

# Options for States to Advance Bioenergy Goals



States interested in promoting bioenergy can take active roles in removing financial, policy, regulatory, technology, and informational barriers hindering development of biomass projects. As diverse as these approaches are, they are all aimed at reducing investor risk in order to increase the likelihood of bioenergy projects moving forward to completion.

Bioenergy developers often need to raise capital to cover significant project expenses, such as construction costs, the cost of equipment, installation fees, and any costs incurred during the regulatory and permitting process. The terms under which investors and lenders provide this capital—should they agree to provide any at all—can significantly impact the cost of producing bioenergy, and therefore its competitiveness with other energy sources. All else constant, the greater the investors' and lenders' perception of risks related to a particular project, the greater the cost of capital. States can help reduce the cost of financing for many bioenergy developers by enacting policies and other measures that reduce lending and investment risks.

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States can promote bioenergy by facilitating:

- Favorable policy development
- Favorable regulatory development
- Environmental revenue streams
- Direct investment/financing
- Incentives
- Research, development, and demonstration
- Information sharing

Although not a comprehensive list, these options have been implemented in many states and provide numerous lessons.

The following sections provide details on how states can implement each of these options to promote investment in bioenergy.

## 5.1 FAVORABLE POLICY DEVELOPMENT

Many states have promoted bioenergy by seeking to create new or expanded markets for biopower, biofuels, or bioproducts. Enacting policies that encourage or require use of bioenergy does not necessarily financially support development, but does provide certainty for producers that a market will exist for their products, which in turn reduces investor risk.

State policies that require use of renewable energy, such as RPS and renewable fuels standards, have proven to stimulate growth in renewable energy markets and reduce investor risk by ensuring each year that a given amount of electricity or motor fuel is supplied from renewable sources, including biomass.

Typical state policies that create markets for bioenergy—including detailed information about program benefits, design elements, interactions with state and federal programs, implementation and evaluation, and case studies—are discussed in EPA’s *Clean Energy-Environment Guide to Action* at [www.epa.gov/cleanenergy/energy-programs/state-and-local/state-best-practices.html](http://www.epa.gov/cleanenergy/energy-programs/state-and-local/state-best-practices.html). Best practices in design and implementation have a significant impact on policy effectiveness.

Several policy options that states can implement to remove barriers to bioenergy development are presented below. Although not a comprehensive list, these

options have been implemented in many states and provide numerous lessons.

- **State “Lead by Example” Initiatives.** State and local governments are implementing a range of programs and policies that advance clean energy, including bioenergy within their own facilities, fleets, and operations. These “lead by example” (LBE) initiatives help state and local governments achieve energy cost savings while promoting adoption of clean energy technologies by the public and private sectors. States are leveraging their purchasing power, control of significant energy-using resources, and high visibility of their public facilities to demonstrate clean energy technologies and approaches that lower their energy costs and reduce emissions.

State LBE initiatives that can support development of bioenergy include:

- Purchasing and using renewable energy and clean energy generation in public facilities.
- Implementing “green fleet” programs that require state vehicles to use biomass-based renewable fuels.
- Implementing procurement rules that require state agencies to purchase biomass-based products.

» **For more information, see EPA’s Clean Energy Lead by Example Guide at [www.epa.gov/cleanenergy/documents/epa\\_lbe.pdf](http://www.epa.gov/cleanenergy/documents/epa_lbe.pdf).**

- **Renewable Portfolio Standard (RPS).** An RPS requires utilities and other retail electricity providers to supply a specified minimum percentage (or absolute amount) of customer load with eligible sources of renewable electricity. These laws create a new market for renewable energy and DG projects by outlining the specific minimum amount or percentage of clean energy that must be produced by a specified date (e.g., 25 percent of in-state electricity production must come from renewable resources by January 1, 2050). As of November 2008, 35 states, including the District of Columbia, have adopted RPS laws or goals. All state RPSs include bioenergy as an eligible resource.
- **Fostering Voluntary Green Power Markets.** Voluntary green power programs are a relatively small but growing market that provides electricity customers the opportunity to make environmental choices about their electricity consumption. Green power can be offered in both vertically integrated (i.e., regulated) and competitive (i.e., deregulated) retail markets as bundled renewable energy that consumers can purchase voluntarily,

either through green pricing programs or green power marketing. States can play key roles in shaping green power markets:

- For regulated markets, states can play important roles in increasing voluntary participation rates in green pricing programs by requiring utilities to offer them to consumers as an option and/or conduct outreach, education, or marketing campaigns about green pricing programs to consumers.
- Under deregulated markets, states can mandate green power marketers' access to electricity customers, which would otherwise involve high transaction costs to the marketers.

In addition to fostering green power programs, states can ensure that they complement other policies already in place, such as public benefits funds (PBFs) or RPSs.

