



ARIZONA RENEWABLE ENERGY STANDARD SUMMARY

A. SUMMARY

Arizona was one of the first states to adopt a minimum requirement for renewable energy when the Arizona Corporate Commission (ACC) adopted a solar portfolio standard as part of a 1996 regulatory proceeding that restructured the state's electric power industry. The solar standard was later repealed, and an environmental portfolio standard (EPS) was created through a separate, stand alone regulatory proceeding. In October 2006, the ACC made significant modifications to the EPS, including increasing the annual requirements, and changing the title of the policy to a renewable energy standard (RES). The RES is now set at 15 percent by 2025. Affected utilities must satisfy the annual renewable energy requirements through the use of renewable energy credits from eligible resources. An affected utility's reasonable and prudent costs of meeting this standard are recovered both from an environmental portfolio surcharge on customers' bills.

B. APPLICABLE AUTHORIZING LEGISLATION/REGULATION

- 1. Part of Broader Energy Package?** A solar portfolio standard was originally included in a 1996 regulatory proceeding that restructured the electric power industry in Arizona. The solar standard was later repealed, and the EPS (later called a RES) was created through a separate, stand alone regulatory proceeding.
- 2. Legislative/Regulatory Intent:** In its July 2007 NOFR for the revised RES, the ACC stated that it initiated the rulemaking "to promote its goals to protect the environment and increase renewable energy resources for diversity of the fuel supply, to enhance system reliability and safety in a post 9/11 era, and to mitigate against volatility in non-renewable fuel prices."
- 3. Authorizing Legislation/Regulation:**
 - 1996 – ACC, Docket No. U-0000-94-165 (Decision No. 59943), Decision and Amended Rules On Electric Competition in 1996
 - 5/00 – ACC adopts EPS and orders staff to begin rulemaking process Environmental Portfolio Standard ([Decision 62506](#))
 - 2/01 and 3/01 – ACC issues orders adopting final EPS rules, Decision nos. [63364](#) and [63486](#) (Docket No. RE-00000C-00-0377)
 - 10/06 – ACC issues order adopting increased RES and tariff, [Decision no. 69127](#), (Docket. RE-00000C-05-0030)
 - 7/07 – ACC issues [Notice of Final Rulemaking on RES rule](#) (Docket. RE-00000C-05-0030)

Arizona RES encoded as [Arizona Administrative Code, R14-2-1801-1816](#)

4. Date Adopted: May 2000

5. Date Effective: 3/1/01

C. RULEMAKING

1. Implementing/Rulemaking Authority: Arizona Corporate Commission (ACC)

2. Rulemaking Completed to Date:

1996 – Arizona Corporation Commission (ACC), Docket No. U-0000-94-165, [Decision No. 59943](#), Decision and Amended Rules On Electric Competition in 1996

5/00 – ACC adopts EPS and orders staff to begin rulemaking process Environmental Portfolio Standard, [Decision 62506](#)

2/01 and 3/01 – ACC issues orders adopting final EPS rules, Decision nos. [63364](#) and [63486](#) (Docket No. RE-00000C-00-0377)

6/03 – ACC comprehensive review of EPS, “[Costs, Benefits, and Impacts of the Arizona Environmental Portfolio Standard.](#)”

2/06 – ACC staff issue report on [proposed rule amendments](#) and [draft RES rules](#)

3/06 – ACC order issues Proposed RES and Tariff Rules, [Decision No. 68566](#) (Docket RE-00000C-05-0030)

10/06 – ACC issues order adopting increased RES and tariff, [Decision no. 69127](#) (Docket. RE-00000C-05-0030)

D. TARGETS AND TIMETABLES

1. Summary: The Arizona RES requires a minimum of 1.25 percent of the total retail electric sales by a covered electric service provider in 2006 be derived from eligible renewable electricity technologies, increasing to 15 percent in 2025, and thereafter. In addition, distributed renewable energy must account for 5 percent of the annual renewable energy requirement in 2007, increasing to 30 percent in 2012, and thereafter. Half of the annual distributed requirement must be met with residential applications.

