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## Arizona Incentives for Renewable Energy

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## Environmental Portfolio Standard

Last DSIRE Review: 09/14/2005

**Incentive Type:** Renewables Portfolio Standard

**Eligible Renewable/Other Technologies:** Solar Water Heat, Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Solar Air Conditioning

**Applicable Sectors:** Utility

**Standard:** 0.2% in 2001, increasing to 1.1% in 2007-2012

**Technology Minimum:** 50% solar-electric in 2001-2003; 60% solar-electric in 2004-2012

**Website:** <http://www.cc.state.az.us/utility/electric/environmental.htm>

**Authority 1:** [ACC Rules R14-2-1618](#)

**Effective Date:** 3/30/01

**Expiration Date:** 2012

## Summary:

**Note: The Arizona Environmental Portfolio Standard is currently under review and proposed modifications are being developed. However, the formal rule amendment process has not yet commenced, according to the Arizona Corporation Commission. Visit the Web site above for the latest developments.**

Under Arizona's Environmental Portfolio Standard (EPS), regulated utilities in the state are required to generate a certain percentage of their electricity with renewable energy according to the following schedule:

- 0.2% in 2001
- 0.4% in 2002
- 0.6% in 2003
- 0.8% in 2004
- 1.0% in 2005
- 1.05% in 2006
- 1.1% in 2007-2012

Eligible technologies include solar electric, solar water heating and solar air conditioning, landfill gas, wind and biomass. Solar electric power must make up 50% of total renewables required in 2001, increasing to 60% in 2004-2012. Arizona Public Service, a utility, has requested and received a rule waiver allowing it to meet a portion of its EPS requirements using geothermal resources.

Funding for the EPS comes from existing system benefits charges and a new surcharge to be collected by the state's regulated utilities. The new surcharge is capped at \$0.35 per month for residential customers, \$13 per month for non-residential customers and \$39 per month for customers with loads over 3 MW. At least \$15 million-\$20 million will be collected annually to support the EPS.

Interestingly, the standard includes a caveat that if the cost of solar technologies does not decrease to a Commission-determined cost/benefit point by the end of 2004, the portfolio requirement will not continue to increase. On February 10, 2004, the ACC voted to allow the standard to continue increasing to 1.1% of electricity from renewables by 2007. Workshops will be held to determine whether the current surcharge on residential electric bills of up to \$0.35 per month should be increased, and whether a requirement that 60% of the renewable energy come from solar resources should be modified or eliminated.

If sustained, the standard will produce almost 100 MW of solar power by 2007.

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## California Incentives for Renewable Energy

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## Renewables Portfolio Standard

Last DSIRE Review: 05/05/2004

**Incentive Type:** Renewables Portfolio Standard**Eligible Renewable/Other Technologies:** Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Municipal Solid Waste, Digester Gas, Tidal Energy, Wave Energy, Ocean Thermal, Fuel Cells (Renewable Fuels)**Applicable Sectors:** Investor-Owned Utility, Later: ESPs and CCAs. Munis implement themselves.**Standard:** Increase 1% per year beginning in 2003 to reach at least 20% by end of 2017**Website:** <http://www.energy.ca.gov/portfolio/index.html>**Authority 1:** [SB 1078 of 2002](#)**Date Enacted:** 9/12/02**Effective Date:** 1/1/03**Authority 2:** [SB 1038 of 2002](#)**Summary:**

California's Renewable Portfolio Standard (RPS) was enacted on September 12, 2002 (SB 1078). This legislation, which requires retail sellers of electricity to purchase 20% of their electricity from renewable resources by 2017, is the most aggressive RPS in the country. Eligible renewable resources include biomass, solar thermal, photovoltaics, wind, geothermal, fuel cells using renewable fuels, small hydropower of 30 megawatts or less, digester gas, landfill gas, ocean wave, ocean thermal and tidal current. Municipal solid waste is generally eligible only if it is converted to a clean-burning fuel using a non-combustion thermal process. There are restrictions for some of these technologies.