Green power programs have existed for approximately 10 years and have contributed to development of more than 2,200 megawatts (MW) of new renewable capacity. Biomass has been the second most popular resource, after wind, to serve renewable demand.

- **Renewable Fuel Standard (RFS).** U.S. EPA, under EISA, is responsible for revising and implementing regulations to ensure that a certain percentage of transportation fuel be renewable. The federal Renewable Fuel Standard program will increase the volume of renewable fuel required to be blended into gasoline from 9 billion gallons in 2008 to 36 billion gallons by 2022.<sup>4</sup> States may also enact their own RFSs in addition to the federal program. As of August 2008, 12 states had an RFS in place (Pew Center on Global Climate Change, 2008).
- **Low Carbon Fuel Standard (LCFS).** An LCFS for transportation fuels is a policy to encourage utilization of low-carbon fuels (measured on a full life-cycle basis) to reduce GHG emissions from the transportation sector.

In 2007, the Governor of California signed an executive order directing the state's Secretary of Environmental Protection to coordinate the development of an LCFS, which will be the first and only in the United States. The California Air Resources Board released a draft of the standard in March 2009, which if implemented would start in 2011 and require fuel providers to ensure that the mix of fuel they sell into the California market meets, on average, a declining standard for GHG emissions (measured in CO<sub>2</sub>-equivalent grams

<sup>4</sup> The new RFS program regulations are being developed in collaboration with refiners, renewable fuel producers, and many other stakeholders (see [www.epa.gov/oms/renewablefuels/index.htm](http://www.epa.gov/oms/renewablefuels/index.htm)).

per unit of fuel energy sold). By 2020 the standard would reduce the carbon intensity of California's passenger vehicle fuels by at least 10 percent and reduce GHG emissions from the transportation sector by about 16 million metric tons (almost 10 percent of the total GHG emission reductions needed to achieve the State's mandate of reducing GHG emissions to 1990 levels by 2020). The proposed standard is designed to be compatible with market-based compliance mechanisms (U.S. EPA, 2008b and California Environmental Protection Agency, 2009).

» For more information on California's pending LCFS, see [www.energy.ca.gov/low\\_carbon\\_fuel\\_standard/](http://www.energy.ca.gov/low_carbon_fuel_standard/).

- **High Tipping Fees.** The availability of urban wood residues is largely governed by the size of tipping fees. Where such fees are high (partly due to the lack of land for landfills), recycling is often higher. Also, high tipping fees provide economic incentives to utilize these resources (U.S. DOE, 2005).

## 5.2 FAVORABLE REGULATORY DEVELOPMENT

In some circumstances, bioenergy developers will experience time delays as they go through the process of obtaining required utility interconnection, environmental compliance, and construction permits. The prospect of significant time delays for some projects can contribute to investor risk. States can help reduce this risk by streamlining and standardizing regulatory and permitting processes for bioenergy producers.

### BIOENERGY ONE STOP SHOPS

The Georgia Center for Innovation in Agribusiness is working to promote production and use of renewable energy and biofuels in Georgia by conducting One Stop Shops that bring together prescreened businesses and representatives from more than 20 state and federal agencies. These working meetings give companies the opportunity to present and discuss ideas for bioenergy projects and obtain the permitting and contact information they need to get their ideas off the ground. The center aims to help businesses through the permitting process in 90 days while creating networks connecting business, industry, research, and government. To date, 14 One Stop Shop meetings have been conducted, with 85 companies presenting ideas. As a result of these meetings, 23 bioenergy projects have been launched or planned for implementation by 2015.

For more information, visit <http://energy.georgiainnovation.org/services>.

EPA's Environmental Technology Verification program provides emissions verification for various technologies, including biomass cofiring and other new clean energy technologies. Use of emissions data from verification studies can help speed the permitting process for new facilities.

» Visit [www.epa.gov/etv/](http://www.epa.gov/etv/) to see what verification reports are available.

For biofuels producers and distributors, one step that states can take is to adopt ASTM standards for blending. There is no federal requirement in this area, so states have often had different standards. A more consistent market allowing preblended fuels to be sold across states could reduce distribution costs (Schultz, 2008).

## Example

### STATE GRANT PROGRAMS: PENNSYLVANIA ENERGY DEVELOPMENT AUTHORITY

Several states provide funding and financial incentives, such as grants, loans, and loan guarantees, to drive investment in renewable energy, including bioenergy. These offerings are not only stimulating the nation's renewable energy markets, but are helping to reduce air and water pollution, promote economic development and job creation, and improve energy security. Pennsylvania is among the states now offering grant funding for bioenergy research and production.

