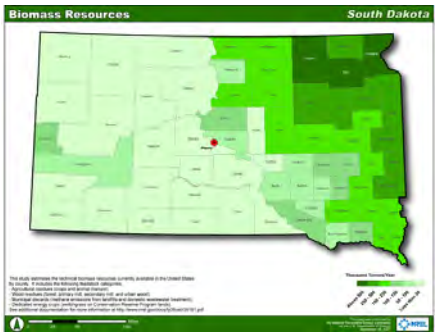
Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,135
Organizations	27
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$250.0m, 1/2 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$3.5m
Competitive Grants & Tax Credits (48C & 1603)	$54.7m, 4 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Wind Resources- South Dakota has several regions with excellent wind resource classifications. The American Wind Energy Association (AWEA) ranks South Dakota's wind resources as fourth in the nation.



Biomass Resources- South Dakota has about 10,342 thousand metric tons per year of biomass resources. Crop residue and switchgrass on Conservation Reserve Program (CRP) lands each account for about half of its total biomass resources.

South Dakota

Policies

Renewable Portfolio Goal: South Dakota set an voluntary objective that 10% of all retail electricity sales in the state be obtained from renewable, conserved, and recycled energy by 2015. The objective applies to all retail providers of electricity in the state, but, as a voluntary objective, there are no penalties or sanctions for non-compliance. Beginning July 1, 2009, retail providers must report annually to the Public Utility Commission (PUC) on their attainment status, steps taken to meet the objective, and any challenges or barriers they have encountered.

Interconnection Standards: South Dakota's interconnection standards for distributed generation apply to customers of investor-owned utilities. They provide for four levels of interconnection for systems up to 10 MW in capacity. The IEEE 1547 technical standard is used for all interconnections. Utilities are authorized to require the use of an external disconnect switch.

Tax Incentives: South Dakota provides a sales, use, and excise tax refund to applicable wind energy facilities, electric transmission lines and associated facilities, and business facilities that manufacture or distribute wind or transmission components. The tax refund schedule is determined by a percentage of the taxes paid. Eligible projects costing $10 million - $40 million receive a 45% refund of the taxes paid, and projects costing over $40 million receive a 55% refund of taxes paid.

For wind farms of more than 5 MW of capacity, South Dakota also has an alternative tax assessment method, which allows a reduced tax of $3 per kW of capacity and 2% of the gross receipts of the wind farm. Partial rebates are available for transmission line and collector system equipment that serves an eligible facility.

The first $50,000 or 70% of the assessed value of all real property used or constructed for renewable energy systems under 5 MW is exempt from the real property tax.

ACORE Members in South Dakota

DAK Renewable Energy
POET Biorefining

Renewable Energy in Tennessee

Summary

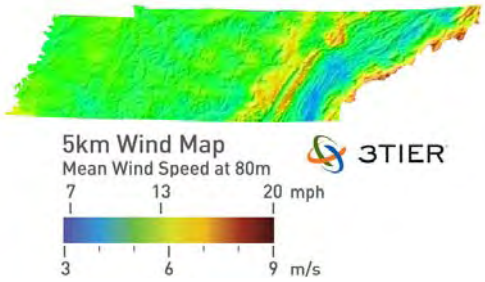
Through its tax incentives, grants and other supportive policies, Tennessee has created an environment to spur economic growth and employment in the renewable energy industry. The industry is still young, and there is significant potential to develop the state's vast biomass and wind resources to support its continued growth, particularly through the addition of a renewable portfolio standard. Until further commitment is made, the development of these resources may remain slow.

Cumulative Renewable Energy Capacity, 2010			
Wind	29 MW	Ocean	-
Solar Photovoltaic	4.3 MW	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	177 mGy
Geothermal	-	Biodiesel	66.5 mGy
Small Hydro	-	**Totals**	33.3 MW; 243.5 mGy

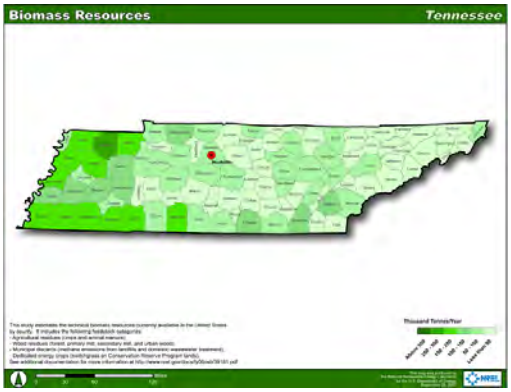
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- The Oak Ridge National Laboratory, located in Tennessee, is a world class authority on the research and development of bioenergy and other clean technologies.
- Tennessee recently opened one of the country's few cellulosic ethanol demonstration facilities in Vonore.
- The state's planned manufacturing activities include: a $200 million solar ingot manufacturing plant under development in Clinton, which will provide 250 full time jobs when complete; a $1.2 billion polysilicon manufacturing mega-facility in Clarksville, to open in 2012 and provide 500 full time jobs; and a $1 billion polycrystalline manufacturing facility under development in Charleston.



Wind Resources- Average wind speeds along the Tennessee-North Carolina border reach speeds of 6.5-7 m/s.



Biomass Resources- Tennessee has about 6,745 thousand metric tons per year of biomass resources. Forest residue and primary mill residue each account for about one quarter of all total biomass resources.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,907
Organizations	28
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/0 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$2.3m
Competitive Grants & Tax Credits (48C & 1603)	$133.8m, 29 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Tennessee

Policies

Loans: Tennessee offers low-interest, seven year loans of up to $300,000 for solar electric and thermal, wind, biomass, and geothermal electric systems installed by commercial and industrial entities with fewer than 300 employees or less than $3.5 million in annual gross sales or receipts. Businesses in the Three-Star communities are eligible for a 0% interest rate, and all others have a 3% interest rate. The program is funded by oil overcharge restitution funds.

The Solar Innovation Grant program provides grants to commercial and industrial entities in the solar industry for a variety of purposes, including: training programs, reducing costs through process improvements, and increasing the use of renewable energy in operations. Grants of $100,000 to $500,000 are available. Of the award, 20% is granted up-front and the rest is administered along with project deliverables that the grantee must regularly report. The program has a budget of $7.25 million with funds from the American Recovery and Reinvestment Act. The deadline for the most current round of funding was January 20, 2011, and the program will remain closed until more funding becomes available.

Tax Incentives: Wind energy systems operated by public utilities, businesses, or industrial facilities cannot be taxed at more than one-third of their total installed cost.

Manufacturers of clean energy technologies may have their tax rate reduced to 0.5%. Qualifying manufacturers must make a minimum $100 million investment; create and maintain 50 full-time jobs for 10 years that pay 150% above the Tennessee occupational average wage; and, the taxpayer must be subject to the franchise and excise taxes.