Under the RPS, retail sellers of electricity are required to increase their procurement of eligible renewable-energy resources by at least 1% per year, so that 20% of their retail sales are procured from eligible renewable energy resources by 2017. The RPS legislation requires that the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC) work collaboratively to implement the RPS, and assigns specific roles to each agency. The two agencies are currently developing rules that will apply to investor owned utilities (IOUs), and will later develop rules for electric service providers and community choice aggregators. Municipal utilities are ordered by the legislation to implement RPS programs under their own direction.

The CEC, in collaboration with the CPUC, has initiated a proceeding to implement the state's RPS. Pursuant to SB 1078 (2002), the CEC must:

- Certify eligible renewable resources that meet criteria contained in the bill;
- Design and implement a tracking and verification system to ensure that renewable energy output is counted only once for the purpose of the RPS and for verifying retail product claims in California or other states; and
- Allocate and award supplemental energy payments as specified in SB 1038 to eligible renewable energy resources to cover above-market costs of renewable energy.

The CPUC is addressing its responsibilities in implementing the RPS through a separate proceeding (Docket R. 01-10-24). The CPUC, in collaboration with the CEC, is charged with:

- Determining market price referents for electricity from non-renewable sources. The IOUs will hold solicitations to purchase electricity from renewable generators, and bids above the referents may be eligible for supplemental energy payments from the Energy Commission.
- Establishing the process for the IOUs to follow in selecting the "least cost" bidders of renewable energy that "best fit" the IOUs resource needs. IOUs will use the process to select winning bidders from their solicitations to procure renewable electricity.
- Implementing flexible rules for compliance with annual procurement targets. If an IOU fails to procure sufficient renewable energy, despite the flexibility, the CPUC will impose penalties.
- Establishing the standard terms and conditions to be used by all IOUs in contracting for eligible renewable energy resources. Parties will have an opportunity to negotiate terms and conditions over the third quarter of 2003.

The California Legislature has charged the CEC with developing a tracking system for implementing California's RPS. In response, the Western Renewable Energy Generation Information System ([WREGIS](#)), a renewable-energy tracking system, is being developed by the CEC and the Western Governors' Association (WGA), with input from stakeholders.

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## Colorado Incentives for Renewable Energy

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## Renewable Energy Requirement

Last DSIRE Review: 11/17/2004

**Incentive Type:** Renewables Portfolio Standard**Eligible Renewable/Other Technologies:** Photovoltaics, Landfill Gas, Wind, Biomass, Geothermal Electric, Anaerobic Digestion, Small Hydroelectric, Fuel Cells (Renewable Fuels)**Applicable Sectors:** Utility, Municipal Utility, Investor-Owned Utility, Rural Electric Cooperative**Standard:** 3% by 2007; 6% by 2011; 10% by 2015**Technology Minimum:** 4% from solar-electric generation technologies; 1/2 of this 4% located on-site at customers' facilities**Credit Trading:** Yes**Website:** <http://www.renewableenergyyes.com/>**Authority 1:** [Amendment 37, Article 2 of title 40, CO Revised Statutes](#)**Date Enacted:** 11/2/2004**Effective Date:** 12/1/2004**Expiration Date:** None

## Summary:

On November 2, 2004, Colorado voters made history by approving Amendment 37, a proposed renewables portfolio standard (RPS). This was the first time in the nation's history that an RPS was put directly before voters rather than processed through a state's legislature.

The initiative requires Colorado utilities with 40,000 or more customers to generate or purchase a percentage of their electricity from renewable sources according to the following schedule:

- 3% from 2007 through 2010;
- 6% from 2011 through 2014; and
- 10% by 2015 and thereafter.

Of the electricity generated each year from renewable sources, at least 4% must come from solar technologies. At least one-half of this percentage must come from solar systems located on-site at customers' facilities. Other eligible technologies include wind, geothermal heat, biomass facilities that burn nontoxic plants, landfill gas, animal waste, small hydroelectric, and hydrogen fuel cells. Energy generated in Colorado is favored; each kWh of renewable electricity generated in-state will be counted as 1.25 kWh for the purposes of meeting this standard.