Every year, the Pennsylvania Energy Development Authority (PEDA) competitively awards millions of dollars in grants to help finance clean, advanced energy projects. Energy projects eligible to receive funding include biomass, wind, solar, fuel cells, and other energy sources. For-profit businesses, local governments, and nonprofit organizations, as well as businesses interested in locating their advanced energy operations in Pennsylvania, have been invited to apply for funding in the past. Applications to receive funding are evaluated based on numerous factors, such as a project's cost-effectiveness, technical feasibility, and economic and environmental benefits. The extent to which the project promotes use and development of the state's indigenous energy resources, such as biomass, and improves energy diversity and security are also considered in the evaluation process.

From 2004 to 2007, Pennsylvania awarded \$6 million in grants to 13 different bioenergy projects. Among the recipients of funding were a school district using biomass to heat school buildings, several biodiesel producers, a major university conducting applied research, and several LFG energy projects.

To learn more about the grant program, visit PEDA's Web site at [www.depweb.state.pa.us/enintech/cwp/view.asp?a=1415&q=504241](http://www.depweb.state.pa.us/enintech/cwp/view.asp?a=1415&q=504241).

Source: DSIRE

## 5.3 ENVIRONMENTAL REVENUE STREAMS

Bioenergy has a number of potential environmental benefits over other forms of energy, which in some cases can be monetized (for more information on these potential benefits, see Chapter 3, Benefits and Challenges of Bioenergy). States can offer environmental revenue streams (ERS), such as renewable energy certificates (RECs) or emission allowance guarantees that reward biomass technologies for their environmental attributes.

Some states, for example, allow renewable energy producers to participate in the emissions allowance market for NO<sub>x</sub>. The sale of these allowances can provide bioenergy producers with an additional source of revenue. Further, if CO<sub>2</sub> is regulated through a cap-and-trade system, biopower and other bioenergy sources might obtain cash flow through the associated carbon market. These additional sources of revenue can significantly reduce risk for potential lenders and improve potential investment returns.

» For more information on environmental revenue streams, see EPA's CHP Partnership paper *Environmental Revenue Streams for Combined Heat and Power* at [www.epa.gov/chp/documents/ers\\_program\\_details.pdf](http://www.epa.gov/chp/documents/ers_program_details.pdf).

### CO<sub>2</sub> OFFSETS: ENVIRONMENTAL REVENUE STREAMS FOR BIOENERGY PROJECTS

Separate from CO<sub>2</sub> cap-and-trade programs, several states regulate CO<sub>2</sub> emissions from particular sources. To help regulated sources comply cost effectively, these states allow sale of CO<sub>2</sub> emission offset credits. Projects that reduce CO<sub>2</sub> or other GHG emissions at one location generate CO<sub>2</sub> credits that can be sold to offset emissions at another location. In states such as Massachusetts, Oregon, and Washington, biomass CHP projects can be used to create offsets.

Source: U.S. EPA, 2008

## 5.4 DIRECT INVESTMENT/ FINANCING AND INCENTIVES

States can substantially reduce investor risk by providing funding and financial incentives for bioenergy production. These offerings increase the likelihood of a market for bioenergy by reducing energy costs—and, therefore, the competitiveness of bioenergy with other energy sources—and improving returns for potential investors.

Numerous states offer direct incentives to bioenergy project developers in various forms; more incentives are available for biopower production than for biofuels (see Tables 5-1 and 5-2). Low interest rate loans, bond programs, rebates, grants, production incentives, and tax incentives (deductions, exemptions, and credits) are among the different types of incentives states have made available for bioenergy production. The effectiveness of incentive programs varies greatly, as tracked by NREL's State Clean Energy Policies Analysis Project.

» For more information, see [www.nrel.gov/applying\\_technologies/scepa.html](http://www.nrel.gov/applying_technologies/scepa.html).

For municipal projects—including municipal use of urban wood waste and methane capture and use at municipal landfills and wastewater treatment plants—municipal bonds, bank loans, and/or lease purchase agreements may be available.

Some common state approaches to providing incentives include:

- **Public Benefit Funds (PBFs).** PBFs, also known as system benefits charges (SBC) or clean energy funds, are typically created by levying a small fee or surcharge on electricity rates paid by customers (e.g., for renewable energy PBFs, this fee is approximately 0.01 to 0.10 mills per kWh). To date, PBFs have been used primarily to fund energy efficiency and low-income assistance programs; more recently they have supported clean energy supply (i.e., renewable energy, including bioenergy, and CHP).

» For more information about PBF benefits, design elements, interaction with state and federal programs, implementation and evaluation, and case studies, see EPA's Clean Energy-Environment Guide to Action at [www.epa.gov/cleanenergy/energy-programs/state-and-local/state-best-practices.html](http://www.epa.gov/cleanenergy/energy-programs/state-and-local/state-best-practices.html).

