

COLORADO RENEWABLE ENERGY STANDARD SUMMARY

A. SUMMARY: In 2004, Colorado voters passed an amendment to the Colorado Revised Statutes adopting the Renewable Energy Standard (RES) policy. The policy called for a renewable energy requirement of 3 percent beginning in 2007 and increasing to 10 percent in 2015 and beyond. The measure also required qualifying utilities to offer customers a minimum rebate of \$2.00 per watt for solar electric generation; provided incentives for utilities to invest in renewable energy resources that provide net economic benefits to customers; and limited the retail rate impact of renewable energy resources to one percent of the total electric bill annually for each customer of a qualified retail utility. In March 2007, the Colorado legislature adopted and the governor signed HB 1281, which increased the requirement to 20 percent by 2020 for investor-owned utilities, and increased the number of qualifying utilities by including all rural electric cooperatives. Rural electric cooperatives and municipal utilities that have more than 40,000 customers must meet a lesser requirement of 10 percent by 2020.

B. AUTHORIZING LEGISLATION/REGULATION/INITIATIVE

1. Legislative/Regulatory Intent: "...in order to save consumers and businesses money, attract new businesses and jobs, promote development of rural economies, minimize water use for electricity generation, diversify Colorado's energy resources, reduce the impact of volatile fuel prices, and improve the natural environment of the state, it is in the best interests of the citizens of Colorado to develop and utilize renewable energy resources to the maximum practicable extent."

2. Applicable Legislation/Regulation:

11/04 – [Colorado Ballot Initiative \(Amendment\) 37](#), Renewable Energy Standard, amends Article 2 of title 40, Colorado Revised Statutes

4/05 – [SB 05-143](#), An Act Concerning the Implementation of the Initiated Measure Calling for Renewable Energy Standards (Codifies, and makes minor changes to Amendment 37)

3/07 – [HB 1281](#), An Act Concerning Increased Renewable Energy Standards

3. Date Enacted: November 2, 2004

4. Date Effective: December 1, 2004

C. RULEMAKING

1. Implementing/rulemaking Authority: Public Utilities Commission of Colorado (PUC)

2. Rulemaking Completed to Date:

12/05 – [PUC Docket #05R-112E](#), Order Adopting Rules

D. TARGETS AND TIMETABLES

1. Overview: Beginning in 2007, at least 3 percent of the electricity sales in Colorado of each investor-owned utility must derive from eligible renewable resources. The percentage increases to 20 percent in 2020 and beyond. Of these requirements, at least 4 percent shall derive from solar electric technology and at least half of the 4 percent shall come from customer, on-site solar generation. The annual targets for rural electric cooperatives and qualifying municipal utilities begin at 1 percent in 2008, and increases to 10 percent by 2020. There is no solar set-aside requirement for rural cooperatives and municipal utilities.

2. Schedule:

Year	Requirement for IOUs	Percent of Renewable Energy from Solar Electric Technologies (IOUs only)	Requirement for Rural cooperatives and Municipal utilities
2007	3 %	4 % of total RE generation*	0 %
2008	5 %	4 % of total RE generation*	1 %
2009	5 %	4 % of total RE generation*	1 %
2010	5 %	4 % of total RE generation*	1 %
2011	10 %	4 % of total RE generation*	3 %
2012	10 %	4 % of total RE generation*	3 %
2013	10 %	4 % of total RE generation*	3 %
2014	10 %	4 % of total RE generation*	3 %
2015	15 %	4 % of total RE generation*	6 %
2016	15 %	4 % of total RE generation*	6 %
2017	15 %	4 % of total RE generation*	6 %
2018	15 %	4 % of total RE generation*	6 %
2019	15 %	4 % of total RE generation*	6 %
2020, onward	20 %	4 % of total RE generation*	10 %

