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BEFORE THE ARIZONA CORPORATION COMMISSION

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FEB 17 2005

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IN THE MATTER OF THE NOTICE OF  
PROPOSED RULE AMENDMENT FOR THE  
ENVIRONMENTAL PORTFOLIO STANDARD  
RULES.

DOCKET NO. RE-00000C-00-0377  
DOCKET NO. RE-00000C-05-0030

**JOINT COMMENTS OF TUCSON  
ELECTRIC POWER COMPANY  
AND UNS ELECTRIC, INC.**

Tucson Electric Power Company ("TEP") and UNS Electric, Inc. ("UNSE"), through undersigned counsel, hereby submit their joint comments on the "Staff Report on Proposed Changes to the Environmental Portfolio Standard Rules (Docket Nos. RE-00000C-00-0377 and RE-00000C-05-0030)" dated January 21, 2005 (the "Staff Report"), as follows:

**INTRODUCTION.**

TEP and UNSE have been, and continue to be, active participants and supporters of the development and successful implementation of the Environmental Portfolio Standard ("EPS").

TEP and UNSE have reviewed the Staff Report and provide these comments in an effort to strengthen the proposed changes to the Environment Portfolio Standard Rules (A.A.C. R14-2-1618) ("EPS Rules"). TEP and UNSE believe that it is critical that the EPS Rules promote the development of new renewable energy resources in Arizona and provide utilities with the opportunity of recovering costs associated therewith.

**GENERAL OVERVIEW OF COMMENTS.**

The Staff Report recommends several changes to the EPS Rules which will have the effect of accelerating development of Arizona's "non solar" renewable resources while at the same time preserving Arizona's leadership role in the development of solar resources. TEP and UNSE

1 believe that this is an appropriate course to follow provided the targeted development levels are  
2 reasonable and the utilities' costs for the accelerated development of these resources is  
3 recoverable.

4 The Staff Report's annual renewable energy percentage goals through 2015 are very  
5 aggressive. The annual renewable energy percentage goals from 2015 through 2025 will also  
6 require a significantly greater use of Arizona's solar resources than is currently being experienced.  
7 TEP and UNSE believe that it is important to recognize and acknowledge that the ability of  
8 utilities to meet these goals will be dependent, in part, upon anticipated cost reductions in solar  
9 generation equipment.

10 TEP and UNSE are concerned that if the recommendations in the Staff Report are  
11 implemented without the changes proposed in these joint comments, utilities will be required to  
12 absorb the additional costs of the Staff Report's increased renewable energy goals without the  
13 opportunity to recover their increased costs.

14 For example, (i) the Staff Report's proposed increase in the EPS surcharge revenues will  
15 merely offset TEP's loss of System Benefit Charge funds when those funds are returned for use in  
16 the DSM programs; and (ii) the proposed EPS surcharge (which arguably will be sufficient for  
17 TEP to support development of resources to meet the solar electric portfolio percentage) will not  
18 provide for the recovery of any "above market costs" for purchasing or generating other renewable  
19 energy resources.

20 TEP and UNSE support the Staff Report's proposal for the implementation of a  
21 "renewable energy adjustor" to recover utilities' costs. Although this mechanism could cause  
22 TEP and UNSE to recover some EPS related costs over time rather than immediately, an adjustor  
23 could be beneficial for mitigating bill increases for customers.

24 Attached hereto as Exhibit 1, and by this reference incorporated herein, are a red-lined  
25 version and a final copy of the EPS Rules reflecting changes proposed by TEP and UNSE.  
26  
27

1 **SPECIFIC COMMENTS ON STAFF REPORT.**

2 **1. Staff Report Issue No. 3a: What is the appropriate resource mix in the portfolio?**

3 **TEP and UNSE recommendation:**

- 4 • TEP and UNSE believe that in order to maximize development of Arizona “non solar”  
5 renewable resources, there should not be a solar electric “set-aside” in the purchased  
6 renewable power portfolio percentage.

7 **2. Staff Report Issue No. 3b: Should new and emerging technologies be included?**

8 **TEP and UNSE recommendation:**

- 9 • TEP and UNSE propose that a mechanism be implemented to allow currently unknown  
10 new sources of renewable energy (that in the future are discovered in Arizona) to qualify  
11 as renewable energy resources for the EPS.
- 12 • TEP and UNSE, in Exhibit 1 hereto, propose clarifying language regarding (i) the  
13 equivalent value of solar air conditioning, solar hot water heating and solar indoor space  
14 heating; (ii) a requirement for water use neutrality for solar air conditioning; (iii) removal  
15 of directly burned Municipal Solid Waste from the qualifying list of renewable energy  
16 resources; (iv) a maximum electrical capacity size of 10,000 kW for defining small hydro  
17 generation; (v) a requirement that biomass and biogas must come from in Arizona sources;  
18 and (vi) a requirement that the renewable energy must be delivered to Arizona customers.

