

CRS Report for Congress

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Renewable Energy and Electricity Restructuring

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Summary

Several electricity industry restructuring bills propose to eliminate the Public Utility Regulatory Policies Act (PURPA), which has been key to the growth of renewable power facilities. Bills intended to ensure a continuing role for renewable energy sources have been introduced in the 106th Congress that include some combination of a renewable energy portfolio standard (RPS), a public benefits fund (PBF), and/or an information disclosure requirement that supports “green” pricing and marketing of renewable power. Some states and electric utility companies have already instituted such measures. Debate is focused on whether there should be a federal role in restructuring generally and in creating incentives for renewables specifically. This report, updated as needed, provides a brief overview of the debate over renewable energy provisions in federal legislation to restructure the electric power industry. See also CRS Issue Brief IB10041, *Renewable Energy*.

Background

In response to rising powerplant construction costs and environmental concerns of the 1980s, many states and electric utility companies created incentives and other programs to promote renewable energy as a “clean” or environmentally friendly (“green”) alternative for producing electric power. Combined with provisions of the Public Utility Regulatory Policies Act (PURPA, P.L. 95-617) for qualifying “small power facilities,” those incentives encouraged a new industry of non-utility generators to emerge, providing a small but growing share of electric power production. However, after California issued its first proposal for electric industry restructuring in 1994, concerns arose among renewable energy advocates that lower power prices could dampen demand for renewables.

The system of mandatory utility purchase requirements and avoided cost payments that evolved under PURPA Section 210 is unlikely to be appropriate in the new industry structures emerging under industry restructuring. (For details on PURPA, see CRS

Report 98-419 ENR, *Electricity Restructuring Background*). As a result, debate has focused on three policy support mechanisms for renewables: (1) the renewable energy portfolio standard (RPS), (2) use of a distribution charge to create a public benefits fund (PBF) that supports renewable energy and other programs, and (3) voluntary renewable energy purchases by electricity customers through “green pricing” and green power marketing programs.

(1) Renewable Portfolio Standard (RPS). For retail suppliers that sell power to end-users, an RPS sets a minimum purchase requirement (as a percent of energy sales) for electricity produced from renewable energy. Several states have adopted an RPS as part of their restructuring processes, including Arizona,¹ Connecticut, Maine, Massachusetts, New Jersey, Nevada, and Texas. At the federal level, to add flexibility in meeting the requirement, individual obligations could be traded through a system of renewable energy credits. Some say such a tradeable credits system would be similar to the one for marketable sulfur dioxide permits adopted by EPA under the Clean Air Act. RPS proponents include most of the renewable energy trade associations and a limited number of environmental groups. They argue that the policy offers a market-based and administratively simple mechanism. Opponents contend that RPS lacks a cost control; would largely benefit existing, low-cost renewables; and is poorly suited for promoting less mature, higher-cost technologies.

(2) Public Benefits Fund (PBF). The PBF is based on an electric service distribution surcharge; it is a way to collect funds from customers to support a variety of policies with public benefits, including renewable energy programs. Once collected, a method of distributing the fund must be devised. California was the first state to create a PBF. A 1996 California law² places a charge on all electricity bills from 1998 through 2001 that would provide \$540 million for “new and emerging” renewable energy technologies. In early 1998, the California Energy Commission adopted final rules for expending the \$540 million.

Similar funds have been adopted in Connecticut, Illinois, Massachusetts, Montana, New Jersey, New York, Pennsylvania, and Rhode Island. Proponents of PBF include several environmental organizations as well as some electric utilities, industrial customers, and power marketers. They argue that the PBF includes an explicit cost ceiling, is pragmatic, and, if funds were dispersed through an auction system, could promote competition among renewable energy technology groups. Opponents contend that PBF could be seen as a tax and may be administratively complex.