2. Schedule:

Year	Percent retail sales from renewable sources	Percent of requirement from distributed renewable energy
2006	1.25 %	0 %
2007	1.50 %	5 %
2008	1.75 %	10 %
2009	2.00 %	15 %
2010	2.50 %	20 %
2011	3.00 %	25 %
2012	3.50 %	30 %
2013	4.00 %	30 %
2014	4.50 %	30 %
2015	5.00 %	30 %
2016	6.00 %	30 %
2017	7.00 %	30 %
2018	8.00 %	30 %
2019	9.00 %	30 %
2020	10.00 %	30 %
2021	11.00 %	30 %
2022	12.00 %	30 %
2023	13.00 %	30 %
2024	14.00 %	30 %
2025, and thereafter	15.00 %	30 %

3. Treatment of Existing Capacity: With the exception of incremental generation from existing hydroelectric facilities, generation from existing renewable energy facilities is not eligible. New renewable energy resources are defined as those installed on or after January 1, 1997.

4. Sunset Clause: None

E. ELIGIBLE RESOURCES AND TECHNOLOGIES

1. Eligible Resources: According to the ACC’s revised RES rule, “Eligible Renewable Energy Resources” are applications of the following defined technologies that displace conventional energy resources that would otherwise be used to provide electricity to an affected utility’s Arizona customers:

- Biogas electricity generators, defined as producing “electricity from gases that are derived from plant-derived organic matter, agricultural food and feed matter, wood wastes, aquatic plants, animal wastes, vegetative wastes, or wastewater treatment facilities using anaerobic digestion or from municipal solid waste through a digester process, an oxidation process, or other gasification process.”
- Biomass electricity generators, defined as using “any raw or processed plant-derived organic matter available on a renewable basis, including: dedicated

energy crops and trees; agricultural food and feed crops; agricultural crop wastes and residues; wood wastes and residues, including landscape waste, right-of-way tree trimmings, or small diameter forest thinnings that are 12" in diameter or less; dead and downed forest products; aquatic plants; animal wastes; other vegetative waste materials; non-hazardous plant matter waste material that is segregated from other waste; forest-related resources, such as harvesting and mill residue, pre-commercial thinnings, slash, and brush; miscellaneous waste, such as waste pellets, crates, and dunnage; and recycled paper fibers that are no longer suitable for recycled paper production, but not including painted, treated, or pressurized wood, wood contaminated with plastics or metals, tires, or recyclable post-consumer waste paper."

- Eligible hydropower facilities, defined as "hydropower generators that were in existence prior to 1997 and that satisfy one of the following two criteria: a. New Increased Capacity of Existing Hydropower Facilities: A hydropower facility that increases capacity due to improved technological or operational efficiencies or operational improvements resulting from improved or modified turbine design, improved or modified wicket gate assembly design, improved hydrological flow conditions, improved generator windings, improved electrical excitation systems, increases in transformation capacity, and improved system control and operating limit modifications. The electricity kWh that are eligible to meet the Annual Renewable Energy Requirements shall be limited to the new, incremental kWh output resulting from the capacity increase that is delivered to Arizona customers to meet the Annual Renewable Energy Requirement. b. Generation from pre-1997 hydropower facilities that is used to firm or regulate the output of other eligible, intermittent renewable resources: The electricity kWh that are eligible to meet the Annual Renewable Energy Requirements shall be limited to the kWh actually generated to firm or regulate the output of eligible intermittent Renewable Energy Resources and that are delivered to Arizona customers to meet the Annual Renewable Energy Requirements."

In addition, new hydropower generator of 10 MW or less is also eligible for the RES, and is defined as "a generator, installed after January 1, 2006, that produces 10 MW or less and is either: a. A low-head, micro hydro run-of-the-river system that does not require any new damming of the flow of the stream; or b. An existing dam that adds power generation equipment without requiring a new dam, diversion structures, or a change in water flow that will adversely impact fish, wildlife, or water quality; or c. Generation using canals or other irrigation systems."