19 **3. Staff Report Issue No. 5: Are static technology percentages still justified and if so,**  
20 **should the percentages be reconfigured in A.A.C. R14-2-1618 B.3.?**

21 **TEP and UNSE recommendation:**

- 22 • TEP and UNSE note that the Staff Report’s proposed increase for the Distributed  
23 Renewable Energy portfolio percentage will require a rate of customer-sited solar  
24 installations unprecedented on a per capita basis in any previous solar energy development  
25 program including those of California, Germany and Japan. Based upon current TEP  
26 SunShare program subsidy rate schedules, the proposed EPS surcharge funding is barely  
27 sufficient to support proposed installations only if funds are not allocated to any other part

1 of the EPS program. TEP and UNSE believe that market forces will determine customer  
2 response to installing renewable energy devices. However, based on customer response to  
3 existing solar support programs in this country and overseas, there is a real possibility that  
4 customers will not respond to the proposed EPS programs in sufficient amounts to meet  
5 the proposed goals. Accordingly, TEP and UNSE recommend that (i) if the funds  
6 allocated for the Distributed Renewable Energy program are not used in one year, then  
7 those funds may be applied to other EPS resource development programs in the following  
8 year; and (ii) the utility may apply for a waiver of the Distributed Renewable Energy  
9 portfolio percentage.

10 **4. Staff Report Issue No. 6: Should the Environmental Portfolio Standard funding levels**  
11 **be increased?**

12 **TEP and UNSE recommendation:**

- 13 • TEP and UNSE propose that a Renewable Energy Purchased Power Adjustor Fund and  
14 revenue recovery mechanism be approved for implementation by a utility prior to that  
15 utility being required to meet any of the portfolio percentages--other than the solar electric  
16 percentage. If renewable power is purchased at an above market cost prior to the  
17 implementation of a Renewable Purchased Power Adjustor Fund, those costs will be  
18 deferred to a future time resulting in a larger cost impact to customers. As a policy,  
19 renewable energy cost recovery should not be deferred in the early years of renewable  
20 technology development.
- 21 • TEP and UNSE recommend that the cost for a utility to develop an equivalent renewable  
22 energy resource should be considered as an alternate in approving a renewable purchased  
23 power agreement and that a cap be set on the price of purchased power wherein a  
24 purchased power agreement with a price below that cap not be considered imprudent based  
25 solely on the price. TEP and UNSE propose that cap be set at 150% of market price.  
26 Additionally, a utility should have the option to request a waiver of the purchased  
27

1 renewable power portfolio percentage if insufficient renewable resources are available for  
2 purchase.

3 **5. Staff Report Issue No. 7: Should Arizona increase its commitment to renewable**  
4 **energy by increasing the surcharge?**

5 **TEP and UNSE recommendation:**

- 6 • TEP and UNSE propose the surcharge rate be increased to \$0.0025 per kWh and the  
7 surcharge caps be increased to \$1.00 per month for residential customers, \$37.50 per  
8 month for small commercial customers and \$112.00 per month for large commercial  
9 customers in order to maintain customer class rate percentage of EPS funding ratio parity  
10 while slightly increasing the total surcharge revenue levels above that recommended by  
11 Staff.
- 12 • TEP and UNSE propose that “customer self-directed programs” should not be offered due  
13 to the small amount of EPS surcharge dollars available and potentially high program  
14 administrative costs for the utility. TEP and UNSE recommend that the alternative to  
15 customer self-directed programs should be an EPS Credit Purchase Program, which should  
16 provide larger customers with viable opportunities to participate in developing customer  
17 sited renewable energy projects.

18 **6. Staff Report Issue No. 8: Should Demand-Side Management funding be restored?**

19 **TEP and UNSE recommendation:**

- 20 • TEP and UNSE recommend that “System Benefit Charge funds” that were previously used  
21 for DSM programs and are currently being used for EPS funding should revert back to use  
22 for DSM programs.

23 **7. Staff Report Issue: Uniform EPS Credit Program.**

24 **TEP and UNSE recommendation:**

- 25 • TEP and UNSE recommend that the Uniform EPS Credit Purchase Program be approved  
26 by the Commission for implementation prior to the Distributed Renewable Energy  
27 Resources portfolio percentages becoming effective. The total program costs of the

1 Uniform EPS Credit Purchase Program will not be known until the details of the renewable  
2 energy subsidy payment levels and payment timing are defined. Without the program  
3 being defined, the cost impact of the program to a utility, and its customers, is unknown.