While the amendment was opposed by Colorado's largest electricity supplier, Xcel, on the basis that it would mean hikes in consumer electric rates, the amendment specifies the average residential retail rate may not be impacted more than \$0.50 per month. Although the text does not specify a cap on the charges to commercial bills, Colorado law requires the Public Utilities Commission (PUC) to prevent discrimination between rate classes. The rate impacts of the RPS will vary by utility; however, it has been projected that the bill impact is highly unlikely to approach the \$0.50/month ceiling.

Tradable renewable energy credits may be used to satisfy the standard. Utilities that do not generate the required amount of electricity from renewable energy sources are allowed to purchase "credits" from those utilities that exceed the requirement.

Also outlined in the initiative is a required rebate program. Under the amendment, utility customers may earn a rebate for installing solar electric generation equipment on their property. Customers may be net-metered, with excess annual use sold to the utility, and utilities shall not apply unreasonably burdensome interconnection requirements. In addition, for-profit utilities may earn extra profit and bonuses if their investment in renewable energy technologies reduces the retail cost of electricity to their customers.

The amendment includes provisions for exemption and inclusion procedure. Affected utilities may hold elections to exempt themselves from the renewable energy requirement. Similarly, utilities not subject to the requirement may hold elections to be included. At least 25 percent of the utility's customers must vote on the issue of exemption or inclusion, with a majority vote required for passage. In addition, a municipal utility or rural electric cooperative may develop a similar renewable energy requirement and be exempted from this initiative. To qualify, the utility must: 1) use at least one of the eligible renewable energy sources, 2) follow the same schedule for electricity generation from renewable sources, and 3) offer an optional pricing program that allows customers to support emerging renewable technologies. Utilities that choose this option are not required to generate electricity from solar sources.

Amendment 37 takes effect December 1, 2004, but the PUC has until April 1 to start crafting rules to enforce it. The rule-making process, which must be finished by March 31, 2006, gives utilities time to meet the requirements for 2007. The PUC also must decide how to penalize utilities that miss the deadlines.

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## Montana Incentives for Renewable Energy

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### Renewables Portfolio Standard

Last DSIRE Review: 05/12/2005

**Incentive Type:** Renewables Portfolio Standard

**Eligible Renewable/Other Technologies:** Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Anaerobic Digestion, Fuel Cells (Renewable Fuels)

**Applicable Sectors:** Investor-Owned Utility

**Standard:** 5% in 2008; 10% in 2010; 15% in 2015

**Technology Minimum:** None

**Credit Trading:** Yes

**Authority 1:** [SB 415 \(2005\): Montana Renewable Power Production and Rural Economic Development Act](#)

**Date Enacted:** 4/28/05

**Effective Date:** 4/28/05

**Expiration Date:** None

#### Summary:

Montana's renewables portfolio standard (RPS), enacted in April 2005 through the Montana Renewable Power Production and Rural Economic Development Act, requires public utilities to procure a percentage of their retail electricity sales from renewable sources according to the following schedule:

- 5% in 2008 through 2009;
- 10% in 2010 through 2014; and
- 15% in 2015 and thereafter.

Eligible renewable resources include wind, solar, geothermal, existing hydroelectric projects (nameplate rating of 10 megawatts or less), landfill or farm-based methane gas, wastewater-treatment gas, low-emission, nontoxic biomass, and fuel cells where hydrogen is produced with renewable fuels. Facilities must be either (1) located within Montana, or (2) must be a new facility (beginning operation after 1/1/2005) in another state delivering electricity into Montana.

Utilities can meet the standard by entering into long-term purchase contracts for electricity bundled with renewable energy credits (RECs), by purchasing the renewable energy credits separately, or a combination of both. The law does contain cost caps that limit the additional cost utilities are obligated to pay for renewable energy and allows cost recovery from ratepayers for contracts pre-approved by the Public Service Commission (PSC). RECs sold through voluntary utility green power programs may not be used for compliance. The PSC is to develop rules to implement the RPS by June 1, 2006.

The RPS includes specific procurement requirements to stimulate rural economic development. For example, the utilities must buy some of their renewable energy (electricity + credits) from community renewable energy projects with nameplate capacities of 5 megawatts or less. These are projects in which local owners have a controlling interest and which are interconnected on the utility's side of the meter. In 2015, such projects must provide a total of at least 75 megawatts of renewable energy capacity. In addition, public utilities must enter into contracts that include a preference for Montana workers.