Tax credits of up to $1.5 million, applied to a company's Franchise and Excise Tax liability, are provided to industries that invest more than $250 million into the state within three years.

ACORE Members in Tennessee

Oak Ridge National Laboratory
Tennessee Valley Authority

Renewable Energy in Texas

Summary

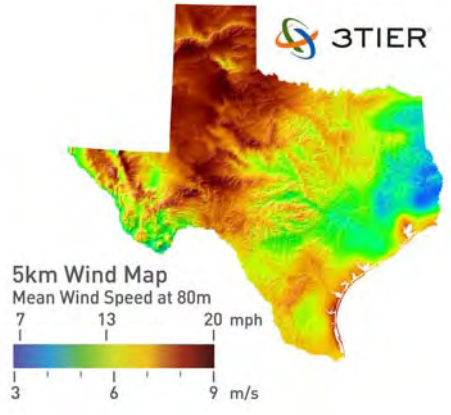
Texas boasts massive resource potential in multiple renewable energy sectors, giving it a diverse fuel mix as the demand for clean energy grows. Texas leads the nation in wind power generation, with more than twice the installed capacity as the next closest state. In addition, Texas has more biodiesel capacity than any other state in the nation. Other technologies, including electricity from biomass, solar photovoltaics, and geothermal sources show huge promise and will undoubtedly be further developed in coming years.

Cumulative Renewable Energy Capacity, 2010			
Wind	10,085 MW	Ocean	-
Solar Photovoltaic	25.4 MW	Biomass Power	82 MW
Concentrated Solar Thermal	-	Bioethanol	250 mGy
Geothermal	-	Biodiesel	662.1 mGy
Small Hydro	6 MW	**Totals**	10,198.4 MW; 912.1 mGy

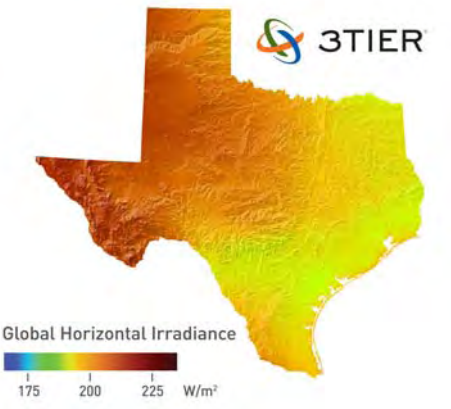
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Texas has the largest wind market in the nation, responsible for 7.8% of electricity generation in 2010. Another 12,700 MW of wind power projects are being considered by various developers. Texas is home to one of the world's largest wind farms: the 781.5 MW Roscoe Wind Farm, which has the capacity to power 230,000 residences. The project took approximately 500 workers and an investment of over $1 billion to complete.
- Texas offers an attractive market for wind manufacturers, and is home to three major original equipment manufacturer (OEM) facilities as well as one in development. There is also a thin film solar manufacturing plant in the state.
- The main obstacle to the growth of renewable energy in Texas is the lack of transmission lines. Texas has developed the $5 billion Competitive Renewable Energy Zones (CREZ) plan to expedite the process of identifying the "best" renewable energy resource zones and building transmission lines from these zones to population centers.



Wind Resources- Texas has the second best wind resource in the country, with 136,100 MW of potential capacity. There is significant wind power potential in the Great Plains, the Gulf Coast and specific areas in the Trans-Pecos region.



Solar Resources- Texas is a leader in solar resource potential, with high levels of direct solar radiation suitable to support large-scale solar power plants. West Texas has 75% more direct solar radiation than East Texas, and is an ideal location for utility scale CSP projects.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	10,989
Organizations	262
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$1.0bn, 5/14 deals
Venture Capital & Private Equity (Grossed up)	$236.3m, 17 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$27.1m
Competitive Grants & Tax Credits (48C & 1603)	$1,395.4m, 52 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Texas

Policies

Renewable Portfolio Standard (RPS): Texas was one of the first states to adopt rules for a renewable energy mandate, establishing a Renewable Portfolio Standard (RPS), a Renewable Energy Credit (REC) trading program, and renewable energy purchase requirements for competitive retailers in the state. The RPS requires 5,880 MW to be generated from eligible renewable energy technologies, with a target of 500 MW generated from non-wind technologies. Furthermore, the mandate established a goal of 10,000 MW of renewable energy capacity by 2025. Compliance for retail providers under the RPS is calculated using a capacity conversion factor (CCF), of 30.5% for 2010 and 2011, in order to translate MW goals into MWh requirements. A "compliance premium" is offered for each non-wind REC generated after December 31, 2007, doubling the compliance value of renewable resources other than wind.

In 2009, Texas had reached its goal of having 10,000 MW of renewable energy capacity, 15 years ahead of schedule, with 97% coming from wind. This was the second time that Texas had reached its RPS target ahead of schedule, passing its original mandate from 1999 three years early, in 2006. The state is also investigating how to use its RPS to effectively boost development of its renewable energy resources besides wind.

Revolving Loan Program: The LoanSTAR Program offers low-interest loans of up to $5 million to public entities for the installation of solar electric and thermal, wind, and geothermal heat pump systems. Loans are repaid through energy cost savings over ten years or less, with interest rates at 3% APR. The program budget is $126 million, including funds from the Petroleum Violation Escrow Funds and the American Recovery and Reinvestment Act.

Interconnection Standards: Interconnection rules apply to customers of investor-owned utilities that install renewable energy systems up to 10 MW. There are four levels of review, based on system size, and there are no pre-connection fees for systems less than 500 kW. Texas utilities are authorized but not required to offer net metering.

Grants: The Texas Department of Rural Affairs (TDRA) offers grants to qualified local, non-entitlement governments (of under 50,000 residents) for the installation of renewable energy systems. The program budget for 2011 is $681,000, funded by the Federal Community Development Block Grant (CDBG).

Tax Incentives: Texas offers a franchise tax exemption for companies that have a primary business of manufacturing, selling, or installing solar devices that store or produce energy for onsite usage. The franchise tax is the Texas equivalency to the corporate state tax. There is no ceiling on this exemption. Texas also allows a franchise tax deduction of 10% of the amortized cost of a wind or solar system from the company's apportioned margin.

Texas offers a property tax exemption for the value added by the installation or construction of renewable energy systems at commercial, industrial or residential buildings.

Municipal Leadership (Austin, TX): The municipal utility of Austin has been guided under the City Council's Climate Protection Plan to provide 50% of its energy from renewable energy sources by 2020 with 200 MW being generated from solar systems. Accordingly, Austin has required city facilities to purchase 100% renewable energy by 2012 through various power purchase agreements (PPAs), and to make the entire city vehicle fleet carbon neutral by 2020. Austin Energy has also established a net metering program for renewable energy systems, up to a maximum capacity of 20 kW for all retail electricity customers.