4 **CONCLUSION.**

5 The Arizona Corporation Commission Cost Evaluation Working Group ("CEWG") Report  
6 concluded that:

7 TEP and APS have acted carefully in the selection, design,  
8 installation and operation of their renewable generation  
9 resources, and have reasonably managed EPS financial  
resources.

10 The CEWG also reported a clear consensus that the current EPS did not provide sufficient  
11 funding for all utilities to meet the EPS renewable energy goals in the timeframe required.

12 The current EPS has the most aggressive solar electric development program goals (on a  
13 watt per person basis through 2007) of any jurisdiction—worldwide. The existing EPS requires  
14 installation of at least 12 watts of solar electric generating capacity per person in a 6-year  
15 timeframe. Through use of the combined utility scale/customer sited Photo-voltaic ("PV")  
16 program, TEP (and our customers) has installed 7 watts of capacity per person in a 4-year period.  
17 By way of comparison, (i) TEP's results exceed those of the solar electric support programs of  
18 California (with much higher subsidy costs), which have resulted in just over 2 watts of capacity  
19 per person installed in 7 years; and (ii) neither Germany nor Japan have reached a level of 7 watts  
20 per person of installed solar electric capacity--even after offering very financially attractive solar  
21 support programs for more than a decade.

22 The large majority of solar electricity produced by TEP to meet existing EPS requirements  
23 is produced by utility scale PV systems. Based on the results of the California customer sited  
24 solar development programs, the only available strategy to meet the aggressive Arizona EPS solar  
25 energy goals, was for utilities to build some utility scale PV systems.

26 Given the aggressive increase in the rates of solar production required under the current  
27 EPS, it was optimistic for people to expect that Arizona customers (with fairly low electric rates,

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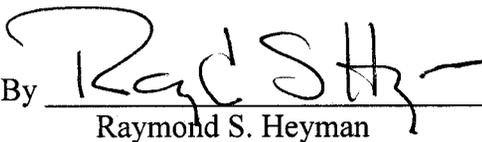
1 long memories of the 1980's solar hot water heating fiasco and stiff commercial property tax  
2 rates) were going to install solar energy systems at 6 times the per capita PV installation rate of  
3 Californians. Nevertheless, TEP's SunShare program exceeded the California per capita PV  
4 installation rates in all 4 years of the program.

5 If distributed renewable energy resources are to meet the proposed EPS goals, TEP and  
6 UNSE believe that the appropriate Arizona entities should address remaining barriers to customer  
7 installation of solar energy devices. These barriers and obstacles include (i) anti-solar practices  
8 implemented by Home Owner Associations; (ii) overly constrictive solar installation permit  
9 requirements by municipalities; and (iii) property tax code provisions which penalize investment  
10 in high capital cost, low operating cost renewable generation equipment.

11 Finally TEP and UNSE would, as a general principle, recommend that there be a periodic  
12 review of the EPS to incorporate new information and past experience into future requirements  
13 and funding levels. TEP and UNSE believe that it would be appropriate for an EPS review to take  
14 place every four years, starting in 2010.

15 RESPECTFULLY SUBMITTED this 17<sup>th</sup> day of February 2005.

16 ROSHKA HEYMAN & DEWULF, PLC

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26 By Mary Ippolito

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**CLEAN  
VERSION  
OF R14-2-1618**

