ENGINEERING COMMITTEE
Energy Management Subcommittee

SCTE OPERATIONAL PRACTICE

SCTE 218 2015

Alternative Energy, Taxes, Incentives, and Policy Reference Document

DSIRE's summary maps provide a geographical overview of financial incentives and regulatory policies that promote renewable energy and energy efficiency in the U.S. The map is populated in real-time based on the content of the database. Users can select a Program Type and a Technology to see which states have a certain policy or incentive for a particular technology. You can also follow the link below to see DSIRE's more detailed manually-updated summary maps.

Filter Options

PROGRAM TYPE

All

TECHNOLOGY

All

California
Policies & Incentives: 199
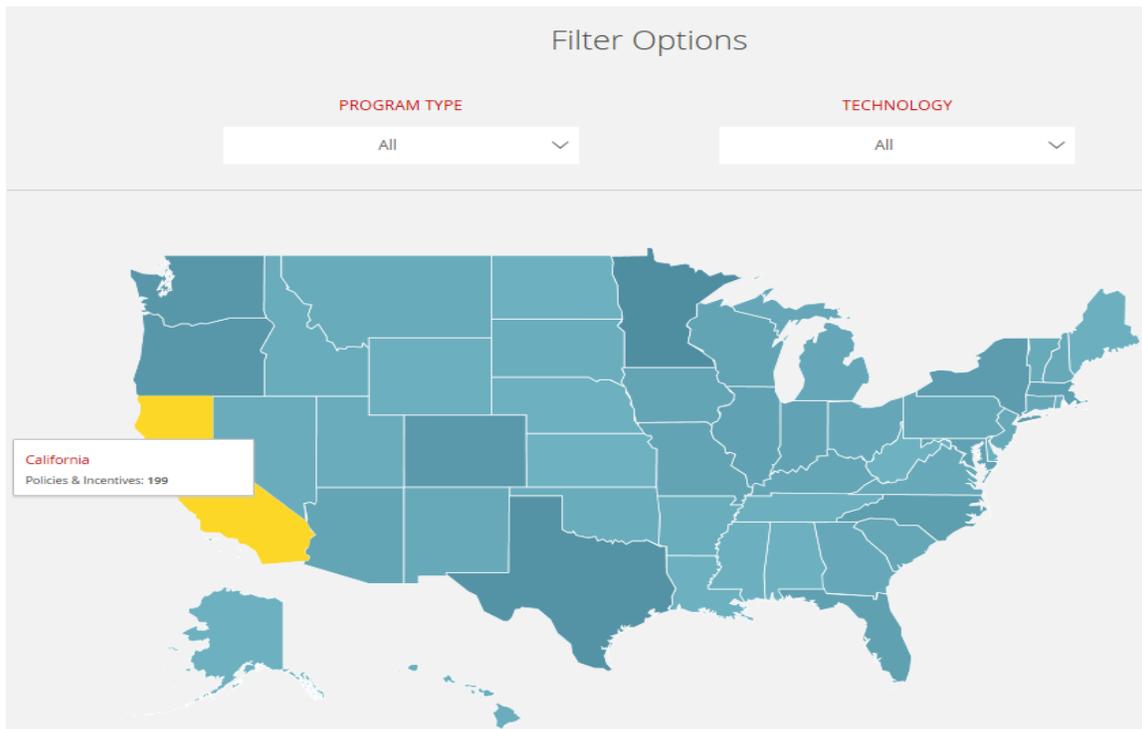
Figure 2: DSIRE's Summary Map of Incentives and Policies

8.2 **U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy (EERE)**
EERE provides oversight for two overarching areas relevant to the Energy 2020 Alternative Energy goals. These are:

8.2.1 ***Renewable electricity generation***
  a. Solar - http://energy.gov/eere/renewables/solar
  b. Geothermal - http://energy.gov/eere/renewables/geothermal
  c. Wind - http://energy.gov/eere/renewables/wind
  Water - http://energy.gov/eere/renewables/water
8.2.2 ***Sustainable transportation***
  e. Vehicles - http://energy.gov/eere/transportation/vehicles

f. The Alternative fuels data center - provides information on federal and state laws and incentives for alternative fuels
http://www.afdc.energy.gov/laws/
g. Active funding opportunities are provided by the Vehicles Technologies Office - http://energy.gov/eere/vehicles/vehicle-technologies-office-financial-opportunities
h. Bioenergy - http://energy.gov/eere/transportation/bioenergy
i. Hydrogen fuel cells - The site provides information on the basis of various technologies, the main issues to take into consideration when thinking about renewable energy solutions to advance technical information are based on sound scientific research. There is also information on existing programs and initiatives and financing options and incentives. Each program also offers email notifications that bring relevant up to date information to your fingertips. http://energy.gov/eere/transportation/hydrogen-and-fuel-cells

Information on financial opportunities is hosted by the Department of Energy's Office of Energy Efficiency and Renewable Energy. Please note that you will be redirected to the DSIRE site for information on incentives.
http://energy.gov/eere/sunshot/financial-opportunities

8.3 National Renewable Energy Lab

NREL is the national laboratory of the U.S. Department of Energy, EERE program, operated by the Alliance for Sustainable Energy, LLC. NREL focuses on research, development and commercialization, and deployment of renewable energy and energy efficiency technologies. Renewable energy sources included in NREL's portfolio are solar, wind, biomass hydrogen, geothermal and water. Systems integration around grid integration, distributed energy interconnection, battery and thermal storage and transportation, are other areas of focus.

NREL partners with private industry, federal agencies, state and local government and internationally in their programs. There is a cadre of resources in their Energy Analysis Program to assist in the decision-making to advance from concept to commercial application to market penetration for renewable energy. Featured analysis, models and tools, data and resources are available at http://www.nrel.gov/analysis/. This includes:

8.3.1 System Advisor Model (SAM)

SAM is a performance and financial model to facilitate decision making in renewable energy, are also provided in Section 8 of this document. According to the NREL, SAM can automatically download and populate data from DSIRE, OpenEI Utility Rate Database, other NREL resources data as well as other self-inputted variables to model performance, financial metrics, levelized cost of energy and cash flow, incentives, etc. Additional information on SAM can be accessed at https://sam.nrel.gov/.

8.3.2 Fleet DNA

NREL's transportation research includes a Fleet DNA resource which provides data, charts, and reports on various types of vehicles that help in the selection of technologies for fleet. Access information at http://www.nrel.gov/transportation/fleettest_fleet_dna.html. Links to additional tools are also available at this site.

8.3.3 *Resource Maps*

Below are several links to interactive maps that include analytical tools for renewable energy resources. These can be used to help determine which energy technologies are viable solutions in a specified region. The maps include data for wind, solar and geothermal energy resources.

