

California Renewable Energy Sources Act of 2009
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By Paul Gipe

Title: California Renewable Energy Sources Act of 2009 (also to be known as the California Act on Granting Priority to Renewable Sources of Energy)

The people of the State of California do enact as follows:

The Public Utilities Code is amended to read

1. Purpose:

It is the policy of the State of California to encourage the rapid and sustainable development of renewable energy by the adoption of renewable energy payments (also known as feed-in tariffs) for the following purposes.

- (a) Protecting California's citizens from air pollution,
- (b) Protecting California's climate from global warming,
- (c) Protecting California's natural resources,
- (d) Opening electricity generation from renewable resources to all citizens regardless of their tax status,
- (e) Providing equitable opportunity for all citizens to help meet the state's renewable energy targets,
- (f) Reducing the volatility of future electricity prices,
- (g) Reducing the long-term costs of electricity,
- (h) Placing California at the forefront of North America's renewable energy revolution,
- (i) Stimulating the development of new technologies and industry in California,
- (j) Operating in parallel with the California Solar Initiative and Renewable Portfolio Standard, and
- (k) Simplifying the awarding of contracts for the generation of electricity with renewable resources and by doing so increasing the transparency and equity of the electricity generation system.

2. Definitions

- (a) "Renewable energy sources" shall mean hydropower, wind energy, solar radiation, geothermal energy, energy from biomass including biogas, landfill gas, and sewage treatment plant gas as well as the biodegradable fraction of municipal and industrial waste that qualifies as a small power production facility under the Federal Energy Regulatory Commission rules, 18 Code of Federal Regulations, Part 292, Subpart B, as in effect on January 1, 1997.

- (b) "Plant" shall mean any independent technical facility generating electricity from renewable energy sources. Several plants generating electricity from equivalent renewable energy sources, if constructed within the application of this act and directly attached to building structures and commonly used installations technically required for operation shall be considered as one plant. This includes inverters, access ways, grid connections as well as measuring, administrative and control facilities in particular that are not technically required for such operation.
- (c) "Plant operator" shall mean anyone who, notwithstanding the issue of ownership, uses the plant for the purpose of generating electricity from renewable energy sources.
- (d) "Commissioning" shall mean the first time a plant is put into operation, following establishment of operational readiness or its modernization, if modernization costs amount to at least 50 per cent of the investment costs required to build a completely new plant including all building structures and installations technically required for its operation.
- (e) "Capacity" of a plant shall mean the effective electrical capacity that the plant may technically produce without time restrictions during regular operation irrespective of short-term deviations. When the relevant capacity is determined to calculate the tariffs paid under the act, the standby capacity shall not be considered.
- (f) "Grid system" shall mean all the interconnected facilities used for the transmission and distribution of electricity for general supply.
- (g) "Grid system operators" shall mean the operators of all types of voltage systems for general electricity supply.
- (h) "Average specific yield" shall mean the average production in kilowatt hours for the first 5 years of production of a wind powered plant, less the maximum and minimum years of production, divided by the rotor-swept area in square meters.
- (i) "Small wind turbine" means any wind turbine with a rotor swept area of no more than 1,000 square feet.
- (j) "Tariffs" mean the rate paid in dollars per kilowatt-hour of generation delivered to the grid.
- (k) "Commission" shall mean the California Public Utility Commission.
- (l) "Adequate renewable energy development" means a rate of development needed to accomplish the renewable energy objectives in California's Renewable Portfolio Standard, including any interim objectives.

3. Obligation to Connect

- (a) An electrical corporation shall connect a renewable energy generator to its distribution system promptly upon the terms and condition set by the commission but in no cases more than 90 days after receipt of the request for connection.
- (b) The commission shall establish standards for the interconnection of renewable energy generators with the grid. The standards shall be consistent

with generally accepted industry practices and guidelines to ensure the reliability of electric service to all customers, and the safety of customers, grid operator's employees, and the public.