- **Financial Incentives.** Financial incentives, including tax incentives, grants, and loans, can play a key role in reducing investor risks and promoting bioenergy development.
  - **State tax incentives** for renewable energy can take the form of personal or corporate income tax credits, tax reductions or exemptions, and tax deductions (e.g., for construction programs). Tax incentives aim to spur innovation by the private sector. State tax incentives for renewable energy are a fairly common policy tool. While state tax incentives tend to be

## INCENTIVES FOR BIOMASS IN OREGON

The state of Oregon has developed a suite of financial incentives to promote the use of biomass for bioenergy production. Two of these include:

**Business Energy Tax Credit.** Offers a 50 percent tax credit on eligible project costs up to \$20 million for a variety of projects, including two categories that may apply to biomass projects—high efficiency combined heat and power (CHP) and renewable energy generation. The credit can be taken as 10 percent annually over five years, or a project owner can transfer the credit to a pass-through partner in return for a lump sum payment at the completion of the project. For more information, visit: [www.oregon.gov/ENERGY/CONS/BUS/BETC.shtml](http://www.oregon.gov/ENERGY/CONS/BUS/BETC.shtml).

**Energy Trust of Oregon Grants.** Charged by the Oregon Public Utility Commission with investing in cost-effective energy conservation, renewable energy resources, and energy market transformation in Oregon, the Energy Trust offers millions of dollars annually in grants for innovative commercial applications of renewable energy technology. Incentive levels are based on a project's above-market costs. For more information, visit: [www.energytrust.org/grants/up/index.html](http://www.energytrust.org/grants/up/index.html).

## BIOFUEL TAX INCENTIVES IN INDIANA

The state of Indiana has developed a comprehensive set of incentives to promote biofuels within its borders. Between 2005 and 2009, \$16 million in tax incentives were used to kick-start the ethanol industry—resulting in 10 new ethanol production facilities in the state along with several biodiesel plants to make soybean-based fuel. These incentives target different aspects of biofuel production and distribution, and include tax credits for:

- **Ethanol production.** Ethanol producers are entitled to a credit of \$0.125 per gallon of ethanol produced, including cellulosic ethanol. The maximum credit that may be claimed by a single producer depends on the volume of grain ethanol produced.
- **Ethanol retail.** E85 retailers are allowed to deduct \$0.18 from the required state gross retail tax for every gallon of E85 sold during reporting periods ending before July 1, 2020.
- **Biodiesel production.** Biodiesel producers are entitled to a credit of \$1.00 per gallon of biodiesel produced. The total amount of credits granted to a single taxpayer may not exceed \$3 million for all taxable years, but may be increased to \$5 million with prior approval by the Indiana Economic Development Corporation.\*
- **Biodiesel blending.** Biodiesel blenders are entitled to a credit of \$0.02 per gallon of blended biodiesel produced at a facility located in Indiana. The total amount of credits granted to a single taxpayer may not exceed \$3 million for all taxable years.\*
- **Biodiesel retail.** Through December 31, 2010, a taxpayer that is a fuel retailer and distributes blended biodiesel for retail purposes is entitled to a credit of \$0.01 per gallon of blended biodiesel distributed.\*

\*This tax credit is contingent on funding, which as of July 2009 was not available.

Source: U.S. DOE, 2009

**TABLE 5-1. SUMMARY OF STATE FINANCIAL INCENTIVES FOR BIOMASS TECHNOLOGIES**

INCENTIVE TYPE	NUMBER OF INCENTIVES AVAILABLE	STATES OFFERING INCENTIVES
State Grant Program	25	Alabama, Alaska, Connecticut (x2), Delaware, District of Columbia, Florida, Illinois, Indiana, Iowa, Maine, Massachusetts (x2), Michigan (x3), New York, North Carolina, Ohio, Pennsylvania (x2), Rhode Island, South Carolina, Vermont, Wisconsin
State Loan Program	28	Alabama, Alaska, California, Connecticut, Hawaii, Idaho, Iowa (x2), Maine, Massachusetts, Minnesota (x3), Mississippi, Missouri, Montana, Nebraska, New Hampshire, New York (x2), North Carolina, Oklahoma (x2), Oregon, Rhode Island, South Carolina, Tennessee, Vermont
Property Tax Exemption	21	Arizona, Colorado, Connecticut, Iowa, Kansas, Maryland, Michigan, Montana (x3), Nevada (x3), New Jersey, New York, Ohio, Oregon, Rhode Island, South Dakota, Texas, Vermont
Sales Tax Exemption	10	Georgia, Idaho, Kentucky, Maryland, New Mexico, Ohio, Utah, Vermont, Washington, Wyoming
Corporate Tax Credit	13	Florida, Georgia, Iowa, Kentucky, Maryland, Missouri, Montana, New Mexico, North Carolina, North Dakota, Oregon, South Carolina, Utah
Production Incentive	9	California, Connecticut, Minnesota, New York, North Carolina, South Carolina, Vermont, Washington
Personal Tax Credit	8	Iowa, Maryland, Montana (x2), New Mexico, North Carolina, North Dakota, Oregon, Utah
Personal Deduction	4	Alabama, Arizona, Idaho, Massachusetts
State Rebate Program	2	New Jersey, Wisconsin
Industry Recruitment	14	Colorado, Connecticut, Hawaii, Illinois, Massachusetts (x2), Michigan (x2), Montana (x2), New Mexico, Oregon, Wisconsin (x2)
Corporate Tax Exemption	1	Ohio
Corporate Deduction	1	Massachusetts
Excise Tax Incentive	1	Iowa
State Bond Program	2	Idaho, New Mexico
<b>TOTAL INCENTIVES</b>	<b>139</b>	