Solar Prospector (http://maps.nrel.gov/prospector) is a mapping and analysis tool used to access solar geospatial data for determination of utility-scale solar plants. The data can also be downloaded from the site in several different file types. See Figure 3.
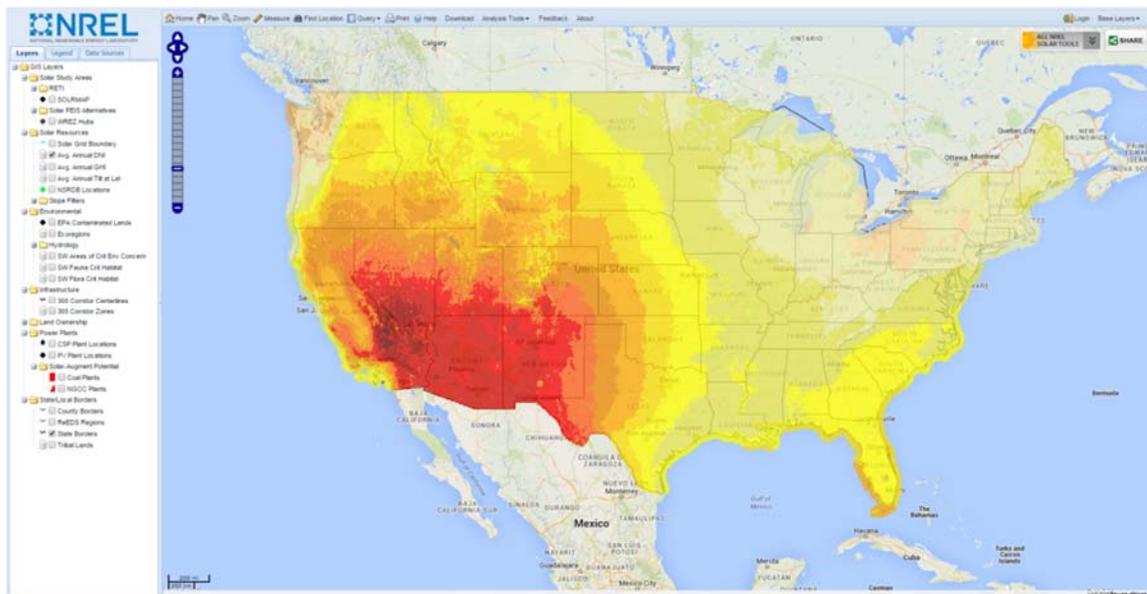
Figure 3: Solar Prospector Map and Analysis Tool

Wind Prospector (http://maps.nrel.gov/wind_prospector) is a mapping and analytics tool that provides the user with wind speeds across the continental United States. This allows for better or more informed site selection. See Figure 4.
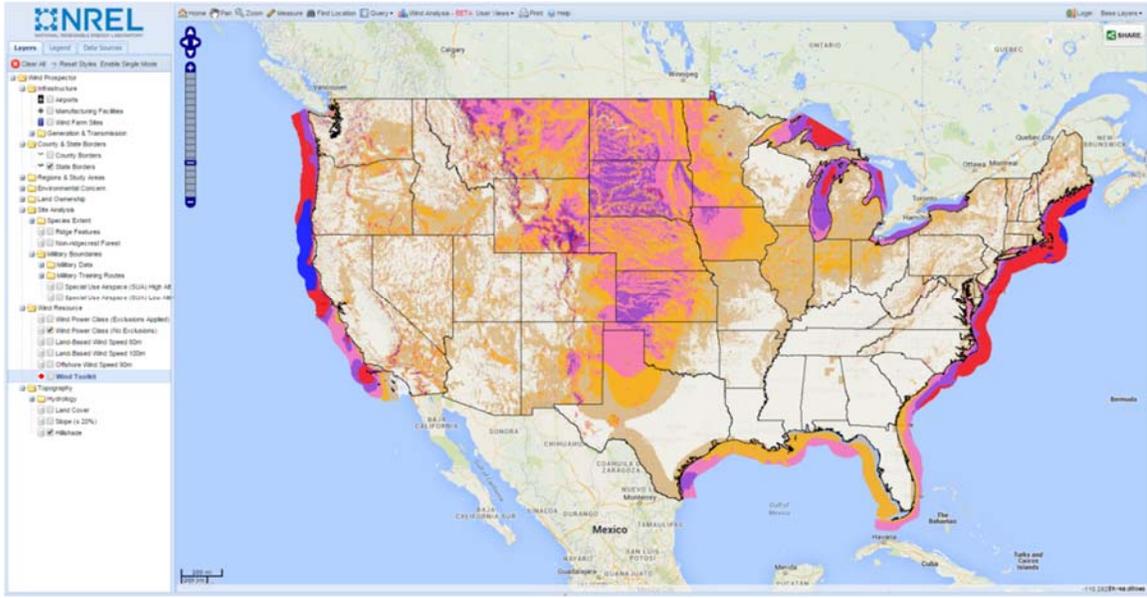
Figure 4: Wind Prospector Map and Analytics Tool