(3) Green Power and Information Disclosure. Green pricing involves customers’ willingness to pay a premium for the environmental benefits of renewable energy. More than 40 utilities have implemented green pricing programs. Also, green power marketing — the selling of green power in the competitive marketplace — is underway in the newly competitive markets of California, Massachusetts, Rhode Island, and Pennsylvania. The Department of Energy’s (DOE’s) National Renewable Energy Laboratory (NREL) says that the spread of competition in the electric industry will lead to growth in the market for green power services. It estimates that, by the end of 1999,

¹ See details on Arizona at [<http://www.cc.state.az.us/utility/electric/rpsreslt.htm>].

² A.B. 1890, Article 7, see [http://www.energy.ca.gov/renewables/renewables_fact_sheet.html].

nearly one-fourth of all U.S. electricity consumers will have the option to purchase “green power.”

Figure 1: Green Power Content Label

POWER CONTENT LABEL		
ENERGY RESOURCES	PRODUCT A* (projected)	1998 CA POWER MIX** (for comparison)
Eligible Renewable	55%	11%
-Biomass & waste	-	2%
-Geothermal	-	5%
-Small hydroelectric	-	2%
-Solar	-	<1%
-Wind	-	1%
Coal	10%	20%
Large Hydroelectric	11%	22%
Natural Gas	16%	31%
Nuclear	8%	16%
Other	<1%	<1%
TOTAL	100%	100%

* 50% of **Product A** is specifically purchased from individual suppliers.
 **Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the previous year.

For specific information about this electricity product, contact **Company Name**. For general information about the Power Content Label, contact the California Energy Commission at 1-800-555-7794 or www.energy.ca.gov/consumer

A requirement for fuel source disclosure on customer bills is a key aspect of green pricing and green marketing. **Figure 1** provides an example from California of such a disclosure device. Proponents argue that this option enhances information and customer choice with a minimum of regulation. Further, it allows suppliers to encourage renewables development at no competitive cost to themselves or to customers uninterested in renewables. Among supporters of renewables, opponents to green pricing say it transfers the costs for environmental benefits from the general public to a select group, thereby enabling utilities to avoid responsibility for these costs and perpetuate a key market failure.

Some argue that PBF and RPS should be viewed as complementary, rather than competitive. Specifically, some say that the PBF is best-suited to funding the pre-competitive early stages of renewable energy technology products — research, development, and prototype testing — while the RPS is best-suited to the initial and mature phases of market competition for these products.

Legislative Proposals

The Administration’s bill, “Comprehensive Electricity Competition Act,” introduced by request as S. 1047 and H.R. 1828, includes elements of all three policies described above. It defines renewable energy to exclude hydropower and to include solar, wind, geothermal, and biomass energy. The bill proposes four policies to encourage renewables: (1) an RPS that would guarantee a minimum level of generation, rising to 7.5% of total generation by 2010, (2) a PBF-type public benefit fund that would provide matching funds to states for renewable energy and other purposes, (3) a net metering

provision that would assure interconnection availability and allow production from very small renewable energy projects to reduce utility bills, and (4) a consumer information disclosure requirement that would show the renewable energy share of the utility fuel mix.

Also, H.R. 2050 (Largent) sets provisions for renewables, which are defined to include solar, wind, geothermal, and biomass power, but it excludes all forms of hydropower. Section 501 would create an RPS to kick in if, on January 1, 2005, DOE's Energy Information Administration (EIA) finds renewable energy comprises less than 3% of all energy used to generate electricity nationwide. If activated in 2005, the RPS would be set at 3% of a retail supplier's generation, although each state could require a higher share of renewables generation. The system would be based on tradeable credits, issued for each kilowatt-hour (kwh) of renewable energy generation, with double credit for generation on Native American lands. Credit value would be capped at 1.5 cents/kwh in 2005 and would be adjusted for inflation annually. On an annual basis, each supplier would have to provide enough credits to the Secretary of Energy to account for the 3% requirement. The Secretary would be empowered to audit, verify, and otherwise validate credits. The RPS would sunset after 11 years, at the end of 2015.

