

## ***Use of Existing Reports***

Many previous analyses have been performed of renewables in California. This project seeks to synthesize this data and provide value-added analysis of broad policy and economic issues that impact the selection of the most cost effective CREZs. The existing knowledge base creates a very strong foundation for a model designed to provide high-level insights, while still having the benefit of access to detailed reference data that has already been accumulated.

Some of the reports we have identified that will be of value for this project include:

### **Solar Thermal**

- NREL Cal CSP master plan: An overview of concentration solar power's success in California, including market trends and benefits, general size and location estimates of CSP in southern California - [http://www.nrel.gov/csp/pdfs/2007/aringhoff\\_cal\\_csp\\_masterplan.pdf](http://www.nrel.gov/csp/pdfs/2007/aringhoff_cal_csp_masterplan.pdf)
- NREL CSP CA map: Direct normal solar radiation maps, filtered by solar resource and land availability, identify the most economically suitable lands available for the deployment of large-scale concentration solar power plants in California - [http://www.nrel.gov/csp/downloads/csp\\_ca\\_nrel.jpg](http://www.nrel.gov/csp/downloads/csp_ca_nrel.jpg)
- B&V/NREL study on CSP in CA - [http://www.nrel.gov/csp/news\\_california.html](http://www.nrel.gov/csp/news_california.html)
- National Solar Radiation Data Base: The updated 1991-2005 NSRD holds solar and meteorological data for 1,454 locations in the United States and its territories - [http://rredc.nrel.gov/solar/old\\_data/nsrdb/1991-2005/](http://rredc.nrel.gov/solar/old_data/nsrdb/1991-2005/)
- Solargenix/DOE: Economic, Energy, and Environmental benefits of solar thermal development, including general transmission barriers - <http://www.solargenix.com/pdf/CSPCalifornia.pdf>

### **Wind**

- CEC high resolution wind speed maps for 30, 50, 70, and 100 m - <http://www.energy.ca.gov/maps/wind.html>
  - 50 meter Seasonal Wind Speed Maps
- CEC Intermittency Analysis Project (IAP)
  - Characterizing new wind resources in California, including hourly wind generation profiles and combined rated capacities at 14 good wind sites - <http://www.energy.ca.gov/2007publications/CEC-500-2007-014/CEC-500-2007-014.PDF>
  - 2010 Tehachapi case, including general transmission analysis - <http://www.energy.ca.gov/2007publications/CEC-500-2007-009/CEC-500-2007-009.PDF>
- CEC wind performance report summary 2002-2003 includes detailed maps of California's wind pass areas - <http://www.energy.ca.gov/2006publications/CEC-500-2006-060/CEC-500-2006-060.PDF>
- CEC strategic value analysis (June 2005): Dated economic information, but some maps of detailed wind resource hotspots with power line overlays.
- CEC wind turbine technologies effect on transmission system operations and performance also available

### **Solar PV**

- CEC report on CA solar resources: broken down by county - [http://www.geni.org/globalenergy/library/media\\_coverage/RefocusWeekly/california-has-potential-for-17-million-MW-of-solar-capacity/CEC-500-2005-072-D.pdf](http://www.geni.org/globalenergy/library/media_coverage/RefocusWeekly/california-has-potential-for-17-million-MW-of-solar-capacity/CEC-500-2005-072-D.pdf)

### **Geothermal**

- CEC geothermal strategic value analysis (June 2005): Brief overview of all CA geothermal sites including detailed environmental impacts.
- GeothermEx CEC PIER report (April 2004): is the best for more detailed information - [http://www.energy.ca.gov/pier/final\\_project\\_reports/500-04-051.html](http://www.energy.ca.gov/pier/final_project_reports/500-04-051.html)

- CA Division of Oil, Gas, and Geothermal Resources map of geothermal resources - <ftp://ftp.consrv.ca.gov/pub/oil/maps/Geothermal/MapS-11.pdf>

### **Biomass**

- CEC Biomass strategic value analysis, June 2005: detailed biomass assessment including plant locations with forest fire reduction and unemployment analysis. Also, has some landfill gas and other biogas analysis.
- UC Davis biomass assessment April 2005: breaks down available biomass estimations by county for agriculture, forestry, and municipal waste - <http://biomass.ucdavis.edu/pages/reports/Preliminary05ResourceUpdate.pdf>

### **Landfill Gas**

- EPA LMOP database - <http://www.epa.gov/lmop/proj/xls/lmopdataca.xls>

### **Hydro**

- Navigant statewide small hydropower resource assessment: Small hydroelectric facilities that do not require a new or increased appropriation of diversion of water including inline and run-of-river hydro
- PIER California small hydropower and ocean wave energy resources: base report for Navigant natural water courses and in-conduit hydropower study, first half of report deals with small hydropower - <http://www.energy.ca.gov/2005publications/CEC-500-2005-074/CEC-500-2005-074.PDF>

### **Ocean**

- Carbon Trust Tidal Stream Resource and Technology Summary Report, and Resource Assessment Report (prepared by Black & Veatch)
- EPRI California wave power: overview report on all developable wave energy resources in California including technology overview of current wave energy devices - [http://www.epri.com/oceanenergy/attachments/wave/reports/Phase\\_15\\_CA\\_Report\\_031407.pdf](http://www.epri.com/oceanenergy/attachments/wave/reports/Phase_15_CA_Report_031407.pdf)
- EPRI tidal in-stream power plant: system level design, performance, cost and economic assessment for golden gate - [http://www.epri.com/oceanenergy/attachments/streamenergy/reports/006\\_CA\\_06-10\\_-06.pdf](http://www.epri.com/oceanenergy/attachments/streamenergy/reports/006_CA_06-10_-06.pdf)
- EPRI San Francisco Pelamis plant: Detailed estimate using most commercially mature wave energy device from UK - [http://www.epri.com/oceanenergy/attachments/wave/reports/006\\_San\\_Francisco\\_Pelamis\\_Conceptual\\_Design\\_12-11-04.pdf](http://www.epri.com/oceanenergy/attachments/wave/reports/006_San_Francisco_Pelamis_Conceptual_Design_12-11-04.pdf)
- EPRI San Francisco WEC plant: same report as above using an oscillating water column device - [http://www.epri.com/oceanenergy/attachments/wave/reports/006\\_San\\_Francisco\\_Energetech\\_Conceptual\\_Design\\_RB\\_12-20-04.pdf](http://www.epri.com/oceanenergy/attachments/wave/reports/006_San_Francisco_Energetech_Conceptual_Design_RB_12-20-04.pdf)
- PIER California small hydropower and ocean wave energy resources: second half of report deals with ocean power - <http://www.energy.ca.gov/2005publications/CEC-500-2005-074/CEC-500-2005-074.PDF>

In addition to these published reports, the study will also consider data from signed renewable PPAs, the ISO interconnection queue, and perhaps data on shortlisted projects from IOU solicitations.