

Overview and Status Report on the Renewables Portfolio Standard

Program Adoption & Purpose

In 2002 the California State Legislature adopted groundbreaking legislation (SB 1078, Sher) to require the state's investor-owned utilities (e.g. Pacific Gas & Electric, Southern California Edison, San Diego Gas and Electric Company, collectively referred to as IOUs) and the private companies that compete with the utilities to increase their annual purchases of electricity from renewable resources by at least 1% per year so that 20% of their sales would come from renewable sources by 2017. In 2006 legislation accelerated the 20% requirement to the end of 2010 (SB 107, Simitian). Publicly owned utilities (POUs) were called upon in those bills to implement and enforce an RPS program that "recognizes the intent of the Legislature to encourage renewable resources, while taking into consideration the effect of the standard on rates, reliability, and financial resources and the goal of environmental improvement."

Although many now view the RPS program as one designed to reduce greenhouse gas (GHG) emissions, in fact the program was developed on the heels of state's electricity crisis which was in part due to the volatility of natural gas markets. The statutory intent of the RPS is stated as:

Increasing California's reliance on eligible renewable energy resources may promote stable electricity prices, protect public health, improve environmental quality, stimulate sustainable economic development, create new employment opportunities, and reduce reliance on imported fuels. (Public Utilities Code Section 399.11[b])

The statute does not reference greenhouse gases (GHG). However since the initial adoption of the RPS program, the necessity of bringing more renewable resources to the grid has been heightened as a result of the mandate that the state reduce its GHG emissions to 1990 levels by 2020 (AB 32, Nunez/Pavley, 2006).

The RPS program was not intended to require renewable energy purchases irrespective of cost. Each contract for the development and purchase of renewable energy is submitted to the CPUC for review. Any contract below the market price is deemed per se reasonable. Any contract above the market price is submitted to a procurement review group to consider the reasonableness of costs. To address the overall costs of the RPS, an above-market cost cap was determined for

each IOU. If the IOUs costs reach that cap in any given year, then the requirement for additional renewable energy purchases at above-market costs is waived. The cost cap was triggered but the IOUs continue to pursue renewable contracts to meet the RPS goals.

IOU Progress

Since the RPS statute took affect in 2003, renewable capacity has steadily increased each year with a total of 1,702 MW of new renewable capacity coming online through 2010. With that new generation, California's three largest IOUs collectively served 15% of 2009 retail electricity sales with renewable power. The IOUs, which provide service to about three-fourths of California utility customers, report the following individual RPS percentages through 2009:

- Pacific Gas and Electric (PG&E) 14.4%
- Southern California Edison (SCE) 17.4%
- San Diego Gas & Electric (SDG&E) 10.5%.

Progress reports for 2010 will be available by March and are expected to show that the IOUs are collectively at approximately 18% and are expected to achieve the 20% RPS in 2011-2012.

The IOUs are also seeing strong interest from renewable generators in California's market and from larger and more experienced developers. Bids received by the IOUs for new generation hit a record in 2009 bringing in potential contracts for more than half of the generation needed to meet a 33% target in 2020. The CPUC has approved contracts submitted by IOUs for more than 16,000 megawatts of renewable generation. Coupled with the contracts the IOUs have pending CPUC approval and under negotiation, the IOUs have enough generation under contract to exceed the 33% goal by 25%. However, contracting continues due to anticipated challenges of bringing all of that generation online.

For additional information please see:

<http://www.cpuc.ca.gov/PUC/energy/Renewables/>

POU Progress

California has 46 local publicly owned utilities (POUs) which include municipal utilities, irrigation districts and joint powers authorities. They collectively serve approximately 25% of California's retail electrical load. The POUs RPS requirement has been interpreted differently by the CEC and the POUs. The CEC reports that the POUs are required to "implement a Renewables Portfolio Standard, but are given flexibility in developing utility-specific targets, timelines, and resource eligibility rules." Most POUs have adopted an RPS target of 20% but the dates for achieving that goal varies greatly starting in 2010 for some and going out as far as 2020 for others. Some POUs (14) have already adopted a 33% (or more) by 2020 target.

The POUs are required to annually report to the CEC the progress made in establishing and meeting RPS goals and the resource mix used to serve its customers. Compliance data through 2009 and reported by the CEC in November 2010 show that the POUs RPS deliveries range from nothing to 61%. *Collectively* that data appears to show:

Northern California Power Authority	20%
Sacramento Municipal Utility District	21%
L.A. Department of Water & Power	14%
Southern California Power Authority	2% - 20%

For additional information please see:

<http://www.energy.ca.gov/2008publications/CEC-300-2008-005/index.html>

Transmission

Historically, electric generation sources could be located reasonably close to the load that generation was intended to serve which reduced the number of transmission lines needed. However transmission planning had to reverse course to accommodate the addition of significant renewable resources due to the fact that they are generally location constrained by the availability of the power source (e.g. where the wind blows and the sun shines). They are often far from the transmission grid and load centers, requiring extensive transmission upgrades. Consequently transmission has been seen as a major barrier to achieving the RPS goals.