*At least half of 4% must come from customer-sited generation

3. Treatment of existing capacity: Both existing and new sources are eligible under the RES.

4. Sunset Clause: None

E. DEFINITION AND CERTIFICATION OF ELIGIBLE RESOURCES AND TECHNOLOGIES

1. Eligible Resources:

- Solar
- Wind
- Geothermal

- New hydroelectric of 10 MW or less capacity, and hydroelectric in existence on January 1, 2005, with a nameplate rating of 30 MW or less
- Biomass, which means nontoxic plant matter consisting of agricultural crops or their byproducts, urban wood waste, mill residue, slash, or brush; animal wastes and products of animal wastes; or methane produced at landfills or as a by-product of the treatment of wastewater residuals
- Co-fired system, which means any system that combines the concept of co-firing (the simultaneous combustion of a supplementary fuel with a base fuel or a supplementary fossil fuel generation with a base renewable generation) with the traditional method of generation or the renewable generation. Co-firing biomass (i.e. wood waste) with coal is considered to be an acceptable method for generating “green power” in a utility plant.
- Fuel cells using hydrogen produced from the above defined renewable sources
- Recycled energy, which is defined as energy produced by a generation unit of not more than 15 MW that converts the otherwise lost energy from the heat from exhaust stacks or pipes to electricity and that does not combust additional fossil fuel. It does not include energy produced by any system that uses energy, lost or otherwise, from a process whose primary purpose is the generation of electricity, including any process involving engine-driven generation or pumped hydroelectricity generation.

2. Treatment of Self Generation

Investor-owned utilities are required to offer a rebate to customers of \$2.00 per watt of installed solar electric capacity at a customer's facilities, up to 100 kW per installation. A net-metering system is established, and excess generation in a given month is applied as a credit for the following month. If in a calendar year a customer's generation exceeds consumption, the utility must reimburse the customer for the excess generation at the utility's average hourly incremental cost for the prior 12-month period. Electricity generated at a customer site is eligible toward meeting the utility's renewable generation requirement. The RES requires that 4 percent of the renewable energy requirement be met with solar, and that half of this 4 percent come from generation at customers' facilities. The utilities are prohibited from establishing unreasonably burdensome interconnection requirements.

- 3. Special Incentives/Exclusions:** The renewable requirement includes a solar set-aside stating that at least 4 percent of the renewable generation in each year must come from solar resources. In addition, a solar rebate program is required by investor-owned utilities, providing customers an incentive for installing solar equipment.

A multiplier of 1.25 is awarded for each kWh of renewable energy that is generated in state. In addition, a multiplier of 1.5 is awarded for each kWh of renewable energy that is generated from a community-based project that is 30 MW or less. A 3 for 1 multiplier is available to rural electric cooperatives and municipal utilities for solar electric generation that commence production prior to July 1, 2015. A renewable energy facility may only take advantage of one multiplier.

Utilities may also count verified generation savings due to energy-efficiency programs towards the requirement, but only in connection with wholesale contracts.

Fossil and Nuclear fuels and their derivatives are not eligible resources.

- 4. Rules governing Location of Generating Facilities:** No in-state deliverability of renewable energy generation is required, but a REC multiplier of 1.25 is awarded for each kWh of renewable energy that is generated in-state.

Utilities may not use the power of eminent domain to site renewable generating capacity.

- 5. Eligibility of Green Pricing Programs:** Retail utilities may apply to the PUC for a determination as to whether eligible renewable energy sold by the retail utility under an optional renewable energy pricing program may be counted by the retail utility toward RES compliance. Such eligible renewable energy shall not be counted toward RES compliance until the PUC grants approval of the utility's application following an evidentiary hearing.