Source: DSIRE, January 26, 2009

smaller than federal incentives, they are often additive and can become significant considerations when making purchase and investment decisions.

- **Grants, buy-downs, and generation incentives** support development of energy efficiency and clean generation technologies. For renewable energy, state grants cover a broad range of activities and frequently address issues beyond system installation costs. To stimulate market activity, state grants can cover research and development, business and infrastructure development, system demonstration, feasibility

studies, and system rebates. In contrast to incentives that help finance initial capital costs (e.g., rebates and state sales tax exemptions), states also provide generation incentives on the basis of actual electricity generated. In their most straightforward form, generation incentives are paid on a kilowatt-hour basis.

- **State loan programs** provide low-interest loans to promote development of clean energy. One common approach is a revolving loan fund. This type of fund is designed to be self-supporting. States create a pool of capital when the program is launched. This capital

**TABLE 5-2. SUMMARY OF STATE INCENTIVES FOR ALTERNATIVE FUELS/ALTERNATIVE-FUEL VEHICLES**

INCENTIVE TYPE	NUMBER OF INCENTIVES AVAILABLE	STATES OFFERING INCENTIVES
State Grant Program	42	Arizona, Arkansas, California, Colorado, Connecticut (x2), Florida, Georgia, Idaho, Illinois (x3), Indiana (x3), Iowa (x3), Louisiana, Michigan (x2) Minnesota, New Hampshire, New Mexico, North Carolina (x3), Ohio (x3), Pennsylvania (x2), Tennessee (x3), Texas (x4), Utah, Virginia, Washington
State Loan Program	16	California, Iowa (x3), Maine, Nebraska, North Dakota, Ohio, Oklahoma (x2), Oregon, Rhode Island, Tennessee, Utah, Virginia, Washington
Property Tax Exemption	1	Montana
State Bond Program Exemption	1	North Carolina
Production Incentive	15	California, Colorado, Florida, Hawaii, Kansas, Minnesota, Mississippi, Missouri (x2), Montana (x2), North Dakota, Oregon, South Dakota, Tennessee
Retail Incentive	1	South Carolina
Use Incentive	1	Indiana
Excise Tax Incentive	4	Arkansas, California, Georgia, North Dakota
Rebate	4	Illinois, Michigan, New Jersey (x2)
Tax Credit	60	Colorado, Florida, Georgia, Hawaii, Idaho, Indiana (x6), Iowa (x4), Kansas (x2), Kentucky (x4), Louisiana, Maine (x2), Maryland (x2), Michigan (x2), Missouri, Montana (x3), Nebraska, New Mexico (x2), New York (x2), North Carolina (x4), North Dakota (x3), Ohio, Oklahoma (x3), Oregon (x3), Pennsylvania, South Carolina (x5), South Dakota, Vermont, Virginia, Wisconsin, Wyoming
Tax Deduction	2	Idaho, Washington
Tax Exemption	25	Delaware, District of Columbia, Florida (x2), Georgia, Hawaii, Illinois (x2), Indiana, Louisiana, Massachusetts, Michigan, Missouri, Nebraska, New Mexico, North Carolina (x2), North Dakota, Oklahoma, Oregon, Rhode Island, Texas, Washington (x2), Wisconsin
Tax Reduction	11	Alaska, Arizona, Hawaii, Kansas, Kentucky, Maine, Michigan, Minnesota, Montana, New York, South Dakota
Tax Refund	5	Kentucky, Montana, Pennsylvania, South Dakota, Wisconsin
<b>TOTAL INCENTIVES</b>	<b>188</b>	

Source: U.S. DOE, 2008

then “revolves” over a multiyear period, as payments from borrowers are returned to the pool and lent anew to other borrowers. Revolving loan funds can be created from several sources, including PBFs, utility program funds, state general revenues, or federal programs. Loan funds are typically created by state legislatures and administered by state energy offices.