- (c) Every kilowatt-hour of the electricity generated by the renewable electric generation facility, shall count toward the electrical corporation's renewable portfolio standard annual procurement targets.
- (d) All electrical corporations shall prepare, publish and apply transparent, objective and non-discriminatory rules for connecting Eligible Plants to the grid, including grid reinforcement and costs, the sharing of grid system costs between all producers benefiting from them, and allocating grid capacity.
- (e) An eligible electric generator shall be provided with a comprehensive and detailed estimate of the costs associated with connection of the renewable energy plant to the grid.
- (f) The costs associated with the interconnection of renewable energy generators, including both direct interconnection costs, distribution system enhancements, and electrical corporation compliance costs, shall be recoverable as part of the non-bypassable surcharge as provided herein.

4. Standard Contract

- (a) The commission shall approve a standard contract of 20 years duration to be used in all power purchase agreements under this act.
- (b) The contract must include the price paid for each kilowatt-hour generated, the duration of the contract, and any adjustments of the price for inflation.
- (c) For renewable electric plants less than 100 kilowatts, the commission shall approve simplified standard contracts written in simple, clear language.
- (d) Contracts under the act shall be transferable.

5. Renewable Energy Payments (also known as renewable energy feed-in tariffs)

- (a) Electrical corporations shall enter into power purchase agreements to acquire all of the electricity generated by renewable energy generators located in the state for a term of not less than 20 years from the date of commissioning that are connected to the electrical grid.
- (b) Electrical corporations shall pay the tariffs in Table 5.1.
- (c) The renewable energy payments, or feed-in tariffs, in Table 5.1 shall apply only to those generators not applying for or receiving federal subsidies, federal tax credits, or other federal incentive payments, except as noted below.
- (d) The renewable energy payments, or feed-in tariffs, in Table 5.1 shall be indexed to 100% of the rate of inflation until such time as the commission revises Table 5.1 after periodic review as noted below.
- (e) From the date of commissioning of a renewable energy generating plant, inflation adjusted tariffs in Table 5.1 will be indexed to 60% of inflation, that is, tariffs post commissioning will increase annually with 60% of the rate of

inflation.

- (f) The commission shall determine reduced renewable energy payments, or feed-in tariffs, to reflect the value of federal and state tax credits, subsidies, or other financial incentives received for a renewable electricity generating plant. These reduced renewable energy payments shall be derived to produce just and reasonable tariffs for those who choose to use federal and state tax credits, subsidies, or other financial incentives such that the tariffs pay for the cost of generation plus a reasonable profit.
- (g) The tariffs paid for electricity generated by wind turbines shall be based on the price needed to pay for the cost of generation plus a reasonable profit, differentiated by average specific yield in kWh/m²/year of rotor swept area as described below.
 - (1) Tariffs for all wind generation from year one through year five are described as the Base Wind tariff in Table 5.1.
 - (2) Subsequent tariffs for years six through year 20 will be determined based on the average specific yield in kilowatt-hours per square meter of rotor swept area per year of a linear interpolation from the Base Wind tariff to the High Wind tariff, that is, from 700 kWh/m²/yr to 1,100 kWh/m²/yr.
 - (3) The average specific yield shall be the average of the sum of the first five years of production in kilowatt-hours, less the year of maximum and the year of minimum production, divided by the rotor swept area in square meters.
 - (4) Wind turbines with average specific yields below 700 kWh/m²/yr will be paid the Base Wind tariff for years six through 20.
 - (5) Wind turbines with average specific yields above 1,100 kWh/m²/yr will be paid the High Wind tariff for years six through 20.