#### **R14-2-1618. Environmental Portfolio Standard**

- A. Upon the effective implementation of a Commission-approved Environmental Portfolio Standard Surcharge tariff, any Load-Serving Entity selling electricity or aggregating customers for the purpose of selling electricity under the provisions of this Article must derive at least .2% of the total retail energy sold from new solar electric resources, distributed renewable energy resources or environmentally-friendly renewable electric resources, whether that energy is purchased or generated by the seller. Solar electric resources include photovoltaic resources and solar thermal resources that generate electricity. New solar electric resources, distributed renewable energy resources, and environmentally-friendly renewable electric technologies are those installed on or after January 1, 1997.
1. Electric Service Providers, that are not UDCs, are exempt from portfolio requirements until 2004, but could voluntarily elect to participate. ESPs choosing to participate would receive a pro rata share of funds collected from the Environmental Portfolio Surcharge delineated in R14-2-1618.A.2 for portfolio purposes to acquire eligible portfolio systems or electricity generated from such systems.
  2. Utility Distribution Companies would recover part of the costs of the portfolio standard through current System Benefits Charges as approved by the Commission. Additional Portfolio standard costs will be recovered by a customer Environmental Portfolio Surcharge on the customers' monthly bill. The Environmental Portfolio Surcharge shall be assessed monthly to every metered and/or non-metered retail electric service. This monthly assessment will be the lesser of \$0.0025 per kWh or:
    - a. Residential Customers: \$1.00 per service,
    - b. Non-Residential Customers: \$37.50 per service,
    - c. Non-Residential Customers whose metered demand is 3,000 kW or more for three consecutive months: \$112.00 per service. In the case of unmetered services, the Load-Serving Entity shall, for purposes of billing the Environmental Portfolio Standard Surcharge and subject to the caps set forth above, use the lesser of (i) the load profile or otherwise estimated kWh required to provide the service in question; or (ii) the service's contract kWh.
  3. Customer bills shall reflect a line item entitled "Environmental Portfolio Surcharge, mandated by the Corporation Commission."
  4. Utility Distribution Companies or ESPs that do not currently have a renewables program may request a waiver or modification of this Section due to extreme circumstances that may exist.
  5. Utility Distribution Companies (UDC) may propose rate adjustment mechanisms during rate cases to recover expenses incurred in meeting the EPS goals including but not limited to purchasing or generating the renewable electricity, distributed renewable energy resources, and/or renewable energy credits required to meet the portfolio percentages, that are in excess of the revenues received through the Environmental Portfolio Surcharge and System Benefit Charge, including, but not limited to, the cost of firming intermittent renewable electric or energy resources. Until such rate adjustment mechanisms are approved by the Commission, only the minimum solar electric portfolio annual percentage requirements shall be applicable.
  6. All renewable electricity and energy used to meet portfolio percentages must be produced in and delivered to customers in Arizona. An Affected utility may request a waiver of this provision if in state renewable energy resources are not available at an acceptable cost.
  7. The Commission staff shall review the progress towards meeting the minimum portfolio percentages of solar electricity, Distributed Renewable Energy Resources and competitively purchased energy in 2010, 2014, 2018 and 2022. The Director, Utilities Division shall establish, not later than January 1, of the year prior to the review year, an Environmental Portfolio Standard Evaluation Working Group to make recommendations to the Commission of changes to the Environmental Portfolio Standard to improve the production of renewable energy resources at the lowest acceptable premium cost. The recommendations of the Working Group shall be presented to the Commission not later than December 31 of the year prior to the review year.
  8. Definitions:

"Biogas electricity generation" derives its energy from gases produced from plant-derived organic matter, agricultural food and feed matter, woodwastes, aquatic plants, animal wastes, vegetative wastes, wastewater treatment facilities via anaerobic digestion or other processes. Municipal solid waste that produces gas through a digester or gasification process would also be considered to be biogas.

"Biomass" is defined as 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, aquatic plants, animal wastes and other vegetative waste materials.

"Distributed Renewable Energy Resources" are those resources that are located at utility customer premises that either produce renewable electricity or replace the need for use of conventional electricity or fossil fuel energy resources. The technologies considered eligible as distributed renewable energy resources are: solar electric generators, small-scale wind generators (10 kW or less), solar water heaters that replace electricity or fossil fuels, solar daylighting devices, solar indoor space heaters that replace electricity or fossil fuels, water use neutral solar air conditioners, small new hydropower generators (10,000 kW or less), customer sited biogas or biomass generators and fuel cells that only use renewable fuels.

“Renewable fuels” for the purposes of this rule are defined as fuels that are derived from feedstocks that are not fossil fuels and that are produced by renewable energy resources rather than by conventional or fossil-fueled derived electricity or energy.

“Solar daylighting” means a device specifically designed to capture and redirect the visible portion of the solar beam, while controlling the infrared portion, for use in illuminating interior building spaces in lieu of artificial lighting.

“Water Use Neutral” means that a solar air conditioning system shall consume no more water annually than an equivalent electric powered air conditioner would consume annually.

B. The portfolio percentage shall increase after December 31, 2000.

1. Starting January 1, 2001, the renewable energy portfolio percentage of retail electric energy sold shall increase annually and shall be set according to the following schedule:

YEAR	PORTFOLIO %	SOLAR ELECTRIC %	DISTRIBUTED ENERGY %	PURCHASED ENERGY %
2001	.2%	50%	0%	0%
2002	.4%	50%	0%	0%
2003	.6%	50%	0%	0%
2004	.8%	60%	0%	0%
2005	1.0%	15%	0%	0%
2006	1.25%	15%	10%	10%
2007	1.50%	15%	15%	15%
2008	1.75%	16%	20%	20%
2009	2.00%	17%	25%	30%
2010	2.50%	18%	25%	40%
2011	3.00%	19%	25%	40%
2012	3.50%	20%	25%	40%
2013	4.00%	20%	25%	40%
2014	4.50%	20%	25%	40%
2015	5.00%	20%	25%	40%
2016	6.00%	20%	25%	40%
2017	7.00%	20%	25%	40%
2018	8.00%	20%	25%	40%
2019	9.00%	20%	25%	40%
2020	10.00%	20%	25%	40%
2021	11.00%	20%	25%	40%
2022	12.00%	20%	25%	40%
2023	13.00%	20%	25%	40%
2024	14.00%	20%	25%	40%
2025 and future years:	15.00%	20%	25%	40%

2. A minimum percentage of the annual renewable energy portfolio shall be met by solar electric generation as set in the schedule above.