- **Biofuels Incentives.** Many states have incentives to help promote development of biofuels. These incentives can include exemptions from state gasoline excise taxes, direct production payments, state RFSs, and price supports. A current list of state ethanol incentives can be found on the RFA Web site at [www.ethanolrfa.org/policy/actions/state/](http://www.ethanolrfa.org/policy/actions/state/).

## 5.5 RESEARCH, DEVELOPMENT, AND DEMONSTRATION

Lack of confidence in the less common biomass conversion technologies, such as gasification, generally will discourage lending and investment in bioenergy. Research, development, and demonstration projects will help not only to advance the capabilities of emerging technologies, but will increase investor confidence and therefore facilitate bioenergy developers' access to capital.

### Example

#### FLORIDA'S RENEWABLE ENERGY AND ENERGY-EFFICIENT TECHNOLOGIES GRANTS PROGRAM

Since 2006, Florida's Renewable Energy and Energy-Efficient Technologies Grants Program has provided more than \$27 million in matching grants to support a variety of renewable energy projects. Nonprofit organizations, as well as Florida municipalities and county governments, state agencies, for-profit businesses, universities and colleges, and utilities, are eligible to receive funding. Numerous bioenergy projects have benefited from the program in recent years.

One of these projects includes a field demonstration of a power, refrigeration, heat, and a fresh water plant that is capable of running on a variety of biomass-derived fuels—including crop and forest wastes, energy crops, and municipal wastes, in addition to hydrogen and conventional fuels. Located at the University of Florida Energy Research Park, the plant uses the university's patented PoWER technology and is designed to provide essentials such as fresh water, refrigeration, and electricity even during grid outages that can occur due to hurricanes and other emergencies.

To learn more about the program, as well as the renewable energy projects that have received funding under this program, visit [www.floridaenergy.org/energy/energyact/grants.htm](http://www.floridaenergy.org/energy/energyact/grants.htm).

Sources: DSIRE

## 5.6 INFORMATION SHARING

Potential lenders and investors will not necessarily be aware of the financial incentives offered in each state for bioenergy development. States can facilitate financing of bioenergy projects by providing information about financing sources. This information will help developers, investors, and lenders take advantage of revenue streams as well as any federal and municipal financing options.

In addition, states can develop their own outreach programs that educate consumers, potential markets, and

regulators about the benefits of bioenergy and how it will meet state goals. Additional options are described in Section 5.7—Resources for Detailed Information.

Some examples of outreach efforts that can be used by states include:

- **Wood Stove Changeout Campaign.** U.S. EPA offers resources to assist states and local governments with successful implementation of a Wood Stove Changeout Campaign, including how to identify potential partners, identify sources of funding, develop a project plan, implement the campaign, and measure success. States provide information and incentives (e.g., rebates or discounts) to encourage residents to replace their old, conventional wood stoves with EPA-certified wood-burning appliances that burn more cleanly and efficiently. See [www.epa.gov/woodstoves/how-to-guide.html](http://www.epa.gov/woodstoves/how-to-guide.html).
- **Southern Forest Research Partnership materials.** The Southern Forest Research Partnership offers numerous publications, presentations, links, images, case studies, activities, videos, and other educational tools that can be used to share woody biomass information with natural resource management and extension professionals as well as community planning and development professionals. The *Sustainable Forestry for Bioenergy and Bio-based Products Training Curriculum Notebook* is a comprehensive training resource, which includes a trainer's introduction, seven modules, fact sheets, a glossary, evaluation resources, example activities, and a supplemental materials list. See [www.forestbioenergy.net/training-materials](http://www.forestbioenergy.net/training-materials).
- **It All Adds Up To Cleaner Air Resources Toolkit.** While not explicitly designed for bioenergy, this U.S. Department of Transportation step-by-step guide to implementing a public outreach program provides many tips that would be appropriate for any outreach campaign. See [http://www.italladdsup.gov/tools/how\\_to.asp](http://www.italladdsup.gov/tools/how_to.asp).

### 5.6.1 NATIONAL BIOMASS STATE AND REGIONAL PARTNERSHIPS

States can also participate in regional partnerships to share best practices. U.S. DOE's Biomass Program works with the National Biomass State and Regional Partnerships, listed below. Each organization provides leadership in its region with regard to policies and technical issues to advance the use of biomass. Contact information is provided on the program Web sites.