D. COVERED UTILITIES

- 1. Covered utilities:** The requirement applies to retail electric service providers, including all investor-owned and rural electric cooperatives, as well as municipal utilities serving 40,000 or more customers. Municipal utilities are required to implement a RES program that is substantially similar to the requirements placed on IOUs and rural electric cooperatives, including the same eligible energy resources, equal or greater percentage requirements.
- 2. Share of state sales/capacity/delivered power covered:** The RES currently covers about 94 percent of total state electric sales.
- 3. Apportionment of obligation among utilities:** The annual requirements are applied separately to each affected utility.
- 4. Any exemptions by customer class?** None.

F. COST PROVISIONS

- 1. Cost Cap for Retailers:** None.
- 2. Cost Cap for Customers:** The net rate impact of actions taken by a qualified retail utility to comply with the RES shall not exceed two percent of the total electric bill annually for each customer of that qualified retail utility.

The net rate impact shall include the prudently incurred direct and indirect costs of all actions by a utility to meet the RES, including, but not limited to, program

administration, rebates and performance-based incentives, payments under renewable energy supply contracts, payments under REC contracts, computer modeling and analysis time, and utility investment in eligible renewable energy resources. The retail rate impact shall be determined net of new alternative sources of electricity supply from non-eligible energy resources that are reasonably available at the time of the determination. The administrative costs of a utility to implement the RES are capped at ten percent per year of the total annual collection.

For rural electric cooperatives, the maximum retail rate impact is one percent of the total electric bill annually for each customer.

- 3. Cost Recovery Mechanisms:** Qualified retail utilities are entitled to timely cost recovery through retail rate mechanisms for all funds prudently expended to comply with these rules, including the costs the utility incurs to administer the standard rebate offer and the acquisitions of eligible renewable energy resources. Earlier rate recovery mechanisms—such as rate adjustment clauses and a current return on the utility's capital expenditures during construction, are permitted under certain conditions.

Qualified retail utilities are also entitled to earn an extra profit on the ownership investment in a specific eligible renewable energy resource if that resource provides net economic benefits to customers. For these investments, the utility shall be entitled to a return equal to its most recent authorized rate of return on rate base plus a bonus limited to 50 percent of the net economic benefit as long as the utility is in compliance with the RES.

- 4. Supply Contract Requirements:** The PUC requires competitive solicitations to be conducted by each qualifying retail utility to achieve the RES. Each utility shall develop standardized solar and non-solar electricity and REC contracts, and REC-only contracts. The PUC must approve the terms and conditions of renewable energy contracts between a qualifying utility and another party. Contracts must have a minimum term of 20 years (renewable energy supply contracts may be shorter at the sole discretion of the seller), and may reflect a fixed price, or a price that varies by year. Renewable energy supply contracts must require the seller to relinquish all REC ownership associated with contracted electricity to buyer.

To help stimulate in-state development, qualifying utilities are permitted to develop and own as utility rate-based property up to 25 percent of the total resources acquired from entering into power purchase agreements if the facility can be constructed at a reasonable cost compared to the cost of similar eligible resources available in the market. Up to fifty percent of the resources may be owned as utility rate-based property if the qualifying utility demonstrates that the facility would provide significant economic development, energy security, or other benefits.

Competitive solicitations for REC contracts that provide solar-RECs from on-site solar systems shall be conducted at least two times per year by each qualifying retail utility beginning in 2006. Competitive solicitations for the acquisition of other solar-RECs

shall be conducted by each qualifying retail utility every three years beginning in 2006.

Utilities are required to consider proposals from third parties for the provision of renewable energy and/or credits.

5. Special Funds: None

G. COMPLIANCE AND ENFORCEMENT

- 1. Certification, tracking, and trading mechanism[s]:** The PUC has established a system of tradable renewable energy credits (REC) that may be used by a provider to comply with the RES. The PUC defines a REC as a contractual right to the full set of non-energy attributes, including any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, directly attributable to a specific amount of electric energy generated from an eligible renewable energy resource. One REC results from one megawatt-hour of electric energy generated from an eligible renewable energy resource. Eligible RECs that are generated on or after January 1, 2004 may be counted for RES compliance.