3. A minimum percentage of the annual renewable energy portfolio shall be met by Distributed Renewable Energy Resources as set in the schedule above. An ESP may request a waiver or modification of the minimum distributed renewable energy resources percentage if an inadequate supply of distributed renewable energy resource credits are available from the Uniform EPS Credit Purchase Program and equivalent credits are available elsewhere. Solar electric generation which also meets the definition of Distributed Renewable Energy Resources will be eligible to meet both the Solar Electric Generation portfolio percentage requirements and the Distributed Renewable Energy Resource portfolio percentage requirements. However, for purpose of meeting the overall renewable energy portfolio requirements for total renewable energy

produced, the energy derived credits from Distributed Renewable Energy Resources will only be accounted for once toward the total renewable energy produced in a given year. The annual distributed renewable energy resource portfolio percentage shall be zero until the Commission has approved the Uniform EPS Credit Purchase Program. EPS funds reserved by a UDC or an ESP but not used in a given calendar year for support of the Distributed Renewable Energy Resource portfolio percentage requirement can be used for the purpose of meeting any portion of the EPS program in subsequent years.

4. A minimum percentage of the annual renewable energy portfolio shall be met by purchased renewable energy resources as set forth in the schedule above. Those purchases shall result from a public open bid or Request for Proposals (RFP) process resulting in a Renewable Energy Power Purchase Agreement (REPPA). REPPAs initiated prior to January 1, 2006 shall also qualify to be used to meet this PPA goal. RFPs shall allow bidders to bid for supplying energy only, without the requirement to provide firm capacity or to "firm" renewable capacity offered. The avoided cost of developing equivalent renewable resources from internal UDC or ESP sources will be considered when evaluating bids for purchased power to meet this minimum percentage. REPPAs entered into shall be no more costly on a levelized cost per MWh basis than 150% of the reasonably estimated market price of conventional resource alternatives. Renewable resources acquired through a competitive solicitation or RFPs shall be subjected to the Commission's customary prudence review. The fact that the cost of the renewable resources acquired to meet the EPS exceeds market price shall not, in and of itself, render such purchases imprudent. A UDC or an ESP may request a waiver or modification of the minimum purchased power portfolio percentage if an inadequate amount of purchased power is available to meet the minimum purchased power portfolio percentage. Solar electric generation which also meets the definition of Purchased Renewable Energy will be eligible to meet both the Solar Electric Generation portfolio percentage requirements and the Purchased Renewable Energy portfolio percentage requirements. Distributed Renewable Energy Resources which also meet the definition of Purchased Renewable Energy will be eligible to meet both the Distributed Renewable Energy Resources portfolio percentage requirements and the Purchased Renewable Energy portfolio percentage requirements. However, for purpose of meeting the overall renewable energy portfolio requirements for total renewable energy produced, the energy derived credits from Purchased Renewable Energy will only be accounted for once toward the total renewable energy purchased in given year.

C. Load-Serving Entities shall be eligible for a number of extra credit multipliers that may be used to meet the portfolio standard requirements. Extra credits may be used to meet portfolio requirements and extra credits from solar electric generation technologies will also count toward the solar electric fraction requirements in R14-2-1618(B)(2). With the exception of the Early Installation Extra Credit Multiplier, which has a five-year life from operational start-up, all other extra credit multipliers are valid for the life of the generating equipment.

1. Early Installation Extra Credit Multiplier: For new solar electric systems installed and operating prior to December 31, 2003, Load-Serving Entities would qualify for multiple extra credits for kWh produced for five years following operational start-up of the solar electric system. The five-year extra credit would vary depending upon the year in which the system started up, as follows:

YEAR EXTRA CREDIT MULTIPLIER

1997	.5
1998	.5
1999	.5
2000	.4
2001	.3
2002	.2
2003	.1

Eligibility to qualify for the Early Installation Extra Credit Multiplier would end in 2003. However, any eligible system that was operational in 2003 or before would still be allowed the applicable extra credit for the full five years after operational start-up.

2. Solar Economic Development Extra Credit Multipliers: There are two equal parts to this multiplier, an in-state installation credit and an in-state content multiplier.
  - a. In-State Power Plant Installation Extra Credit Multiplier: Solar electric power plants installed in Arizona shall receive a .5 extra credit multiplier.
  - b. In-State Manufacturing and Installation Content Extra Credit Multiplier: Solar electric power plants shall receive up to a .5 extra credit multiplier related to the manufacturing and installation content that comes from Arizona. The percentage of Arizona content of the total installed plant cost shall be multiplied by .5 to determine the appropriate extra credit multiplier. So, for instance, if a solar installation included 80% Arizona content, the resulting extra credit multiplier would be .4 (which is .8 X .5).
3. Distributed Solar Electric Generator and Solar Incentive Program Extra Credit Multiplier: Any distributed solar electric generator that meets more than one of the eligibility conditions will be limited to only one .5 extra

credit multiplier from this subsection. Appropriate meters will be attached to each solar electric generator and read at least once annually to verify solar performance.