**Great Lakes Regional Biomass Energy Program**  
(Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, Wisconsin) [www.cglg.org/biomass](http://www.cglg.org/biomass)

**Northeast Regional Biomass Energy Program**  
(Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont) [www.nrbp.org/](http://www.nrbp.org/)

**Pacific Regional Biomass Energy Program**  
(Alaska, Hawaii, Idaho, Oregon, Montana, Washington) [www.pacificbiomass.org](http://www.pacificbiomass.org)

**Southern State Energy Board**  
(Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North

Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, Puerto Rico, U.S. Virgin Islands) [www.sseb.org/](http://www.sseb.org/)

**Southeast Regional Biomass Energy Program**  
(Alabama, Arkansas, D.C., Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Puerto Rico, South Carolina, Tennessee, Virgin Islands, Virginia, West Virginia) [www.serbep.org/](http://www.serbep.org/)

**Western Regional Energy Program**  
(Arizona, California, Colorado, Kansas, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wyoming) [www.westgov.org/wga/initiatives/biomass/](http://www.westgov.org/wga/initiatives/biomass/)

## 5.7 RESOURCES FOR DETAILED INFORMATION

Resource	Description	URL
<b>Bioenergy</b>		
<b>Capturing the Full Potential of Bioenergy: A Model for Regional Bioenergy Initiatives</b> , GEN Publishing, Inc., 2007.	Advances a step-by-step approach for advancing bioenergy.	<a href="http://www.liebertonline.com/doi/abs/10.1089/ind.2007.3.120">www.liebertonline.com/doi/abs/10.1089/ind.2007.3.120</a>
<b>Clean Energy-Environment Guide to Action: Policies, Best Practices, and Action Steps for States</b> , U.S. EPA, 2006.	This Web site and guide present 16 policies that states use to advance clean energy.	<a href="http://www.epa.gov/cleanrgy/stateandlocal/guidetoaction.htm">www.epa.gov/cleanrgy/stateandlocal/guidetoaction.htm</a>
<b>Clean Energy Lead by Example Guide</b> , U.S. EPA, 2009.	Describes proven strategies, resources, and tools to help states save money and reduce greenhouse gas emissions by adopting clean energy practices in their facilities, operations, and vehicle fleets.	<a href="http://www.epa.gov/cleanenergy/documents/epa_lbe.pdf">www.epa.gov/cleanenergy/documents/epa_lbe.pdf</a>
<b>Database of State Incentives for Renewable Energy (DSIRE)</b> .	Searchable database of incentives relevant to bioenergy, by state. Select a renewable energy search, by technology, for biomass, CHP, and/or landfill gas. The database is updated routinely.	<a href="http://www.dsireusa.org/">www.dsireusa.org/</a>
<b>State Policies for Promoting the Next Generation of Biomass Technologies</b> , Great Plains Institute, November 22, 2006.	Summarizes recommendations on state policies to advance biomass.	<a href="http://www.ef.org/documents/BWG_State_Policy_Menu_Final_v3.pdf">www.ef.org/documents/BWG_State_Policy_Menu_Final_v3.pdf</a>
<b>State Incentives and Resources Search</b> , U.S. DOE.	This Web page includes state energy information for biomass, other renewable energy, and fossil energy.	<a href="http://www1.eere.energy.gov/industry/about/state_activities/incentive_search.asp">www1.eere.energy.gov/industry/about/state_activities/incentive_search.asp</a>