ACORE Members in Texas

AIT Consulting Ltd
American Electric Technologies, Inc.
Atlas Markets
Austin Chamber of Commerce
Austin Community College District
Austin Energy
BP Alternative Energy USA
Carlyle Capital Markets Inc.
Cedars Capital, LLC
Fluor Corporation
GHD, Inc.
Green Mountain Energy Company
Hattery Schwartzenburg PLLC
Hunt Power, L.P.
Standard Renewable Energy
Texas Renewable Energy Industries Association
University of Texas at Austin
Venti Energy Inc.
Westar Trade Resources
Wood3 Resources
Yellowstone Capital

Renewable Energy in Utah

Summary

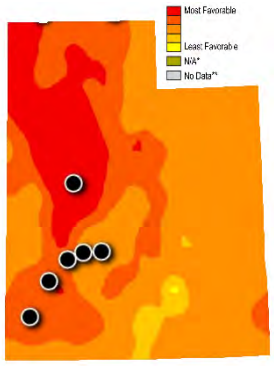
Utah has a vast and uniquely diverse renewable energy resource potential that rivals that of most of its neighboring states. However, unlike many other states in the region, Utah does not have a mandatory renewable portfolio standard. In order to encourage renewable energy development, the state provides an array of tax incentives, rebates, and programs to help residents, commercial, and industrial entities provide clean energy to the state's grid.

Cumulative Renewable Energy Capacity, 2010			
Wind	223 MW	Ocean	-
Solar Photovoltaic	0.6 MW	Biomass Power	3 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	42 MW	Biodiesel	-
Small Hydro	-	**Totals**	268.6 MW

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Utah is home to four operating geothermal energy plants. Another 365 MW of geothermal power projects are being considered by various developers.
- The Milford Wind Corridor project is the largest wind project in the state, at 203.5 MW, and was commissioned in late 2009. When the second phase is complete, the capacity will increase to 305.5 MW.
- Salt Lake City became one of the first Solar America Cities in the country, as recognized by the U.S. Department of Energy, and has established a goal of building at least 10 MW of new solar PV installations in the government, commercial, industrial, and residential sectors by 2015.

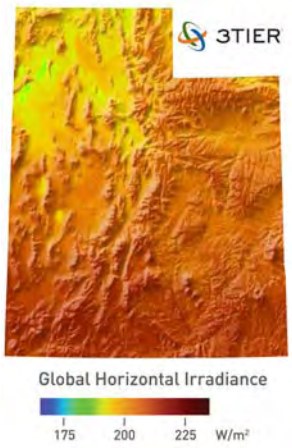


Geothermal Resources- Red and orange indicate an excellent to superb geothermal classification. Black circles indentify hydrothermal sites (≥90°C).

Economic Development

Employment	
Direct and Indirect Jobs, 2009	512
Organizations	38
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$764.0m, 3/3 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$12.7m
Competitive Grants & Tax Credits (48C & 1603)	$153.6m, 10 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Solar Resources- The state's potential for electricity generation provided by solar resources is 69 million MWh per year (NREL).

Utah

Policies

Renewable Portfolio Goal: Utah established a goal for municipal utilities, investor-owned utilities (IOUs) and rural electric cooperatives to produce or buy 20% renewable energy of their adjusted retail electric sales by 2025, to the extent that is it cost-effective to do so. Eligible technologies include: solar electric and thermal (thermal technologies may be counted by how much fossil fuel energy consumption they displace), wind, biomass (under certain conditions), hydroelectric (under certain conditions), marine, geothermal, waste gas, waste heat, landfill gas, coal mine methane, certain energy storage, and anaerobic digestion. Utilities must file progress reports every five years but are not required to meet intermediary targets. Utilities may purchase renewable energy certificates (RECs) produced within the Western Electricity Coordinating Council (WECC) territory to meet their target. As an incentive for solar energy systems, each kilowatt-hour (kWh) produced using solar energy is recorded as 2.4 kWh for compliance purposes.

Net Metering and Interconnection: Utah requires its IOU and most electric cooperatives to offer net metering up to 25 kW of capacity for residential customers and 2 MW of capacity for non-residential customers. Net excess generation (NEG) is credited to the customer's next bill, and at the end of the 12 month billing period is granted to the utility. The IOU may offer net metering until 20% of its 2007 peak demand is met, and co-ops may offer net metering until their 0.1% of their 2007 peak demand is met. Utah's interconnection rules are based on the Federal Energy Regulatory Commission's (FERC) interconnection standards for small generators and provide for three levels of interconnection for systems up to 20 MW, based on system complexity.

Tax Incentives: Utah provides a 25% individual income tax credit for most conventional renewable energy residential systems, with up to a maximum credit of $2,000 per residential unit. The residential credit is nonrefundable, but can be carried over for the next four years. Commercial wind, geothermal electric or biomass systems over 660 kW qualify for a refundable tax credit of 0.35¢/kWh ($0.0035/kWh) for four years, with no limit. The credit may not be carried forward or back. Other commercial systems are allowed a 10% refundable tax credit, with up to a maximum credit of $50,000. The credit may be used for up to seven years from the initiation of the lease.

Utah allows commercial, utility, and industrial entities to be exempt from sales tax resulting in the purchase or lease of equipment for new renewable power systems of 20 kW or greater, or for expansions of 1 MW or greater.

The Alternative Energy Development Incentive (AEDI) is a post-performance refundable tax credit for up to 100% of new state tax revenues (including, state, corporate, sales and withholding taxes) over the life of the project. It is meant to provide incentives to renewable energy producers and manufacturers who locate their projects in Utah.

ACORE Members in Utah

Oscilla Power, Inc.
Radian BioEnergy (Emery Energy)

Renewable Energy in Vermont

Summary

Hydroelectric power is the backbone of Vermont's renewable energy portfolio, accounting for 20% of the state's total electricity use. Vermont's greatest potential for renewable energy development lies in its biomass sector. With almost 78% of the state covered in forests, Vermont has a strong potential to be a leader in wood-based energy. It is also poised to become a major player in the ethanol industry as cellulosic-based technologies emerge that expand the use of forest resources. In 2009, Vermont became the first state to enact a state-wide "feed-in tariff"-style legislation for renewable energy.

Cumulative Renewable Energy Capacity, 2010			
Wind	6 MW	Ocean	-
Solar Photovoltaic	1.7 MW	Biomass Power	70 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	-
Small Hydro	5 MW	**Totals**	82.7 MW

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Vermont is a leader in the research, development, and commercialization of wood energy. The McNeil Generating Station was the world's largest wood-burning facility at the time of its construction in 1984 and has become a laboratory for the vast majority of biomass plants that have followed.
- In 2010, there were 24 fuel dealers/suppliers carrying biodiesel or bioheat in Vermont. Researchers are pursuing algae and perennial grass research and development in the state.
- Several of the state's schools are heated with biomass. In 2010, Green Mountain College in Vermont installed a $5.8 million Combined Heat and Power (CHP) wood-chip heating system, which is used to heat 155 acres of campus buildings.
- The 6 MW Searsburg Wind Power Facility went online in July 1997 and serves as an educational resource and research tool for investigating wind generation in cold climates. Over 140 MW of new utility-scale wind projects have been announced, although some have met opposition from local groups.