The intermittency of some renewable generation, primarily wind and solar, has also created a challenge for grid operators. The electric grid needs a carefully balanced flow of electrons to maintain reliability. The fluctuation of wind and solar generation can create significant operational impacts to the grid and is requiring distribution and transmission grid operators to significantly adjust the design and operation of the grid to integrate that intermittent generation in a reliable and cost-effective manner.

California Independent System Operator

The integration of those resources and planning for transmission upgrades is primarily the responsibility of the California Independent System Operator (CAISO) which has been charged by the Legislature to operate the grid reliably and efficiently and to provide fair and open transmission access. The CAISO manages generation for all IOUs and some POUs. The Sacramento Municipal Utility District and Los Angeles Department of Water and Power manage their own grid separate from the CAISO.

As a result of the RPS the coordination of renewable procurement with transmission and distribution grid planning and management has become a critical element of the success of the program. The CPUC and ISO work closely and all utilities and other stakeholders have been incorporated into the planning process through the Renewable Energy Transmission Initiative (RETI) and the California Transmission Planning Group (CTPG).

For additional information please see:

<http://www.caiso.com/green/greenhome.html>

Renewable Energy Transmission Initiative

The RETI was a statewide initiative to help identify the infrastructure needed to accommodate California's renewable energy goals, support future energy policy, and facilitate transmission corridor designation and transmission and generation siting and permitting. RETI participants included the CAISO, CPUC, CEC, IOUs, POU, generation developers, environmental groups and other stakeholders. The RETI identified the concentration of renewable resources that can be developed in the most cost effective and environmentally benign manner and ranked those resource areas into a list of “competitive renewable energy zones” (CREZs). From there the zones were ranked and a conceptual transmission plan for the zones was prepared. The overwhelming majority of the highest ranked of the CREZs fall within the Mojave and Colorado desert regions of Southern California.

For additional information please see:

<http://www.energy.ca.gov/reti/index.html>

Desert Renewable Energy Conservation Plan

To facilitate development of the desert regions, the Schwarzenegger Administration called for the development of a Desert Renewable Energy Conservation Plan (DRECP). When complete, the plan will provide binding, long-term endangered species permit assurances and facilitate renewable energy project review and approval processes. To oversee the implementation of the DRECP, a Renewable Energy Action Team was formed consisting of the California Natural Resources Agency, CEC, California Department of Fish and Game, Bureau of Land Management, and the U.S. Fish and Wildlife Service. Memoranda of Understanding were signed by the participating agencies. Others joining the team include the CPUC, CAISO, National Parks Service, and the Department of Defense. The role of the DRECP will be discussed in greater detail at a later hearing concerning the challenges of siting renewable generation.

For additional information please see:

<http://www.drecp.org/>

California Transmission Planning Group

The CTPG was formed on the heels of the RETI and includes the CAISO, CPUC, IOUs and POU. It has taken RETI's conceptual transmission plan and used it as a foundation for more granular joint transmission planning which will then be provided to the CAISO. One of the more significant aspects of this group is that for the first time all utilities, including the POU which operate outside the scope of the CAISO, are participating to develop a joint transmission plan in an effort to prevent duplication and access renewable resources in the most cost-effective manner for ratepayers.

In January the CTPG released a draft statewide transmission plan that identifies the transmission infrastructure needed to reliably and efficiently meet, by 2020, the state's 33% RPS goal. The transmission plan identified in this report is the culmination of the studies performed by CTPG to date. The transmission needs and transmission plan identified by CTPG are not intended to determine specific transmission project scope or routing.

For additional information please see:

<http://www.ctpg.us/public/index.php>

CPUC

At the conclusion of the transmission planning process an IOU must apply to the CPUC for a permit for construction of a transmission line which is referred to as a “certificate of public convenience and necessity (CPCN).” The CPUC reviews permit applications under two concurrent processes: (1) an environmental review pursuant to the California Environmental Quality Act, and (2) the review of project need and costs pursuant to Public Utilities Code sections 1001 et seq. and General Order (G.O.) 131-D CPCN or Permit to Construct. The CPUC is required as a part of this process to also consider cost-effective alternatives to transmission that meet the need for an efficient, reliable, and affordable supply of electricity, including, but not limited to, demand-side alternatives such as targeted energy efficiency, ultraclean distributed generation, and other demand reduction resources.

For additional information please see:

<http://www.cpuc.ca.gov/PUC/energy/Renewables/transmission.htm>