A utility that is unable to comply with the RPS during an annual period (there is a 3-month grace period) must pay an administrative penalty of \$10/MWh of renewable energy credits that the utility failed to procure. Penalty payments may not be recovered in electricity rates. Funds derived from penalties go into the universal low-income energy assistance fund. Alternatively, a utility may petition the PSC for a short-term waiver from full compliance.

While cooperative and municipal utilities are exempt from these requirements, those with 5,000 or more customers must implement a renewable energy standard that recognizes the "intent of the legislature to encourage new renewable energy production and rural economic development, while taking into consideration the effect of the standard on rates, reliability, and financial resources."

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## Nevada Incentives for Renewable Energy

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## Energy Portfolio Standard

Last DSIRE Review: 07/28/2005

**Incentive Type:** Renewables Portfolio Standard

**Eligible Renewable/Other Technologies:** Solar Water Heat, Solar Space Heat, Solar Thermal Electric, Solar Thermal Process Heat, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Municipal Solid Waste, Certain Energy Efficiency Measures, Solar Pool Heating, Anaerobic Digestion, Biodiesel

**Applicable Sectors:** Investor-Owned Utility

**Standard:** 6% in 2005, rising to 20% by 2015

**Technology Minimum:** 5% of the energy portfolio must be solar

**Credit Trading:** Yes

**Website:** [http://www.puc.state.nv.us/Renewable/REPSNevada\\_files/frame.htm](http://www.puc.state.nv.us/Renewable/REPSNevada_files/frame.htm)
**Authority 1:** [NRS 704.7801 et seq.](#)
**Date Enacted:** 6/8/01

**Effective Date:** 1/1/03

**Authority 2:** [NAC 704.8831 et seq.](#)
**Authority 3:** [Assembly Bill 03 \(2005\)](#)
**Date Enacted:** June 2005

## Summary:

As part of its 1997 restructuring legislation, the Nevada legislature established a renewable energy portfolio standard. Under the standard, the state's two investor-owned utilities, Nevada Power and Sierra Pacific Power, must derive a minimum percentage of the total electricity they sell from renewable energy resources. In 2001, the legislature revised the minimum amounts to increase by 2% every two years, up to a 15% requirement by 2013. In June of 2005, through [Assembly Bill 03](#), the portfolio requirement was further revised to increase by 3% every two years, up to 20% of sales by 2015, with a significant change allowing utilities to meet the standard through renewable energy generation (or credits) and energy savings from efficiency measures. Not less than 5% of the portfolio energy standard must be generated, acquired, or saved from solar energy systems.

Under AB 03, efficiency measures eligible for portfolio energy credits include those installed after January 1, 2005, must be implemented at a retail customer's location, and must be partially or fully subsidized by the electric utility to qualify. The measure must also reduce the customer's energy demand (as opposed to shifting demand to off-peak hours). Solar energy systems that qualify for portfolio credits as renewable energy systems do not also qualify as energy efficiency measures, even if they reduce the consumption of other fuels. The contribution from energy efficiency measures to meet the portfolio standard is capped at one-quarter of the total standard in any particular year.

% Renewables -- Date	
6% -----	2005 and 2006
9% -----	2007 and 2008
12% -----	2009 and 2010
15% -----	2011 and 2012
18% -----	2013 and 2014
20% -----	2015 and thereafter

Beyond solar, qualifying renewable energy resources include biomass, geothermal energy, wind, and certain waterpower.

The Public Utilities Commission of Nevada (PUCN) has established a program to allow energy providers to buy and sell renewable energy credits (RECs), in order to meet Renewable Energy Portfolio requirements. One REC represents a kilowatt-hour of electricity generated from a renewable energy system, with the exception of photovoltaics, for which 2-4 RECs are credited per one actual kWh of energy produced. In addition, a multiplier of 15 can be added to the 2-4 multiplier for PV if the system is deemed by the PUCN to be distributed generation. RECs are valid for a period of five years. For more information on Nevada's REC program, and how this serves as a financial incentive for renewable energy system owners, review the [REC summary](#) on DSIRE.