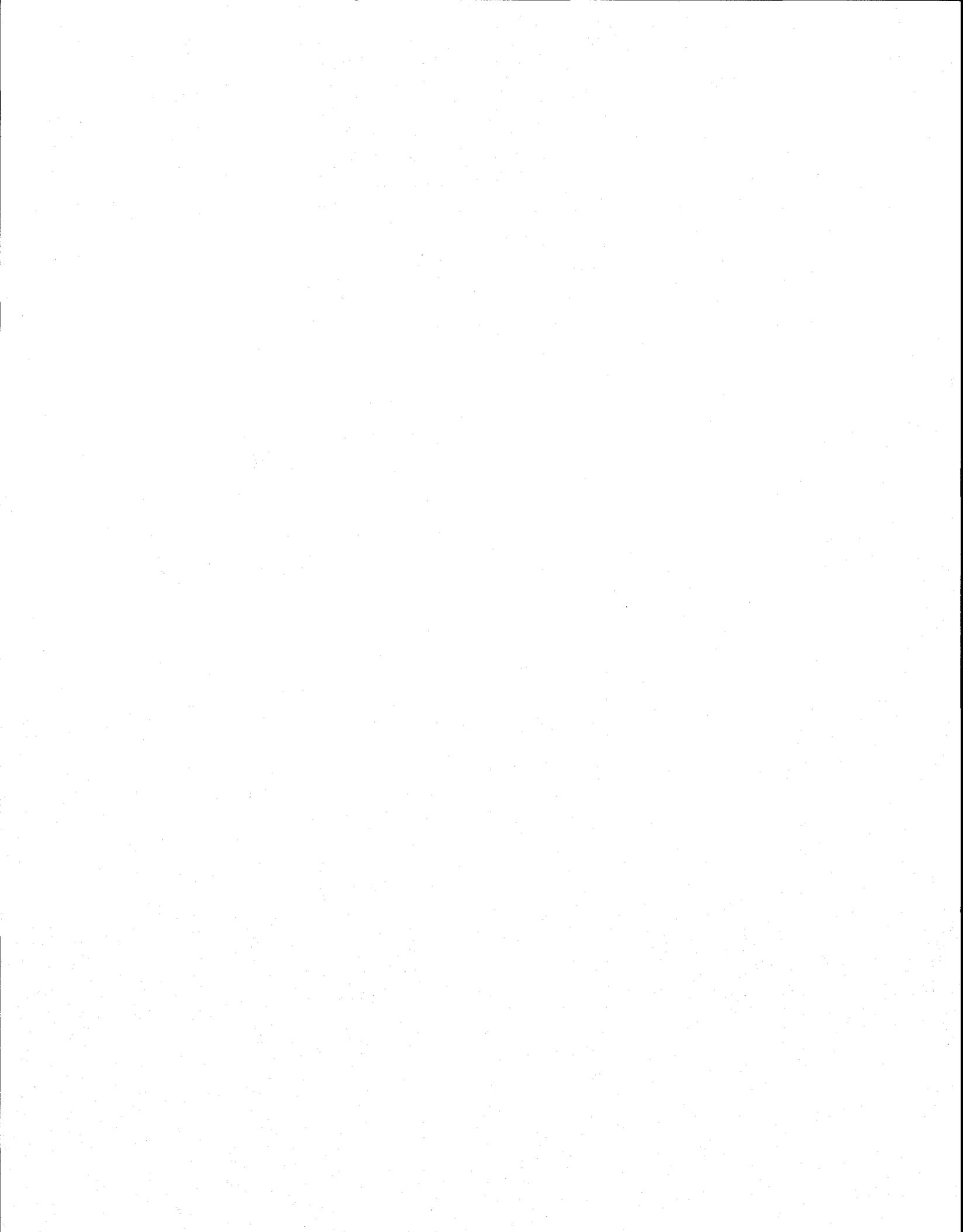
- a. Solar electric generators installed at or on the customer premises in Arizona. Eligible customer premises locations will include both grid-connected and remote, non-grid-connected locations.
  - b. Solar electric generators located in Arizona that are included in any Load-Serving Entity's Green Pricing program.
  - c. Solar electric generators located in Arizona that are included in any Load-Serving Entity's Net Metering or Net Billing program.
  - d. Solar electric generators located in Arizona that are included in any Load-Serving Entity's solar leasing program.
  - e. All Green Pricing, Net Metering, Net Billing, and Solar Leasing programs must have been reviewed and approved by the Director, Utilities Division in order for the Load-Serving Entity to accrue extra credit multipliers from this subsection.
4. All multipliers are additive, allowing a maximum combined extra credit multiplier of 2.0 in all years after 2000, for equipment installed and manufactured in Arizona and either installed at customer premises or participating in an approved solar incentive programs. So, if a Load-Serving Entity qualifies for a 2.0 extra credit multiplier and it produces 1 solar kWh, the Load-Serving Entity would get credit for 3 solar kWh (1 produced plus 2 extra credit).
- D. Load-Serving Entities selling electricity under the provisions of this Article shall provide reports on sales and portfolio power as required in this Article, clearly demonstrating the output of portfolio resources, the installation date of portfolio resources, and the transmission of energy from those portfolio resources to Arizona consumers. The Commission may conduct necessary monitoring to ensure the accuracy of these data. Reports shall be made according to the Reporting Schedule in R14-2-1613(B).
- E. Staff has developed and presented for approval of the Commission a Uniform EPS Credit Purchase Program which has an effective date no earlier than January 1, 2006. Affected Utilities with Commission approved rate adjustment mechanisms to recover expenses incurred in purchasing or generating renewable electricity, including the cost of firming intermittent renewable electric or energy resources will adopt and offer the Uniform EPS Credit Purchase Program no later than January 1, 2007. Affected Utilities without Commission approved rate adjustment mechanisms to recover expenses incurred in purchasing or generating renewable electricity, including the cost of firming intermittent renewable electric or energy resources will adopt and offer the Uniform EPS Credit Purchase Program no later than 90 days after their rate adjustment mechanism is Commission approved.
- F. Any solar electric generators installed by an Affected Utility to meet the environmental portfolio standard shall be counted toward meeting renewable resource goals for Affected Utilities established in Decision No. 58643.