Renewable energy broadly — excluding all forms of large hydropower — provides about 2% of total national electric generation.³ Thus, requiring renewables to provide 3% or 7.5% of total generation could be difficult to achieve in many areas. However, renewables' share of total generation varies greatly by region. For example, Figure 1 shows that in 1998, 11% of California's generation was produced from renewables that would qualify under RPS proposals, including 9% from solar, wind, geothermal, and biomass; and an additional 2% from small hydropower.⁴

Under "net metering," a customer's electric meter is permitted to run backward when the customer is self-generating electric power to feed into the utility grid. Section 502 of H.R. 2050 would require retail power suppliers to make "net metering" available to retail customers with a peak generating capacity of 20 kw or less. Under this provision, each customer's annual electricity demand limits the amount of on-site generation that can be used to run the meter backward. This "zero limit" was set to prevent customers from incurring payments from suppliers. Further, a generator who participates in net metering is disqualified from receiving renewable energy credits under the RPS provision. States would be allowed to impose further requirements including, for example, a cap limiting the amount of net metering in the state.

Section 104(a)(2)(B)(i) requires suppliers with capacity exceeding 5 megawatts to provide written disclosure to consumers of the share of electricity generated by renewables and by other primary energy sources. It also requires disclosure of carbon dioxide and certain other pollutant emissions. The energy labeling requirement would give consumers the ability to choose green power, if they so desired. Each state would be allowed to prescribe additional disclosure requirements, provided they were consistent with the requirements of this section.

³ DOE reports that renewable generation that qualifies for the RPS under its proposed bill currently makes up 2.3% of retail electric sales. U.S. DOE. Office of Policy. Supporting Analysis for the Comprehensive Electricity Competition Act (Briefing Notes). June 23, 1999.

⁴ California obtains another 22% of its electricity from large hydropower.

Points of Debate

Some in Congress believe that state policy actions would create an uneven patchwork and other inequities that justify a federal policy role. However, in 1996, the National Association of Regulatory Utility Commissioners (NARUC) issued a resolution urging that congressional action on restructuring retain states' authority to impose charges to fund programs that promote renewable energy and other measures, and to implement such programs. Some representatives of states with a restructuring policy in place prefer that Congress not set any federal policy requirements.

Countering arguments for the three major renewable energy support mechanisms described above, a 1997 report by the Heritage Foundation, *Energizing America: A Blueprint for Deregulating the Electricity Market*, suggests that industry restructuring will help the environment directly because it “forces power companies to meet higher standards of efficiency and cleanliness to ensure that local communities are provided the power they want without increased pollution.” Further, some are opposed to a federal RPS and renewable energy set-asides, arguing that they are unnecessary subsidies and that solutions should be pursued that can survive in the market without special protections that cost all Americans. For example, a 1997 report by the Cato Institute, *Renewable Energy: Not Cheap, Not Green*, argues that federal, state, and other sources of spending and incentives for renewables constitute subsidies that “needlessly increase electric rates in return for phantom environmental benefits.”

On the other hand, environmental groups and some energy producers express concern that federal efforts to restructure the electric industry could increase barriers to renewables and thereby reduce their use and increase pollution. Most renewable generation technologies face the barrier of higher production costs than those for coal and natural gas-fired powerplants.⁵ Further, their proponents point to the recent decline in state and utility incentives for renewable energy in anticipation of state-based retail competition and other restructuring policies. The General Accounting Office (GAO) reports that spending on renewable energy R&D by states and utilities has dropped rapidly.⁶ It also observes that the environmental costs of pollution from supply sources are not fully included in the price of electric power. Also, renewable energy proponents argue, the proposal to eliminate the PURPA-guaranteed market for renewables, together with even lower power prices from federal restructuring, could further squeeze renewables out of the electricity market.

(For a discussion of broader electricity restructuring issues, see CRS Issue Brief IB10006, *Electricity: The Road to Restructuring*.)

⁵ Large hydropower plants have low production costs, but no new plants are planned and there is limited potential to increase production from existing plants.

⁶ U.S. GAO. Federal Research: Changes in Electricity-Related R&D Funding. 1996. [GAO/RCED-96-203]

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