## 5.7 RESOURCES FOR DETAILED INFORMATION *(cont.)*

Resource	Description	URL
<b>Developing State Policies Supportive of Bioenergy Development</b> , Southern States Energy Board, 2002.	Analyzes policy options to advance bioenergy, based on regional experiences in the Southeast.	<a href="http://www.osti.gov/bridge/servlets/purl/828971-Pbx12e/native/828971.pdf">www.osti.gov/bridge/servlets/purl/828971-Pbx12e/native/828971.pdf</a>
<b>Environment and Energy Study Institute (EESI)</b> .	This Web site includes information on bioenergy and federal and state incentives.	<a href="http://www.eesi.org/Sustainable_Biomass_Energy_Program">www.eesi.org/Sustainable_Biomass_Energy_Program</a>
<b>It All Adds Up to Cleaner Air Resources Toolkit</b> , U.S. Department of Transportation.	While not explicitly designed for bioenergy, this step-by-step guide to implementing a public outreach program provides many tips that would be appropriate to any outreach campaign.	<a href="http://www.italladdsup.gov/tools/how_to.asp">www.italladdsup.gov/tools/how_to.asp</a>
<b>Southern Forest Research Partnership</b> .	Offers numerous publications, presentations, links, images, case studies, activities, videos, and other educational tools that can be used to share woody biomass information with natural resource management and extension professionals as well as community planning and development professionals.	<a href="http://www.forestbioenergy.net/training-materials">www.forestbioenergy.net/training-materials</a>
<b>State Woody Biomass Utilization Policies</b> , University of Minnesota, Department of Forest Resources, Staff Paper 199. Becker, D.R., and C. Lee. 2008.	A comprehensive database of woody biomass legislation for each state in the United States.	<a href="http://www.forestry.umn.edu/publications/staffpapers/Staffpaper199.pdf">www.forestry.umn.edu/publications/staffpapers/Staffpaper199.pdf</a>
<b>Biopower/Bioheat</b>		
<b>Green-e Certification Process</b> .	A voluntary market for renewable energy certificates exists, and some kinds of biopower generation are eligible for Green-e certification. Eligible sources must go through the certification process to be able to sell certified products.	<a href="http://www.green-e.org/docs/Appendix_D-Green-e_National_Standard.pdf">www.green-e.org/docs/Appendix_D-Green-e_National_Standard.pdf</a> and <a href="http://www.green-e.org/getcert_re_6steps.shtml#rec">www.green-e.org/getcert_re_6steps.shtml#rec</a>
<b>State Energy Program</b> .	This collaboration of DOE and the states provides joint funding for state formula grant projects and local energy efficiency and renewable energy projects.	<a href="http://apps1.eere.energy.gov/state_energy_program/">http://apps1.eere.energy.gov/state_energy_program/</a>
<b>State Technologies Advancement Collaborative Program</b> , U.S. DOE, National Association of State Energy Officials, Association of State Energy Research and Technology Transfer Institutions.	This collaboration provides funding for state energy efficiency and renewable energy projects.	<a href="http://www.stacenergy.org">www.stacenergy.org</a>
<b>Biofuels/Bioproducts</b>		
<b>Alternative Fuels Data Center: All State Incentives and Laws</b> , U.S. DOE, NREL.	The data center is a comprehensive clearinghouse of data, publications, tools, and information related to advanced transportation technologies.	<a href="http://www.afdc.energy.gov/afdc/data/methodology.html">www.afdc.energy.gov/afdc/data/methodology.html</a>
<b>Funding Database – Biomass/Biogas</b> , U.S. EPA.	This database of financial and regulatory incentives at the state level is updated monthly.	<a href="http://www.epa.gov/chp/funding/bio.html">www.epa.gov/chp/funding/bio.html</a>
<b>Understanding and Informing the Policy Environment: State-Level Renewable Fuels Standards</b> , NREL, January 2007.	Summary and analysis of state actions on renewable fuels standards.	<a href="http://www.nrel.gov/docs/fy07osti/41075.pdf">www.nrel.gov/docs/fy07osti/41075.pdf</a>

## 5.7 RESOURCES FOR DETAILED INFORMATION (cont.)

Resource	Description	URL
<b>Funding Landfill Gas Energy Projects: State, Federal, and Foundation Resources</b> , U.S. EPA.	This guide from the Landfill Methane Outreach Program details potential sources of funding for landfill gas projects.	<a href="http://www.epa.gov/lmop/res/guide/index.htm">www.epa.gov/lmop/res/guide/index.htm</a>
<b>State Examples</b>		
<b>Arkansas</b>	State-Specific Financing Information	<a href="http://arkansasenergy.org/solar-wind-bioenergy/bioenergy.aspx">http://arkansasenergy.org/solar-wind-bioenergy/bioenergy.aspx</a>
<b>Florida</b>	State-Specific Financing Information	<a href="http://www.floridafarmtofuel.com/Downloads/FTF%20Grant%20Agreement%20Contract%20092507.pdf">www.floridafarmtofuel.com/Downloads/FTF%20Grant%20Agreement%20Contract%20092507.pdf</a>
<b>Michigan</b>	State-Specific Financing Information	<a href="http://michigan.gov/documents/cis/CIS_EO_Funding_Opportunities_192768_7.pdf">http://michigan.gov/documents/cis/CIS_EO_Funding_Opportunities_192768_7.pdf</a>
<b>Montana</b>	State-Specific Financing Information	<a href="http://www.deq.state.mt.us/Energy/bioenergy/Biodiesel_Production_Educ_Presentations/Combined_Biodiesel_Ethanol_Govt_Incentives_Montana_Jan07_bshh.pdf">www.deq.state.mt.us/Energy/bioenergy/Biodiesel_Production_Educ_Presentations/Combined_Biodiesel_Ethanol_Govt_Incentives_Montana_Jan07_bshh.pdf</a>
<b>Washington</b>	State-Specific Financing Information	<a href="http://agr.wa.gov/Bioenergy/">http://agr.wa.gov/Bioenergy/</a>

## 5.8 REFERENCES

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- **DSIRE (Database of State Incentives for Renewables & Efficiency)**. North Carolina Solar Center, Raleigh, NC. [www.dsireusa.org](http://www.dsireusa.org).
- **Pew Center on Global Climate Change**, 2008. *Mandates and Incentives Promoting Biofuels*. Pew Center on Global Climate Change, Arlington, Virginia, August 5, 2008. [http://pewclimate.org/what\\_s\\_being\\_done/in\\_the\\_states/map\\_ethanol.cfm](http://pewclimate.org/what_s_being_done/in_the_states/map_ethanol.cfm).
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