- G. Any Load-Serving Entity that produces or purchases any eligible kWh in excess of its annual portfolio requirements may save or bank those excess kWh for use or sale in future years. Any eligible kWh produced subject to this rule may be sold or traded to any Load-Serving Entity that is subject to this rule. Appropriate documentation, subject to Commission review, shall be given to the purchasing entity and shall be referenced in the reports of the Load-Serving Entity that is using the purchased kWh to meet its portfolio requirements.
- H. Environmental Portfolio Standard requirements shall be calculated on an annual basis, based upon retail electricity sold during the calendar year.
- I. A Load-Serving Entity shall be entitled to receive a partial credit against the portfolio requirement if the Load-Serving Entity or its affiliate owns or makes a significant investment in any solar electric manufacturing plant that is located in Arizona. The credit will be equal to the amount of the nameplate capacity of the solar electric generators produced in Arizona and sold in a calendar year times 2,190 hours (approximating a 25% capacity factor).
1. The credit against the portfolio requirement shall be limited to the following percentages of the total portfolio requirement:
    - 2001: Maximum of 50% of the portfolio requirement
    - 2002: Maximum of 25% of the portfolio requirement
    - 2003 and on: Maximum of 20% of the portfolio requirement
  2. No extra credit multipliers will be allowed for this credit. In order to avoid double-counting of the same equipment, solar electric generators that are used by other Load-Serving Entities to meet their Arizona portfolio requirements will not be allowable for credits under this Section for the manufacturer/Electric Service Provider to meet its portfolio requirements.
- J. The Director, Utilities Division shall develop appropriate safety, durability, reliability, and performance standards necessary for solar generating equipment, Distributed Renewable Energy Resources and environmentally-friendly renewable electricity technologies to qualify for use in meeting the portfolio standard percentages. Standards requirements will apply only to facilities constructed or acquired after the standards are publicly issued.
- K. A Load-Serving Entity shall be entitled to meet any portion of the portfolio percentage with Distributed Renewable Energy Resources that either produce renewable electricity or replace the need for use of conventional electricity or fossil fuel energy resources that shall also meet the requirements of R14-2-1618(C)(3). For the purposes of this rule, solar water heaters and solar indoor space heating systems will be credited with 1 kWh of electricity

