

# Executive Summary



Across the country, states are looking for ways to tackle their energy, environmental, and climate change challenges through a variety of approaches. One frequently discussed option is the use of biomass resources to develop bioenergy—bioheat, biopower, biofuels, and bioproducts.

Many information resources are available that discuss biomass/bioenergy in a highly technical manner and/or that focus only on one feedstock (e.g., forest residues, agricultural crops) or product (e.g., biofuels). Alternately, some entities present bioenergy information that is relevant to the general public but is too simplified for decision makers.

This State Bioenergy Primer is designed to bring many of these resources together and provide useful, targeted information that will enable a state decision maker to determine if he/she wants or needs more details.

The primer offers succinct descriptions of biomass feedstocks (Chapter 2), conversion technologies (Chapter 2), and the benefits/challenges of promoting bioenergy (Chapter 3). It includes a step-wise framework, resources, and tools for determining the availability of feedstocks (Chapter 4), assessing potential markets for biomass (Chapter 4), and identifying opportunities for action at the state level (Chapter 4). The primer also

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Options for Advancing Bioenergy

describes financial, policy, regulatory, technology, and informational strategies for encouraging investment in bioenergy projects and advancing bioenergy goals (Chapter 5). Each chapter contains a list of selected resources and tools that states can use to explore topics in further detail.

## BIOENERGY CONSIDERATIONS

Biomass energy, or bioenergy—fuel or power derived from organic matter—can be used to produce transportation fuel, heat, electric power, or other products. Bioenergy currently represents approximately 3 to 4 percent of the United States’ total energy production (EIA, 2008).

The benefits of increased use of bioenergy depend upon the intended use and source, but can include: improved energy security and stability through reduced dependence on foreign sources of energy; increased economic development and job growth through creation of new domestic industries and expansion of existing industries; and expanded environmental benefits, including reduction of greenhouse gas (GHG) emissions.

Along with the opportunities, however, are potential challenges—among them the need for reliable feedstock supplies, the problems of infrastructure constraints for delivering of feedstocks and distribution of products, the potential for ancillary environmental and land use impacts resulting from increasing biomass supplies to produce bioenergy, and the potential for tradeoffs in air emissions resulting from direct combustion of biomass.

Each state’s individual geography, economic base, market conditions, climate, and state-specific incentives and regulations will impact the feedstocks and bioenergy outputs that make economic and environmental sense for that state to pursue.

A decision maker starts identifying potentially fruitful bioenergy opportunities by examining all potential feedstocks—both agricultural/energy crops (e.g., corn, soybeans, switchgrass) and waste/opportunity fuels (e.g., wastewater treatment biogas, wood waste, crop residues, manure, landfill gas, solid waste)—and their specific location and costs within the state. The evaluation of biomass resources is followed by an assessment of the potential markets and competition for those feedstocks and what steps would be required to capitalize on the bioenergy potential.

If a decision maker determines that the benefits of bioenergy outweigh the challenges for their state, numerous options are available for advancing bioenergy goals. Favorable policy development, favorable regulatory development, capitalization of environmental revenue streams, direct investment/financing or incentives, and research and development are all options for effectively promoting bioenergy in a state.

Each of the chapters in this Bioenergy Primer describes how states consider these and other issues as they decide whether or not to develop a bioenergy promotion strategy, and is augmented by case studies about how states have successfully implemented a variety of approaches.