In calculating compliance, the total RECs acquired from renewable energy systems during a compliance year may include RECs generated or acquired by: a qualified retail utility (QRU) affiliated renewable energy system; renewable energy contracts; renewable energy credit contracts; a standing offer program; carrying forward from previous compliance years, as authorized by the PUC; and RECs borrowed forward from previous compliance years.

All contracts between QRUs and the owners of renewable energy facilities entered into after December 15, 2005 shall clearly specify the entity who shall own the RECs associated with the renewable energy facility. In the case of a contract that remains silent on REC ownership, the RECs shall be awarded to the utilities.

RECs shall be used for a single purpose only, and shall expire or be retired upon use for that purpose.

- 2. Flexibility Mechanisms:** The eligibility for compliance of an eligible REC shall expire at the end of the fifth calendar year following the calendar year during which it was generated.

For the first four compliance years (2007-2010), the QRU may borrow forward eligible renewable energy generated during the following two compliance years. Any borrowed renewable energy generated during a compliance year must be made up by actual renewable energy generation during that compliance year or borrowed from subsequent compliance years, provided that 2010 is the last compliance year that borrowing forward may occur.

Utilities may also count verified generation savings due to energy-efficiency programs towards the requirement under certain very limited circumstances.

- 3. Penalties, Procedures, Powers, and Sanctions:** If after notice and possible non-compliance report hearing, the PUC has discretion to determine that the QRU did not fully comply with any of the solar, on-site solar and non-solar components of its RES during the most recently completed compliance year or if the PUC determines that the QRU did not comply with any other provisions of the rules, the PUC shall take the following actions:

- Determine for each component for which there was noncompliance the cost that would have been incurred by the QRU to fully comply with the standard through the acquisition of RECs and issue an order requiring the QRU to issue bill credits in such amounts to retail customers.

- The PUC may also take other administrative action including imposition of administrative penalties against the qualified retail utility.

The cost of such bill credits or penalties shall not be recovered from retail customers through the utility's rates.

- 4. Treatment of emission allowance or reduction credits:** NA

- 5. Escape Clauses:** For the first four compliance years (2007-2010), no administrative penalties shall be assessed against a qualified retail utility if the failure to meet the RES results from events beyond the reasonable control of the utility, which could not have reasonably been mitigated by the utility. In addition, if retailers are currently bound by conflicting wholesale contracts, retailers must comply through the use of credits and documented energy savings. No future contracts may conflict with requirements.

H. ADMINISTRATION

1. Administering Entities, Duties, Powers, and Contact Information:

Public Utilities Commission of Colorado
1580 Logan Street, OL 2
Denver, CO 80203
Phone: (800) 888-0170
Fax: (303) 894-2065
Website: <http://www.dora.state.co.us/puc>

I. REPORTING REQUIREMENTS and PROGRAM STATUS

- 1. Utility Reporting Requirements:** Beginning in 2007, each investor-owned utility is required to submit to the PUC an annual compliance report on June 1 detailing the

status of the utility's compliance with the RES. Upon review of the utility's annual compliance report, PUC Staff recommendation and all comments filed, the PUC will issue an order stating whether the utility complied with the components of its RES during the most recently completed compliance year.

Rural electric cooperatives must submit an annual compliance report to the PUC no later than June 1st of each year. Annual compliance reports by rural electric cooperatives are not, however, subject to review and approval by the PUC.

2. Administrative Reporting Requirements: NA

- 3. Cost Information:** The first compliance year of the RES is not until 2007, so no actual cost data is available. However, in 2004, two reports were released on the potential cost effects of the RES.

Ron Binz, "[The Impact of the Renewable Energy Standard in Amendment 37 on Electric Rates in Colorado](#)," Public Policy Consulting. September 2004.

UCS, "[The Colorado Renewable Energy Standard Ballot Initiative: Impacts on Jobs and the Economy](#)," October 2004.