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.

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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.