Geothermal *Prospector* (http://maps.nrel.gov/gt_prospector) allows users to identify locations that are favorable to geothermal energy development. See Figure 5.
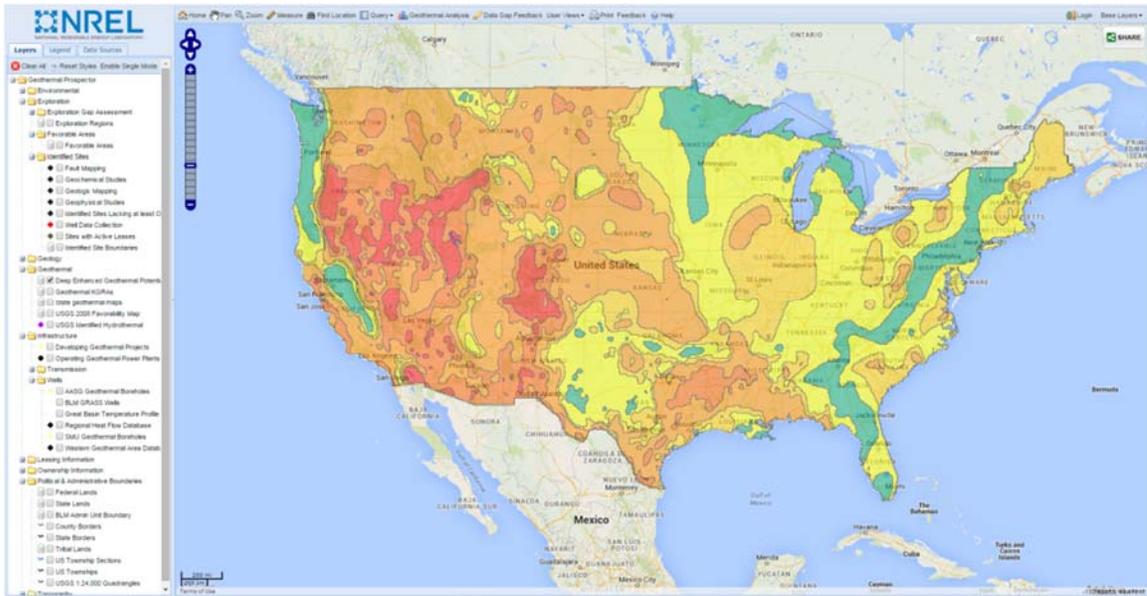
Figure 5: Geothermal Prospector Map Tool

8.4 Financial Tools

8.4.1 Cost of Renewable Energy Spreadsheet Tool (CREST)

NREL publishes a *Cost of Renewable Energy Spreadsheet Tool (CREST)*, which enables economic cash flow models. It assesses project economics, design cost-based incentives and evaluates the impact of various state and federal structure.

The tool is available for solar, wind, geothermal, anaerobic digestion and fuel cells. The spreadsheets are available at https://financere.nrel.gov/finance/content/crest-cost-energy-models. A manual, information webinars are available at the link.

8.4.2 Job and Economic Development Impact (JEDI) Model

The Job and Economic Development Impact Model estimates the economic impacts of constructing and operating power generation and biofuel plants. Available models include wind, biofuels, solar, natural gas, hydroelectric, and geothermal. Traditional fuel sources such as coal and petroleum are also modeled. A web-based JEDI PV SAM

8.4.3 H2A Hydrogen Analysis (H2A) Model

The *Hydrogen (H2AModel)* is a spreadsheet-based tool that enables a comparative analysis of costs, energy and environmental tradeoffs of hydrogen production http://www.hydrogen.energy.gov/h2a_analysis.html

9.0 SUMMARY

Deployment of AE technologies is important in achieving SCTE Energy 2020 goal to reduce grid dependence by 10% by 2020. This operational practice framework provides a guide and references to available resources that will enable MSOs to make informed, fact-based and financially sound decisions on what, where, when and how to deploy AE technologies.