To help facilitate the renewable projects called for in the renewable energy portfolio standard, the PUCN established the Temporary Renewable Energy Development (TRED) Program. The TRED program is meant to insure prompt payment to renewable energy providers in order to encourage completion of renewable energy projects. The TRED Program establishes: (1) a TRED Charge allowing investor-owned utilities to collect revenue from electricity customers to pay for renewable energy separate from other wholesale power purchased by the electric utilities; and (2) an independent TRED Trust to receive the proceeds from the TRED Charge and remit payment to renewable energy projects that deliver renewable energy to purchasing electric utilities. For more information, visit the [TRED dockets](#).

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## New Mexico Incentives for Renewable Energy

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## Renewables Portfolio Standard

Last DSIRE Review: 07/22/2005

**Incentive Type:** Renewables Portfolio Standard

**Eligible Renewable/Other Technologies:** Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Anaerobic Digestion, Fuel Cells (Renewable Fuels)

**Applicable Sectors:** Investor-Owned Utility

**Standard:** 5% in 2006, rising to 10% in 2011

**Technology Minimum:** No. Some sources have a higher "value" for accumulating credits

**Credit Trading:** Yes

**Website:** <http://www.nmprc.state.nm.us/utility/utilitydivhome.htm>

**Authority 1:** [SB 43 \(2004\) - The Renewable Energy Act](#)

**Date Enacted:** 3/2004

**Authority 2:** [NMAC 17.9.572](#)

**Effective Date:** 1/14/2005

## Summary:

On December 17, 2002, the New Mexico Public Regulation Commission (PRC) unanimously approved a renewable energy rule requiring investor owned utilities to produce 5% of all energy they generate for New Mexico customers using solar, wind, hydropower, biomass, or geothermal sources by 2006. Generation from renewable sources must increase by at least 1% per year until the portfolio standard (RPS) of 10% is attained in the year 2011. In March of 2004, Senate Bill 43 (the Renewable Energy Act) placed the PRC rule into statute and established additional requirements.

Utilities document compliance with the RPS through the use of renewable energy certificates, which represent kilowatt hours of renewable energy produced. The various sources of renewable energy have been assigned different values for the purposes of issuing certificates and calculating the percentage of electricity generated by renewables:

- One kilowatt-hour of electricity generated by wind or hydroelectric technologies is worth one kilowatt-hour toward compliance with the RPS;
- One kilowatt-hour of biomass, geothermal, landfill gas, or fuel cell power is worth two kilowatt-hours toward the RPS; and
- One kilowatt-hour of solar power is worth three kilowatt-hours toward the RPS.

The rule also requires utilities to offer a voluntary renewable energy tariff (green pricing option for customers) and to develop an educational program communicating the benefits and availability of this option. Note that electric cooperatives are only required to provide the green pricing option to the extent that their suppliers make such renewable resources available under their all-requirements contracts.

Investor owned utilities that as of December 17, 2002 had all-requirements contracts that expire after January 1, 2006, are exempt from the RPS until the earlier of the date of their next contract forward or the date on which the all-requirements contract is amended or renegotiated.

With the passage of SB 43 in 2004, the PRC established the "reasonable cost threshold." If the cost of renewable energy generation is above this PRC-established level, the public utility will not be required to add renewable energy to its supply portfolio.

SB 43 also reduced the RPS for nongovernmental customers at a single location or facility with consumption exceeding 10,000,000 kWh/yr. The number of kWhs of electricity from renewable sources procured for these customers is to be limited so that the additional cost of the RPS to each customer does not exceed the lower of 1% of that customer's annual electric charges or \$49,000. This procurement limit criterion is then increased by 1.5% or \$10,000 per year until January 1, 2011, when it remains fixed at the lower of 2% of the customer's annual electric charges or \$99,000. The bill clarifies that this language in no way affects a public utility's right to recover all reasonable costs of complying with the RPS. It also provides the PRC the authority to defer recovery of the costs of complying with the PRS, including carrying charges.

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