Wind Resources- Vermont has wind resources consistent with utility-scale production. Excellent resource areas are on the ridge crests.

Biomass Resources- Vermont has vast and sustainable forest resources with 78% of the state covered in forests. Vermont's forests have the capacity to supply additional amounts of wood fuel for biomass energy.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	414
Organizations	23
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/0 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$8.7m
Competitive Grants & Tax Credits (48C & 1603)	$2.4m, 12 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Vermont

Policies

Production Incentive: Vermont was the first state to enact "feed-in tariff" legislation in May 2009. The state requires all retail electricity providers to purchase electricity generated by eligible renewable energy facilities through the Sustainably Priced Energy Enterprise Development (SPEED) Program, via long term contracts with fixed standard offer rates. Facilities must be under 2.2 MW to apply. Eligible facilities include solar PV, landfill gas, wind, biomass, hydroelectric, and farm methane facilities. The overall program cap is 50 MW, and there is a 12.5 MW sub-cap for each eligible technology. The long-term contracts are 25 years for solar and 15 to 20 years for all other technologies. Current standard offer rates paid per MWh range from $90 for landfill gas to $240 for solar.

Renewable Portfolio Standard: Vermont's SPEED Program itself is not a renewable portfolio goal or standard. If the Vermont Public Service Board determines that the established minimum obligations of the SPEED program are not met – specifically that 20% of total statewide electric retail sales must be generated by SPEED projects by 2017 – the state's utilities would be required to meet a binding RPS. Under the SPEED program, utilities are expected to develop their own SPEED projects or enter into a long-term power purchase agreement (PPA) with generators certified as SPEED projects. In addition, Vermont has a separate target of producing 25% of the energy consumed within the state through the use of renewable energy sources by 2025, with an emphasis on farms and forests.

Net Metering and Interconnection: Under Vermont's net metering program, individual systems are limited to 250 kW and military systems are limited to 2.2 MW. The total capacity eligible for net metering is 2% of a utility's peak demand. Net excess generation is carried over to the customer's next bill at retail rate and is granted to the utility after 12 months of the month earned. Group net metering is also available. Interconnection standards are offered for net metered energy systems and for distributed generation systems larger than 150 kW.

Public Benefit Fund: The Clean Energy Development Fund (CEDF) is a state funding source for programs and projects promoting the development and deployment of renewable energy, CHP, and emerging energy-efficient technologies in Vermont. It is managed by the Vermont Department of Public Service. The CEDF is funded through payments from Entergy, which owns a nuclear power plant in the state. In return, Entergy was permitted to store its spent nuclear fuel at the plant until 2012. Approximately $6-7.2 million is available annually through March 2010, with additional funding through the American Recovery and Reinvestment Act (ARRA). The CEDF has provided funding for the Vermont Solar and Small Wind Incentive Program, the CEDF Loan Program, and the CEDF Grant Program.

Rebates: The Small Scale Renewable Energy Incentive Program provides rebates for new solar water heating, solar PV, wind, and micro-hydro energy installations in a variety of sectors. Incentives vary by technology, and range from $0.60/W to $4.50/W for power generating systems, with incentives of up to $255,000. The program budget is over $5 million, with funds provided by ARRA, state and utility funds.

Loans: The CEDF Loan Program provides low-interest loans with a fixed rate of 2% for individuals, companies, nonprofits, and local governments that install renewable energy systems. Loans are between $50,000 and $750,000, funded by the CEDF and ARRA.

Tax Incentives: Vermont offers a Business Solar Tax Credit (personal or corporate), which is a 30% state-level credit for solar energy systems on business properties placed into service before September 2011. Unused credit may be carried over for five years. For the personal tax credit, property placed into service after January 2012 receives a reduced credit of 7.2%. For the corporate tax credit, the system must be at least 150 kW.

Vermont allows municipalities to offer an exemption from the municipal real and personal property taxes for certain renewable energy systems.

Vermont offers a sales tax exemption for the purchase of renewable energy systems up to 250 kW. The state's sales tax rate is 6%.

ACORE Members in Vermont

Biomass Resource Energy Center
Clean Energy Group
Foundation for Our Future

Renewable Energy in Virginia

Summary

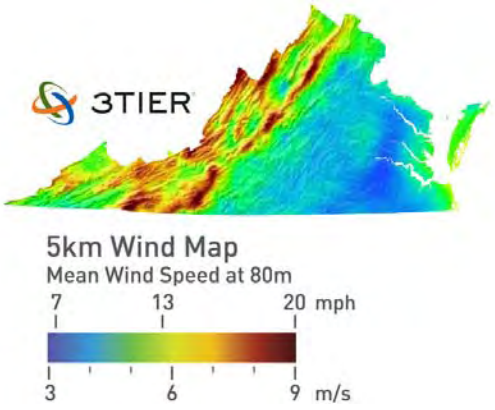
Virginia has strong biomass and wind resources, and a feasible solar resource. While not a leader in renewable energy development, Virginia has established a voluntary renewable portfolio standard that encourages renewable power production from these resources. The state is also planning how to take advantage of the immense potential of its offshore wind resources. Virginia has done well to provide a diverse group of incentives that target employment, commercial and residential priorities, and finance. However, while the state is making progress in diversifying its energy supply, there is much room for growth.

Cumulative Renewable Energy Capacity, 2010			
Wind	-	Ocean	-
Solar Photovoltaic	1 MW	Biomass Power	191 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	17 mGy
Small Hydro	8 MW	**Totals**	200 MW; 17 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Virginia is home to two biodiesel plants and three in development which will run on high fatty acid feedstocks and vegetable oils. The Virginia Point Biodiesel Plant would be the largest in the world if constructed, estimated to cost nearly $532 million and to produce up to 320 million gallons of biodiesel per year.
- Construction on the state's first utility-scale wind farm is expected to be complete in 2011: the $65 million Allegheny Mountain Wind Farm in Highland County, which will have a nameplate capacity of 39 MW. As of January 2011, Virginia does not have additional wind farms in development.
- In 2010, Virginia created an agency to help develop its offshore wind potential.

