Encouraging Use of Renewable Resources in the Production and Purchase of Electricity

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Introduction

Long-term contracts negotiated by the state Department of Water Resources (DWR) to supply electric power to California consumers over the next decade have had a somewhat stabilizing effect upon the wholesale market. This offers an opportunity to examine the future mix of energy-generation resources and to consider policies to promote increased use of renewable energy.

Natural-gas-fired power plants, which will be constructed over the next two or three years, will provide up to 70 percent of the power in these California contracts.

Renewable resources can diversify the state's energy-generation portfolio in a way that does less harm to air quality and the environment than do conventional power plants. According to the California Energy Commission, renewable resources represents about 11 percent of California's energy-generation portfolio. This does not include hydro power, which in 1999 was about 16 percent of the generation mix, according to commission records.

Definition of Renewable Portfolio Standard (RPS)

Establishing a renewable portfolio standard ensures that a certain amount of the energy generated statewide in an electric-power system comes from renewable resources. An RPS requires a specified percentage of a utility's overall new generating capacity or energy sales to be derived from renewable sources.

Portfolio standards most commonly concern electricity sales, measured in megawatt hours (MWh), as opposed to electric capacity, measured in megawatts (MW).

If this option were implemented in California, the Public Utilities Commission (PUC), in possible collaboration with the Energy Commission, probably would be the most suitable entity to establish an RPS. In addition, the state's new power authority could have a role in implementing or overseeing these requirements. After three to five years, the PUC might be required to review the RPS to help ensure it remains relevant in a future energy market.

Examples of Renewable Portfolio Standards in Other States

The U.S. Department of Energy, www.energy.gov, provided the following examples of the use of renewable portfolio standards.

Maine

Maine has enacted the nation's most significant renewable portfolio standard, requiring at least 30 percent of an electric provider's supply to be from renewable resources. (The percentage among other states with RPS requirements is typically about 5 percent.) Maine is pursuing the dual goals of ensuring an adequate and reliable supply of electricity while encouraging the use of renewable and indigenous resources.

The state derives approximately 50 percent of its electricity from renewable resources: 17 percent from hydropower, 25 percent from biomass, and the remainder from municipal waste-to-energy plants. The 30 percent RPS requirement not only expands the mix of energy sources, but promotes in-state industry. Co-generation in qualifying plants can be used to help satisfy the 30 percent requirement. To help lessen costs of meeting the RPS requirements, co-generation does not have to rely on renewable resources.

Maine decided not to set the requirement at its actual usage rate of 50 percent because of the possibility that costs might increase when the electric industry becomes more competitive. The law requires the Maine PUC to revisit the

RPS after five years and make recommendations.

New Jersey

New Jersey's energy-restructuring law requires retail electricity suppliers to provide an established amount of power from two "classes" of renewable resources:

- Class I includes wind, solar, fuel cells, ocean energy, landfill methane and biomass (if it is "cultivated and harvested in a sustainable manner").
- Class II includes hydro and waste-to-energy facilities that meet the "highest environmental standards."

New Jersey's RPS began in 2000 with a requirement that 2.5 percent of power had to be produced from Class I or Class II resources. Future increases in the RPS must come from resources in Class I.

Required Class I resources were set at 0.5 percent in January 2001 and will grow to 1 percent by January 1, 2006. An additional 0.5 percent increase will be required each year until the total reaches 4 percent of electrical-power production in 2012.

The New Jersey Board of Public Utilities' interim draft rule implementing the RPS includes reporting requirements, third-party verification, and penalties for noncompliance.

Texas

Texas imposes renewable-energy purchase requirements on competitive retailers, and is implementing procedures to permit trading credits for using renewable-energy sources. The Texas PUC's Renewable Energy Mandate Rule calls for systematically increasing renewable sources of power statewide to 2,000 MW by 2009, in addition to the 880 MW already being produced.

The Renewable Energy Mandate Rule also is aimed at:

- Promoting development of renewable-energy technologies,
- Encouraging construction and operation of renewable-energy projects at sites with the greatest potential for development,
- Reducing air pollution from fossil-fuel electricity generation,
- Responding to customer preferences for more "clean" energy.

Qualifying renewable energy sources include solar, wind, geothermal, hydroelectric, wave or tidal energy, and biomass or biomass-based waste products, including landfill gas. The standard applies to all retail energy providers, including municipal and cooperative utilities, and systems must have been installed after September 1999 to meet requirements.

The Texas PUC established a Renewable Energy Credits Trading Program beginning July 1, 2001, to continue through 2019. A renewable energy credit represents one megawatt hour of qualified renewable energy that is generated and metered in Texas.

Each retailer in Texas is allocated a share of the mandate based on that retailer's pro-rata share of statewide retail-energy sales. Production, sale, transfer, purchase, and retirement of credits will be tracked, and credits can be banked for three years. The penalty for failing to meet the standard will be the lesser of $50 per MWh or 200 percent of the average cost of credits traded during the year.

Nevada

The Nevada Legislature established a renewable portfolio standard as part of its 1997 electrical restructuring legislation. Under this RPS, utilities must derive a minimum percentage of the total electricity they sell from renewable energy resources. Under revisions adopted in 2001, the minimum must increase by 2 percent every two

years – from 5 percent in 2003 to 15 percent by 2013.

At least 5 percent of the renewable energy must be generated from solar power. Other qualifying sources are wind, geothermal, and biomass.

Massachusetts

The Massachusetts Division of Energy Resources in 1999 determined the minimum amount of renewable energy that all suppliers must offer customers based on a percentage of total kilowatt-hour sales. This standard increases according to the following schedule:

- **As of December 31, 2003 –** Suppliers will be required to purchase renewable-energy amounts equivalent to an additional 1 percent of sales. Suppliers could be required to meet this level sooner if the average cost of any renewable technology is found to be within 10 percent of the average spot-market price for electricity in Massachusetts.

- **As of December 31, 2009 –** An additional 0.5 percent of sales will be assessed each year until a date determined by the Division of Energy Resources.

The state Department of Telecommunications and Energy is developing consumer-education materials about electricity suppliers, including environmental considerations. The state Department of Environmental Protection will implement uniform generation-performance standards, and will list the emissions produced per unit of electrical output for any pollutant of concern to public health.

A written statement that includes rates, fuel mix and emissions-pollution levels will be provided to all customers before electricity suppliers initiate services.

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