- Fuel cells that use only renewable fuels
- Geothermal generator
- Hybrid wind and solar electric generator, defined as "a system in which a wind generator and a solar electric generator are combined to provide electricity."
- Landfill gas generator
- Solar electricity resources
- Wind generator

- Distributed Renewable Energy Resources are applications of the following defined technologies that are located at a customer's premises and that displace conventional energy resources that would otherwise be used to provide electricity to Arizona customers: biomass or biogas electricity generator; geothermal generator; fuel cells that use only renewable fuels; new hydropower generator of 10 MW or less; solar electricity resources; biomass or biogas thermal systems (not including biomass and wood stoves, furnaces, and fireplaces); commercial solar pool heaters; geothermal space heating and process heating systems; renewable combined heat and power systems; solar daylighting; solar heating, ventilation, and air conditioning systems; solar industrial process heating and cooling; solar space heating and cooling; solar hot water; and wind generator of 1 MW or less.

2. **Special Incentives:** Several extra renewable energy credit (REC) multipliers exist for early installation (from January 1, 2001 to December 31, 2003), in-state solar power plant installation, in-state manufacturing and installation content, distributed solar. All multipliers are additive, except that the maximum combined extra credit multiplier cannot exceed 2.0. RECs derived from eligible renewable energy resources installed after December 31, 2005, are not eligible for extra credit multipliers.

The RES also provides a partial credit to an affected utility or its affiliate owns or makes a significant investment in any solar electric manufacturing plant located in Arizona or if it or its affiliate provides incentives to a manufacturer of solar electric products to locate a manufacturing facility in Arizona. In this event, an affected utility can acquire RECs to apply to the non-distributed portion of its annual requirement equal to the nameplate capacity of the solar electric generators produced and sold in a calendar year times 2,190 hours (approximately a 25% capacity factor). RECs generated through the partial manufacturing credit provision cannot account for more than 20 percent of an affected utility's annual requirement, and extra credit multipliers do not apply to RECs created by this provision.

3. **Exclusions:** The use of municipal solid waste is explicitly limited to digester, oxidation, or other gasification technologies, and the definition of biomass excludes painted, treated, or pressurized wood, wood contaminated with plastics or metals, tires, or recyclable post-consumer waste paper.

In addition, the ACC may adopt pilot programs in which additional technologies are established as eligible renewable energy resources. Any additional technologies must be renewable energy resources that produce electricity, replace electricity generated by conventional energy resources, or replace the use of fossil fuels with renewable energy resources. Energy conservation products, energy management products, energy efficiency products, or products that use non-renewable fuels are explicitly excluded from eligibility for these pilot programs.

4. **Treatment of Self-Generation:** Generation from renewable energy resources that are located on the consumer's premises shall count toward the RES.

5. **Location of Generating Facilities:** Generation from eligible renewable energy resources must be deliverable to Arizona customers.
6. **Eligibility of Green Pricing Programs:** Eligible renewable electric generators delivering power to Arizona customers that are included in any load-serving entity's green pricing program may be eligible. All green pricing programs must be reviewed and approved by the ACC.

F. COVERED UTILITIES

1. **Covered utilities:** An affected utility means a public service corporation serving retail electric load in Arizona, but excludes any utility distribution company with more than half of its customers located outside of Arizona. Municipal utilities and the Salt River Project are not required to meet the RES. Several cooperative utilities represented by the Arizona Electric Power Cooperative received a compliance waiver from the ACC through August 2004.
2. **Share of state sales/capacity/delivered power:** ~ 59 percent of total state electric sales in 2006.
3. **Apportionment of obligation among retailers:** The annual requirements are applied separately to each affected utility.
4. **Exemptions by customer class:** None