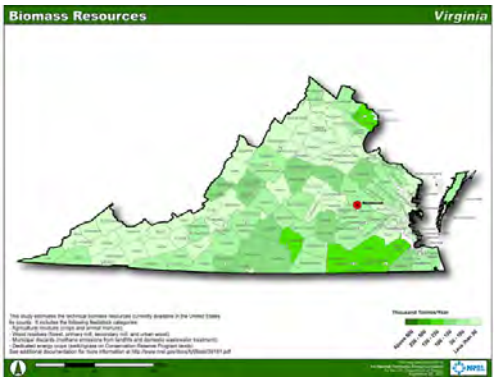


Wind Resources- Virginia is ranked 28th in potential wind capacity in the nation (American Wind Energy Association). The state's offshore resources are sufficient for large scale wind farms.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,613
Organizations	52
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$12.4m, 1/2 deals
Venture Capital & Private Equity (Grossed up)	$34.0m, 4 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$2.6m
Competitive Grants & Tax Credits (48C & 1603)	$2.3m, 20 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Biomass Resources- Bright green indicates a moderate resource of between 150 and 250 thousand metric tons per year. The state ranks eighth in the nation of forest residue resources.

Virginia

Policies

Renewable Portfolio Goal: Virginia established a voluntary renewable portfolio goal for investor-owned utilities (IOUs) to procure 15% of the power sold in Virginia from eligible renewable energy sources by 2025. The program allows participating IOUs to recover the costs of new systems, and provides an increased profit incentive for each of the timeline goals that IOUs meet. Eligible resources include new and existing solar, wind, geothermal, hydropower (excluding pumped storage), ocean, and biomass energy. Of these resources, onshore wind and solar power receive a double credit toward RPS goals, and offshore wind receives triple credit. The state limits the amount of wood derived from trees that would be otherwise used by Virginia lumber and pulp manufacturers at 1.5 million tons annually. Electricity must be generated or purchased in Southeast Electric Reliability Council's (SERC) territory.

Net Metering and Interconnection: Virginia requires IOUs and electric cooperatives to offer net metering to residential customers with renewable energy systems up to 10 kW in capacity, and with non-residential up to 500 kW in capacity. Utilities must offer net metering until customers' aggregate capacity achieves 1% of a company's adjusted peak-load from the previous year. Net excess generation (NEG) is credited on the customer's next billing cycle at the retail rate. At the end of each 12-month period, customers may elect to carry forward NEG to the next 12-month period or receive payment at an avoided cost rate. Net metering is also available to customers on time-of-use tariffs. In addition, customers retain title to renewable energy credits (RECs) created from their generators, and have an upfront, one-time option to enter into an agreement to sell all RECs to the utility.

Virginia has separate interconnection standards for net metered and non-net metered systems for systems up to 20 MW. Rules for non-net metered systems follow the Federal Energy Regulatory Commission (FERC) small generator interconnection procedure, with three levels of review, depending on system complexity. Rules for net metered systems have one level of review.

Rebates and Grants: The Solar Manufacturing Incentive Grant (SMIG) Program offers grants of up to $4.5 million per year to encourage the production of photovoltaic panels in Virginia. Grants are awarded at a rate of up to $0.75/W for panels sold in a calendar year, with a maximum of 6 MW.

Tax Incentives: Virginia allows any county, city, or town to exempt or partially exempt solar energy equipment or recycling equipment from local property taxes.

Virginia's Green Jobs Tax Credit allows companies engaged in the manufacture or operation of renewable energy systems to earn a $500 income tax credit for every green job created with a yearly salary of $50,000 or more, for five years.

ACORE Members in Virginia

Areva
Bordeaux International Energy
Chaloux Environmental Communications, Inc.
Earl Energy
Ecologic Leasing Solutions
Enegis LLC
Energy & Security Group
Ewing Bemiss & Co.
Generation Energy Inc.
Green Powered Technology
Harbor Energy Capital
Hearth, Patio & Barbecue Association
ICF International
Millennium Institute
MPR Associates Inc.
National Rural Electric Cooperative Association
Noblis
Pace Global Energy Services LLC
Pellet Fuels Institute
Piper Jaffray & Co
Planetary Power, Inc.
SkyBuilt Power
SunStar Strategic
University of Virginia
Vectronix, Inc.

Renewable Energy in Washington

Summary

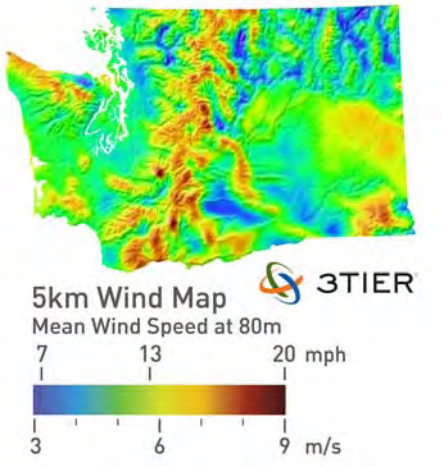
Hydropower supplies more than 60% of Washington's electricity. Now that many of the geographic opportunities for hydropower have been developed, Washington is exploring opportunities to diversify its electricity fuel portfolio, in part by harvesting its vast renewable energy resources. Washington supported nearly 5,000 jobs in the renewable energy industry in 2009, which is due in large part to the state's supportive incentives for manufacturers and utilities producing renewable energy products and energy. Washington still has great room to expand its abundant wave, ocean, and geothermal resources, and is exploring production incentives to encourage their development.

Cumulative Renewable Energy Capacity, 2010			
Wind	2,104 MW	Ocean	-
Solar Photovoltaic	5.2 MW	Biomass Power	122 MW
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	150.3 mGy
Small Hydro	38 MW	**Totals**	2,269.2 MW; 150.3 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Developers have chosen Washington to be the site of three of the few tidal energy projects in the country. Each has received federal permitting, and one project, the 1 MW SnoPUD Admiralty Inlet Tidal project in Snohomish County, is using a $7.3 million grant from the U.S. Department of Energy to be operational by 2011. The University of Washington also received a federal grant to monitor aquatic life at the site of the project.
- The Pacific Northwest National Laboratory, located in Richland, is on the leading edge of biomass, marine, and other renewable energy research and development.
- Washington is currently developing one of the largest solar photovoltaic projects in the world, a 75 MW project that would bring more than 200 construction jobs and 35 permanent jobs to an economically depressed community east of Seattle.

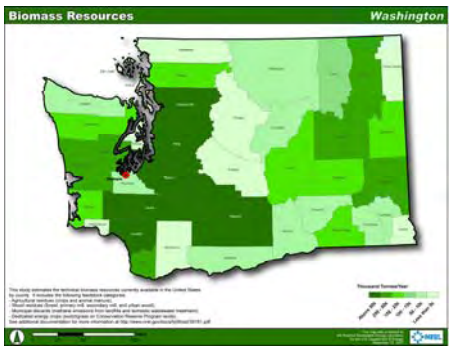


Wind Resources- Washington's wind resource is ranked 24th in the U.S. by the American Wind Energy Association (AWEA).

Economic Development

Employment	
Direct and Indirect Jobs, 2009	4,988
Organizations	84
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$1.2bn, 6/9 deals
Venture Capital & Private Equity (Grossed up)	$7.5bn, 9 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$12.6m
Competitive Grants & Tax Credits (48C & 1603)	$391.8m, 18 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Biomass Resources- Dark green indicates the highest measured resource of 500 thousand metric tons per year or greater.