Table 5.1 Renewable Energy Payments or Feed-in Tariffs

California Renewable Energy Sources Act Tariffs		
Tariff Year	2009	
	Years	USD/kWh
Wind^a		
On Land	1-5	0.125
Base Wind (<700 kWh/m ² /yr)	6-20	0.125
High Wind (>1,100 kWh/m ² /yr)	6-20	0.080
Offshore^b		
Base Wind (<700 kWh/m ² /yr)	1-5	0.132
High Wind (>1,100 kWh/m ² /yr)	6-20	0.132
High Wind (>1,100 kWh/m ² /yr)	6-20	0.090
Small Wind <1,000 ft ² (<11 m diameter)	20	0.25
Solar Photovoltaic^c		
<30 kW	20	0.570
>30 kW<100 kW	20	0.500
>100 kW<1,000 kW	20	0.450
>1,000 kW	20	0.400
Facade cladding	20	0.650
Hydro		
<500 kW	30	0.109
>500 kW<10 MW	30	0.094
>10 MW<20 MW	15	0.087
>20 MW<30 MW	15	0.065
Upgraded plants		
<500 kW	20	0.137
>500 kW<5 MW	20	0.094
Biomass/Biogas		
<150 kW	20	0.160
>150 kW<500 kW	20	0.138
>500 kW<5 MW	20	0.124
>5 MW<20 MW	20	0.117
Fuel Bonus^e		
<5 MW Wood Wastes	20	0.083
<5 MW No Wood	20	0.054
Innovation Bonus	20	0.030
District Heating Bonus	20	0.030
Landfill Gas		
<500 kW	20	0.107
>500 kW<5 MW	20	0.090
Sewage Gas		
<500 kW	20	0.107
>500 kW<5 MW	20	0.090
Geothermal^d		
		0.120
Concentrating Solar^d		
	20	0.170
a. Assumes \$2,000/kW (\$716/m ²).		
b. From German 2008 offshore tariffs.		
c. Assumes 1,650 kWh/kW _{DC} /yr and costs from CEC & PGE 2007 data, <30 kW \$8,500/kW _{DC} .		
d. Placeholder. Requires estimate of costs and yields.		
e. Premium paid according to fuel used and for use of "innovative" technology.		

6. Statewide Equalization of Costs Across All customers of electrical corporations.

- (a) The Commission shall, after notice and hearing, annually approve a renewable energy factor that shall be a nonbypassable surcharge payable by every customer of an electrical corporation. The surcharge shall be payable by all customer classes. The Commission shall set the surcharge at a level sufficient to pay the costs of electricity purchased under the act and any interconnection costs authorized under the act.
- (b) The commission may adjust or remove the surcharge for energy intensive industries that buy electricity in the state of California if such industries can prove hardship. In evaluating hardship, the commission must consider the financial impacts of the surcharge on the competitive positions of energy intensive industries and weigh similar provisions in other jurisdictions in North America and worldwide. The commission must maintain the competitive position of such energy intensive industries.
- (c) The commission may adjust or remove the surcharge for low-income CARE customers of electrical corporations.

7. Compatibility with Existing Renewable Energy Policy

- (a) Nothing in this act shall reduce, impede, or conflict with California's Renewable Portfolio Standard or the California Solar Initiative.
- (b) It is the intent of the legislature that the California Renewable Energy Sources Act operates in parallel to California's Renewable Portfolio Standard and the California Solar Initiative.

8. Requirement to Provide Information

Renewable energy generators, qualifying owners that own all or part of a renewable energy generator, and electrical corporations shall, upon request, provide the commission any information that may be relevant to the commission performing its duties under this act, including but not limited to assessment of project development costs, equipment costs, electricity production costs, interconnection costs, automatic rate adjustments, and compliance costs, capacity installed, and electricity generated.

7. Periodic Review and Reporting

In each of the first 2 years and every 4 years thereafter, the commission shall review implementation of the act for compliance with the intent of the act. The commission shall file a report with the governor and the legislature that shall include all of the following:

- (a) The number of new renewable energy generators in this state and the environmental effects of the addition of those generators

- (b) The robustness of the program in delivering the renewable energy generation required under California's Renewable Portfolio Standard and other renewable energy objectives.
- (c) Recommendations for changes to the act, if any, that may be necessary.
- (d) Actions taken by the commission to implement this act and to use the tariffs herein to achieve California's renewable energy objectives and Renewable Portfolio Standards.
- (e) Proposed revisions of the renewable energy payments, or feed-in tariffs, to reflect inflation, changes in technology, and the increased or decreased costs of renewable energy generation such that the payments or tariffs are sufficient to pay for the costs of generation plus a reasonable profit.

9. Entry into Force

This act shall enter into force on the day following the signature of the Governor of the State of California.

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