G. COST PROVISIONS

1. **Cost Cap for Retailers:** Based on the original standard rules, the ACC would continue the annual increase in the portfolio percentage after December 31, 2004, only if the cost of environmental portfolio electricity had declined to an approved cost/benefit point. The ACC determined in February 2004 that the cost/benefit ratio of the standard was acceptable, and that retailers should meet the targets initially specified. There are no other cost caps specified for affected utilities.
2. **Cost Cap for Customers:** The revised RES rule made significant changes to the environmental portfolio surcharge system under the original standard, which capped the monthly surcharge at \$0.35 for residential customers, and \$13 or \$39 for non-residential customers (depending on size of electricity demand). Under the revised rule, each affected utility is required to file with the ACC a tariff that proposes methods for recovering the reasonable and prudent costs of complying with the RES. The ACC has the authority to approve, modify, or deny a tariff. Until a proposed tariff and monthly environmental portfolio surcharge is approved by the ACC, the amount of the surcharge, and therefore the cost cap, is unknown.
3. **Cost Recovery Mechanism:** Each affected utility is required to file with the ACC a tariff that proposes methods for recovering the reasonable and prudent costs of

complying with the RES. These costs are typically expected to be recovered through an environmental portfolio surcharge placed on each customer's monthly bill. The ACC has the authority to approve, modify, or deny a tariff. The affected utility's tariff filing must provide the following information: financial information and supporting data sufficient to allow the ACC to determine the affected utility's fair value; a discussion of the suitability of the sample tariff provided by the ACC (see below) in the revised rules for recovering the affected utility's reasonable and prudent costs of RES compliance; data to support the level of costs that the affected utility believes will be incurred in order to comply with the annual requirements; data to demonstrate that the affected utility's proposed tariff is designed to recover only the costs in excess of the market cost of comparable conventional generation (see definition below); and any other information that the ACCC believes is relevant.

The sample tariff states that "unless otherwise ordered by the ACC, the renewable energy standard surcharge shall be assessed monthly to every retail electric service. This monthly assessment will be the lesser of 0.004988 per kWh or: for residential customers, \$1.05 per service; for non-residential customers, \$39.00 per service; for non-residential customers whose metered demand is 3,000 kW or more for three consecutive months, \$117.00 per service; for non-metered services, the lesser of the load profile or otherwise estimated kWh required to provide the service in question, or the service's contract kWh shall be used in the calculation of the surcharge. The specific amounts in the sample tariff are for illustrative purposes only and affected utilities have the option to submit, with proper support, tariff filings that have alternative surcharge amounts."

The market cost of comparable conventional generation is defined by the ACC as "the affected utility's energy and capacity cost of producing or procuring the incremental electricity that would be avoided by the resources used to meet the annual renewable energy requirement, taking into account hourly, seasonal, and long-term supply and demand circumstances. Avoided costs include any avoided transmission and distribution costs and any avoided environmental compliance costs."

The affected utility's annual renewable energy requirement is effective upon ACC approval of the tariff. An affected utility also has the option to forego the tariff option, and instead file a rate case to recover cost incurred from meeting the RES.

In addition, affected utilities may recover part of the costs of the RES through current system benefits charges, if they exist, including a re-allocation of demand side management funding to RES uses.

4. Supply Contract Requirements: None specified

5. Special Funds: None

H. COMPLIANCE AND ENFORCEMENT

- 1. Certification, Tracking, and Trading:** Affected utilities must satisfy the annual renewable energy requirements through the use of renewable energy credits (RECs) from eligible resources. One REC is created for each kWh derived from an eligible renewable energy resource. An affected utility can transfer RECs to another party and can acquire RECs from another party. Each affected utility is responsible for demonstrating compliance by filing documents with the ACC. Arizona may join the Western Renewable Energy Generation Information System (WREGIS) when it is operational.

A REC is defined by the ACC as the “unit created to track kWh derived from an eligible renewable energy resource or kWh equivalent of conventional energy resources displaced by distributed renewable energy resources.” In addition, the revised RES rules state that if an affected utility trades or sells environmental pollution reduction credits or any other environmental attributes associated with kWh produced by an eligible renewable energy resource, the affected utility may not apply RECs derived from that same kWh to satisfy the annual renewable energy requirements. Therefore, to be used to meet the RES, a REC must include all the environmental attributes associated with it.