Washington

Policies

Renewable Portfolio Standard (RPS): Washington's RPS requires all utilities that serve over 25,000 customers (representing 82% of Washington's load) to acquire 15% electricity from qualifying renewable resources by 2020 and to meet biannual energy efficiency targets. Qualifying resources include solar, wind, biomass, hydroelectric, geothermal electric, landfill gas, ocean, anaerobic digestion, and biodiesel fuel. Utilities may use renewable energy credits (RECs) to meet this standard. In certain cases, distributed generation under 5 MW may be counted as double the facility's electrical output. In general, if utilities fail to meet targets on time, they must pay the state $50 for each MWh below the target.

Net Metering and Interconnection: Washington's net metering program applies to renewable energy systems up to 100 kW. All customer classes are eligible, and all utilities must offer net metering. There is an aggregate capacity limit of 0.25% of the utility's peak demand achieved in 1996, which will increase to 0.5% in 2014. Net excess generation (NEG) may be credited to the customer's next bill at retail rate, and is granted to the utility at the end of a 12-month billing period. Meter aggregation for multiple properties is available at the customer's request, and is limited to 100 kW per customer. Interconnection procedures apply to distributed generation systems up to 20 MW, with two levels of review depending on system complexity. Only investor-owned utilities are covered.

Tax Incentives: Effective until 6/30/2013, Washington State does not collect sales taxes from the sale of equipment used to generate electricity from qualifying renewable resources with a generating capacity of at least 1kW. In addition, manufacturers and wholesale marketers of wholesale solar-electric modules or components qualify for a 43% reduction of the state's business and occupation tax rate.

Production Incentives: Washington offers production incentives of $0.12 to $0.54 per kWh for individuals, businesses, and local governments that generate electricity from solar power, wind power or anaerobic digesters. The state also offers incentives of $0.30 per kWh to $1.08 per kWh for community solar projects with a capacity of up to 75 kW. The incentives for both groups are capped at $5,000 per year.

ACORE Members in Washington

3TIER
Bainbridge Graduate Institute
Bullitt Foundation
Cascadia Capital
Climate Solutions
Evergreen Recycling
Infinia Corporation
Long View Associates, Inc.
Northwest Energy Angels
Puget Sound Energy
Rappaport Energy Consulting, LLC
Ridgeline Energy
SNC-Lavalin Thermal Power
Snohomish County Public Utility District
TUUSSO Energy
Washington State University

Renewable Energy in West Virginia

Summary

West Virginia's energy plan is designed to allow the state to attain energy independence from foreign oil imports by 2030. Much of this plan is reflected in the state's alternative portfolio standard, which gives favor to renewable energy systems. Despite the fact that West Virginia is the second largest coal producer in the nation, the state has been active in its move to provide incentives, net metering, and other policies to help support the renewable energy industry.

Cumulative Renewable Energy Capacity, 2010			
Wind	431 MW	Ocean	-
Solar Photovoltaic	0.1 MW	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	-
Geothermal	-	Biodiesel	-
Small Hydro	-	**Totals**	431.1 MW

Estimated capacity as of December 31, 2010; see User's Guide for details.

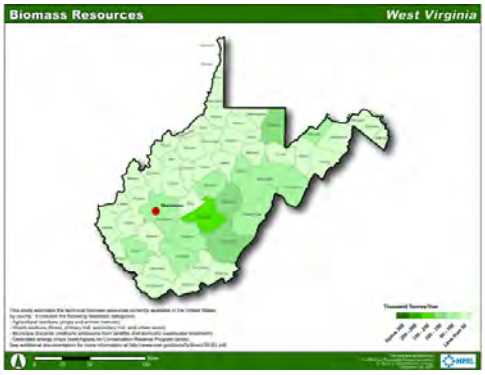
Market

- West Virginia is home to the second largest wind farm on the east coast. The 264 MW system is located in Grant County and was commissioned in September 2008.
- West Virginia hosts two small hydroelectric facilities under 30 MW, which are located in the Guyandotte River and the Tygart River Valley.

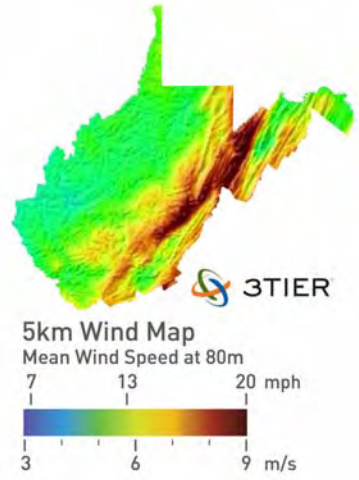
Economic Development

Employment	
Direct and Indirect Jobs, 2009	439
Organizations	4
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$162.1m, 1/1 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$1.3m
Competitive Grants & Tax Credits (48C & 1603)	$68.6m, 1 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Biomass Resources- West Virginia has about 2,445 thousand metric tons per year of biomass resources. Forest residue accounts for about half of all total biomass resources.



Wind Resources- West Virginia's wind resource map. Wind resources lie along the foothills of the Appalachian mountains on the northeastern part of the state. Average wind speeds in these regions reach rates greater than 7 m/s.

West Virginia

Policies

Renewable Portfolio Standard (RPS): West Virginia requires investor-owned utilities (IOUs) that have more than 30,000 residential customers to supply its retail electric sales from eligible alternative and renewable energy resources based on the schedule of: 10% by 2019, 15% by 2024, and 25% by 1/1/2025. West Virginia's standard does not require a minimum of the standard to be supplied from renewable energy resources nor does it specify a maximum of the standard that can be supplied from alternative energy resources. The West Virginia law provides the definition for alternative energy resources to include, but not limited to, coal technology, coal bed methane, natural gas, fuel produced by a coal gasification or liquefaction facility, synthetic gas, integrated gasification combined cycle technologies, waste coal, tire-derived fuel, and pumped storage hydroelectric projects. Compliance is met by attaining alternative energy credits (AECs). In most cases 1 megawatt-hour (MWh) of energy produced by an alternative energy system is equal to one AEC. Renewable energy systems receive two AECs per MWh of energy produced, except if produced from a renewable system built on a reclaimed mine in West Virginia, where1 MWh is equal to three AECs. In addition, IOUs can meet compliance standards by receiving a credit for each ton of carbon dioxide-equivalent reduced or offset, or for each MWh of electricity conserved by energy efficiency or demand-side management.

Net Metering and Interconnection: West Virginia requires its electric utilities to offer net metering to all of their residential and commercial customers for most conventional renewable systems up to 25 kilowatt (kW). Net excess generation (NEG) will be carried over to a customer-generator's next bill, for up to 12 months, as a kilowatt-hour (kWh) credit. Customers must bear the cost of a single bi-directional meter if their system is not equipped with one. Utilities must offer net metering until aggregated capacity reaches 0.1% of the utility's total load participation.