A REC is owned by the owner of the eligible renewable energy resource from which it was derived unless specifically transferred. However, all RECs generated through the customer self-directed renewable energy option for eligible large customers of affected utilities will apply to the affected utility’s annual renewable energy requirement.

- 2. Flexibility:** An affected utility may use RECs acquired in any year to meet its annual renewable energy requirement. In addition, a number of credit multipliers are available.
- 3. Penalties:** If an affected utility fails to meet the annual renewable energy requirements, it is required to include a notice of noncompliance with its annual compliance report. The noncompliance notice must provide: a computation of the difference between the annual renewable energy credits required and the amount actually obtained; a plan describing how the affected utility intends to meet the shortfall from the previous calendar year in the current calendar year; and an estimate of the costs of meeting the shortfall.

If the ACC finds after affording an affected utility notice and an opportunity to be heard that the affected utility has failed to comply with its approved implementation plan, the ACC may find that the affected utility cannot recover the costs of meeting the shortfall in rates.

The ACC also may impose penalties or take actions pursuant to its normal regulatory enforcement authority. An affected utility is entitled to notice and an opportunity to be heard prior to ACC action or imposition of penalties.

- 4. Escape Clauses:** The ACC may waive compliance with the RES for good cause, and any affected utility may petition the ACC to waive its compliance with the RES for good cause. “Good cause” is not explicitly defined in the regulations.

In addition, the original standard provided that the ACC would continue the annual increase in the portfolio percentage after December 31, 2004, only if the cost of environmental portfolio electricity had declined to an ACC approved cost/benefit point. The ACC ruled in favor on continuing the requirements in February 2004.

I. ADMINISTRATION

- 1. Administering Entities, Duties, Powers, and Contact Information:** Program administration is under the authority of the Arizona Corporation Commission.
- 2. Contact Information:**
Arizona Corporation Commission, Utilities Division
1200 W. Washington St.
Metro Phoenix, AZ 85007
Phone: (602) 542-4251
Web site: <http://www.azcc.gov>

J. REPORTING REQUIREMENTS and PROGRAM STATUS

- 1. Reporting Requirements:** Beginning April 1, 2007, and every April 1 thereafter, each affected utility is required to file with the ACC a report that describes its compliance with the annual renewable energy requirements for the previous calendar year.

In addition, beginning July 1, 2007, and every July 1 thereafter, each affected utility is required to file with the ACC for review and approval a plan that describes how it intends to comply with the RES for the next calendar year. The ACC has the authority to hold a hearing to determine whether an affected utility’s compliance report and implementation plan satisfies the RES requirements. These compliance reports and implementation plans will also be made available to the public on the ACC’s website.

- 2. Review Requirements:** The ACC was required to report on the costs and benefits of the original RES by June 30, 2003 (see below for link). Based on results of EPS policy review conducted and released by ACC staff in June 2003, the ACC ruled in February 2004 to allow the annual requirements to continue increasing, per the original ruling.

No further policy review is specified in the revised renewable energy standard rules approved by the ACC in October 2006.

- 3. Cost Information:** The Environmental Portfolio Cost Evaluation Working Group,

established by the ACC, released the following cost and benefits report in June 2003:
[“Costs, Benefits, and Impact of the Arizona Environmental Portfolio Standard.”](#)

K. STATUS AND SPECIAL NOTES

A February 2006 [ACC staff report on the proposed EPS amendments](#) included an appendix that summarized the compliance results for requirement years 2001-2004. For each of these years, Arizona Public Service, Tucson Electric Power, UNSC/Citizens, and Navopache Electric achieved partial, but not full compliance with the EPS requirements. The cooperative utilities represented by the Arizona Electric Power Cooperative received a compliance waiver through August 2004.