Tax Incentives: West Virginia has provisions in its tax code that allow the business and operation tax rate on wind powered turbines to be calculated at about 30% of the effective tax rate of most other types of newly constructed generating units.

West Virginia allows a tax credit for solar energy systems installed on a residence for 30% of the cost to purchase and install the system. The incentive has a maximum credit of $2,000; however, if the credit exceeds the taxpayer’s tax liability, the credit may be rolled over to successive years until 2014.

West Virginia allows utility-owned wind projects to be assessed for property tax-purposes to have a value equal to their salvage value. In effect, the provisions lower the tax rate to 24.95% of fair market value.

.

ACORE Member in West Virginia

Geostellar

Renewable Energy in Wisconsin

Summary

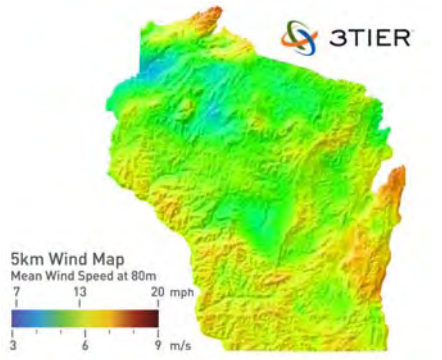
With its vast natural resources, Wisconsin has the opportunity to develop its renewable energy market to meet or exceed its 10% renewable portfolio standard (RPS). Wisconsin's high corn production makes it one of the nation's leading producers of ethanol, and developers are steadily developing its wind resource to meet state mandates. In 2010, Wisconsin became the first state in the Midwest to introduce feed-in tariff legislation. It has also enacted incentives to support the commercialization of clean technologies in the state.

Cumulative Renewable Energy Capacity, 2010			
Wind	469 MW	Ocean	-
Solar Photovoltaic	5.3 MW	Biomass Power	99 MW
Concentrated Solar Thermal	-	Bioethanol	498 mGy
Geothermal	0.3 MW	Biodiesel	20 mGy
Small Hydro	36 MW	**Totals**	609.6 MW; 518 mGy

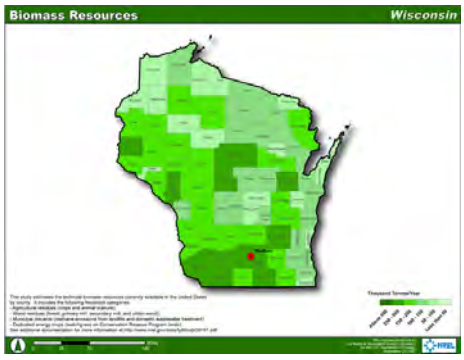
Estimated capacity as of December 31, 2010; see User's Guide for details.

Market

- Wisconsin has one operating biodiesel plant and ten operating ethanol plants, and is ranked ninth in the U.S. in ethanol capacity. The Office of Energy Independence is also exploring the production of biofuels from cellulosic feedstocks, such as corn stover, grasses, and wood waste.
- Ten biomass facilities are located in Wisconsin, which produce electricity through landfill gas power, gasification, anaerobic digestion, and incineration. They use municipal solid waste, forestry residue, manure, organic waste and other feedstocks for power.
- Wisconsin provides an attractive location for solar and wind manufacturing facilities, due to its proximity to clean energy supply chains and its favorable incentives for manufacturers. A $15 million wind and solar manufacturing facility is being constructed in Milwaukee, Wisconsin that will employ 275 people. At full capacity, the site will produce up to 7,500 MW annually.



Wind Resources- Wisconsin's strong wind resources are primarily located near the coast of the great lakes and offshore.



Biomass Resources- Dark green indicates an above average resource of 250 to 500 thousand metric tons per year.

Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,400
Organizations	67
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$250.0m, 1/5 deals
Venture Capital & Private Equity (Grossed up)	$48.8m, 2 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$5.0m
Competitive Grants & Tax Credits (48C & 1603)	$10.7m, 61 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).

Wisconsin

Policies

Renewable Portfolio Standard (RPS): Wisconsin has a statewide renewable energy goal of 10% by the end of 2015. Eligible technologies include solar, landfill gas, wind, biomass, hydroelectric, geothermal, municipal solid waste, anaerobic digestion, ocean energy, and fuel cells using renewable fuels. Electric providers, wholesale suppliers and customers of electric providers may petition the Wisconsin Public Service Commission (PSC) for a one-year extension of a compliance deadline. If the goal has not been achieved by 2016, the PSC must indicate why the goal was not achieved and determine how it may be achieved. Wisconsin established a Renewable Resource Credit Program, enabling utilities to buy and sell "renewable resource credits" (RRCs) from one another for electricity generated in excess of the requirements in a given year, which may be used in subsequent years.

Net Metering and Interconnection: Wisconsin requires all investor-owned and municipal utilities to file tariffs allowing net metering to customers that generate electricity with systems up to 20 kW in capacity (or up to 100 kW for wind for We Energy customers). All distributed generation systems are eligible, and there is no limit on total enrollment. The state has not adopted administrative rules for net metering, and utility programs vary. Wisconsin's interconnection standards apply to customers of investor-owned and municipal utilities with distributed generation systems up to 15 MW. There are four levels of review, which become stricter as system size increases.

Tax Incentives: Wisconsin offers a 10% tax credit from income or franchise taxes for the cost of equipment to harvest or process woody biomass for use as a fuel for individuals or corporations. There is a maximum incentive of $100,000 per claimant. Total credits granted may not exceed $900,000 per year. Excess credit in a given year is refunded to the taxpayer.

Wisconsin offers an exemption for biomass "used as a fuel for residential systems" from the state sales and use tax, and will also offer an exemption for all wind, solar, and anaerobic digester systems .

Any value added by solar or wind energy systems is exempt from general property taxes.

Public Benefit Fund: The Wisconsin Focus on Energy program provides financial assistance in the form of rebates, grants and loans, among other services, to residents, schools, businesses, and local governments. The programs are created by utilities and funded through contracts with private program administrators, with oversight and approval by the PSC through the Focus on Energy program. This organization is intended to prevent funds from being reallocated by the state for other uses. Each utility in the state is required to spend 1.2% of their annual operating revenue to fund renewable energy and energy efficiency. In 2010, the total fund was around $83 million, with approximately 9.9% allocated for renewable energy.

Rebates, Grants and Loans: The Focus on Energy Program funds grants for large-scale biomass combustion projects and farm, municipal, and industrial biogas projects, which are located in a participating electric or gas utility's service territory, and which must result in electricity or natural gas savings. Grants are generally limited to the lesser of 25% of project costs or $250,000, and must have a simple payback of 1.5 years or more.

Through the Cash-Back Reward program, Focus on Energy provides rebates for installing or expanding solar PV, wind, or solar hot water systems in residential or non-residential buildings. Incentives are calculated on the system's expected performance, with a maximum incentive of 30% of the total system cost. Electric systems must be under 20 kW

The Wisconsin Department of Commerce offers low-interest loans to for-profit renewable energy manufacturing companies in the state for up to 25% of project costs at a fixed interest rate of 2% for 5 -10 years. The program is funded by the State Energy Program Funds under the Federal stimulus bill of 2009.

ACORE Members in Wisconsin

BIOFerm Energy Systems
Helios USA, LLC
Johnson Controls
Michael Best & Friedrich LLP
University of Wisconsin - Oshkosh
Virent Energy Systems, Inc.

Renewable Energy in Wyoming

Summary

Wyoming is rich in traditional energy sources and has significant production potential from renewable energy, particularly from its strong wind, solar, and geothermal resources. Wyoming exports its wind power to Colorado, Utah and Oregon and has much room to further develop its resources. The state established a rebate and grant program to encourage the industry's expansion, but funds were fully obligated shortly after funds were made available, and it has since closed. Without long-term policy signals like a renewable portfolio standard, Wyoming's future in the renewable energy industry is unclear.

Cumulative Renewable Energy Capacity, 2010			
Wind	1,412 MW	Ocean	-
Solar Photovoltaic	0.1 MW	Biomass Power	-
Concentrated Solar Thermal	-	Bioethanol	6.5 mGy
Geothermal	-	Biodiesel	29.8 mGy
Small Hydro	-	**Totals**	1,412.1 MW; 36.3 mGy

Estimated capacity as of December 31, 2010; see User's Guide for details.

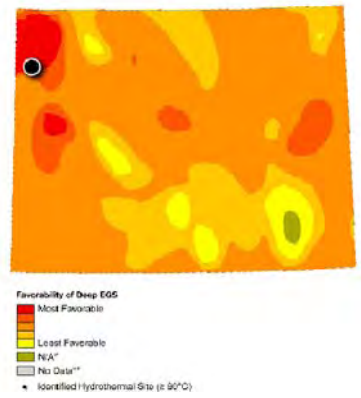
Market

- Wyoming has a growing wind industry and installed 425 MW in 2009 alone.
- Wyoming's biofuels market consists of a cellulosic ethanol demonstration plant that uses forestry residues as feedstock, a recently expanded corn ethanol plant that produces 10 million gallons per year, and a biodiesel facility that produces 30 million gallons per year.
- Converse and Carbon Counties are the chosen sites for two proposed 2 GW wind farms, planned to encompass more than 100,000 acres each. The Converse County project has a planned commissioning date for the end of the year 2014, while the Carbon County project is set to be finished by the end of year 2012, if they can secure financing.

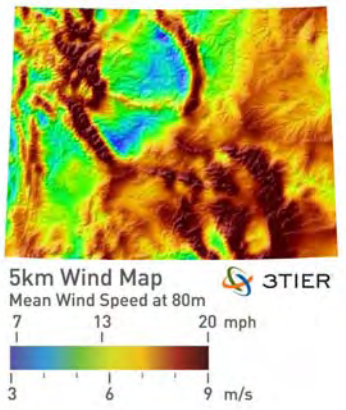
Economic Development

Employment	
Direct and Indirect Jobs, 2009	1,751
Organizations	12
Private Sector Investment (2009-2010)	
Asset Finance (Disclosed Transactions/Total)	$0.0m, 0/5 deals
Venture Capital & Private Equity (Grossed up)	$0.0m, 0 deals
Federal Funding	
Recovery Act Funding, Department of Energy	$0.0m
Competitive Grants & Tax Credits (48C & 1603)	$0.0m, 2 projects

Figures are inclusive of the solar, wind, biopower, biofuels, geothermal, waste energy, ocean, and small hydropower sectors. The "Jobs" figure also reflects large hydropower, but excludes geothermal. Sources: Navigant Consulting, Inc (Jobs), Bloomberg New Energy Finance (Investment, Organizations), Departments of Energy & Treasury (Federal Funding).



Geothermal Resources- Dark yellow to orange indicate moderate to good geothermal potential. Dark orange to red represent superb to outstanding resource areas.



Wind Resources- Wyoming's wind resources are ranked seventh in the nation by the American Wind Energy Association (AWEA).

Wyoming

Policies

Net Metering and Interconnection: Wyoming requires the state's investor- owned utilities (IOUs), electric cooperatives, and irrigation districts to provide net metering to its customers for photovoltaic, wind, biomass, and hydroelectric systems up to 25 kW. Net excess generation (NEG) is treated as a kilowatt-hour credit and is applied to the customer's next billing cycle at the retail rate. After a 12 month billing cycle ends, utilities must purchase unused NEG at the utility's avoided-cost rate. Interconnection standards apply to net metered systems, however, the Wyoming Public Service Commission (PSC) has not established separate interconnection rules and does not limit overall enrollment. Customers must purchase and install an external disconnect switch.

Rebates: Wyoming awards up to $150 for residential solar water heaters, with funding from the American Recovery and Reinvestment Act. The rebates are available as part of a larger program for energy efficient appliances.

Tax Incentives: Wyoming allows the equipment associated with the installation of renewable energy systems to be exempt from the state's excise tax, up to the point of interconnection with an existing transmission grid. The exemption exists until the end of 2012 for systems under 25 kW, and until the end of 2011 for systems greater than 25 kW.

International ACORE Members, By Region

East Asia

Japan External Trade Organization (JETRO)
Korea Trade - Investment Promotion Agency (KOTRA)

Europe

Bayburt Group
Bloomberg New Energy Finance
EXXERGY GmbH
Forrester Partners
Germany Trade and Invest
Hittite Solar Enerji
IslandsBanki
Italian Trade Commission
NILU Polska
NTR
Portugal Global Business Development Agency (AICEP)
Resen Energy
Royal Danish Embassy
United Kingdom Trade & Investment

Canada

CarbonFree Technology Inc.
CEATI International Inc.
Embassy of Canada
enerG Alternative Sources
Evergreen Power Corp
GreenWing Energy Management Ltd
GTECH
Iogen Corporation
Quebec Delegation General
Schneider Electric
Sea Breeze Power Corporation
Solar Network International
Tillsonburg Hydro, Inc.
Toronto Stock Exchange

Oceania

Australian Trade Commission
New Zealand Trade & Enterprise

Latin America & Caribbean

Ceelat
Clarke Energy Associates
Clean Energy Network (CENT)
The Brazilian Sugarcane Industry Association (UNICA)

U.S. Territories

American Samoa Power Authority
Goldman Antonetti & Córdova, P.S.C.
Puerto Rico Electric Power Authority

Other international members may be listed in the state of their U.S. headquarters.