produced for each metered 3,415 British Thermal Units of heat produced by the solar water heater or solar indoor space heater. Formula derived energy valuation methods using annual energy production certifications from accredited testing agencies or Commission staff may also be used to determine the energy output of residential off grid and grid tied solar electric, solar hot water and solar indoor space heating systems. Solar air conditioners, if water use neutral, shall be credited with kWhs equivalent to those needed using a SEER 15 rated electric air conditioner to produce a comparable cooling effect. Distributed Renewable Energy Resources shall be eligible for Early Installation Extra Credit Multipliers as defined in R14-2-1618(C)(1) and Solar Economic Development Extra Credit Multipliers as defined in R14-2-1618(C)(2)(b). Commission Staff shall approve with submittal of appropriate supporting evidence future renewable energy resources to qualify as Distributed Renewable Energy Resources that are not listed above.

- L. A Load-Serving Entity shall be entitled to meet all renewable energy portfolio requirements with technologies that will produce electricity or replace the need for use of conventional electricity or fossil fuel energy sources by in-state landfill gas generators, wind generators, geothermal sourced electric generators and Arizona sourced biomass and biogas generators, consistent with the phase-in schedule in R14-2-1618(B)(3). Systems using such technologies shall be eligible for Early Installation Extra Credit Multipliers as defined in R14-2-1618(C)(1) and Solar Economic Development Extra Credit Multipliers as defined in R14-2-1618(C)(2)(b). Commission Staff shall recommend to the Commission for approval, with submittal of appropriate supporting evidence, future renewable energy resources to qualify as environmentally friendly renewable electric technologies that are not listed above.

#### **Historical Note**

Adopted by an emergency action effective August 10, 1998, pursuant to A.R.S. § 41-1026, in effect for a maximum of 180 days (Supp. 98-3). Emergency adoption replaced by exempt permanent adoption effective December 31, 1998 (Supp. 98-4). Section R14-2-1618 renumbered to R14-2-1617 by exempt rulemaking at 5 A.A.R. 3933, effective September 24, 1999 (Supp. 99-3). New Section adopted by exempt rulemaking at 7 A.A.R. 1661, effective March 20, 2001 (Supp. 01-1).



RED-LINED  
VERSION  
OF R14-2-1618

#### **R14-2-1618. Environmental Portfolio Standard**

- A. Upon the effective implementation of a Commission-approved Environmental Portfolio Standard Surcharge tariff, any Load-Serving Entity selling electricity or aggregating customers for the purpose of selling electricity under the provisions of this Article must derive at least .2% of the total retail energy sold from new solar electric resources, distributed renewable energy resources or environmentally-friendly renewable electric resources, whether that energy is purchased or generated by the seller. Solar electric resources include photovoltaic resources and solar thermal resources that generate electricity. New solar electric resources, distributed renewable energy resources, and environmentally-friendly renewable electric technologies are those installed on or after January 1, 1997.
1. Electric Service Providers, that are not UDCs, are exempt from portfolio requirements until 2004, but could voluntarily elect to participate. ESPs choosing to participate would receive a pro rata share of funds collected from the Environmental Portfolio Surcharge delineated in R14-2-1618.A.2 for portfolio purposes to acquire eligible portfolio systems or electricity generated from such systems.
  2. Utility Distribution Companies would recover part of the costs of the portfolio standard through current System Benefits Charges as approved by the Commission. Additional Portfolio standard costs will be recovered by a customer Environmental Portfolio Surcharge on the customers' monthly bill. The Environmental Portfolio Surcharge shall be assessed monthly to every metered and/or non-metered retail electric service. This monthly assessment will be the lesser of \$0.00250875 per kWh or:
    - a. Residential Customers: \$12.00 per service,
    - b. Non-Residential Customers: \$37.5075.00 per service,
    - c. Non-Residential Customers whose metered demand is 3,000 kW or more for three consecutive months: \$112.00220.00 per service. In the case of unmetered services, the Load-Serving Entity shall, for purposes of billing the Environmental Portfolio Standard Surcharge and subject to the caps set forth above, use the lesser of (i) the load profile or otherwise estimated kWh required to provide the service in question; or (ii) the service's contract kWh.
  3. Customer bills shall reflect a line item entitled "Environmental Portfolio Surcharge, mandated by the Corporation Commission."
  4. Utility Distribution Companies or ESPs that do not currently have a renewables program may request a waiver or modification of this Section due to extreme circumstances that may exist.
  5. Utility Distribution Companies (UDC) may propose rate adjustment mechanisms during rate cases to recover expenses incurred in meeting the EPS goals including but not limited to purchasing or generating the renewable electricity, distributed renewable energy resources, and/or renewable energy credits required to meet the portfolio percentages, that are in excess of the revenues received through the Environmental Portfolio Surcharge and System Benefit Charge, including, but not limited to, the cost of firming intermittent renewable electric or energy resources. Until such rate adjustment mechanisms are approved by the Commission, only the minimum solar electric portfolio annual percentage requirements shall be applicable.
  6. All renewable electricity and energy used to meet portfolio percentages must be produced in and delivered to customers in Arizona. An Affected utility may request a waiver of this provision if in state renewable energy resources are not available at an acceptable cost.
  7. The Commission staff shall review the progress towards meeting the and appropriate minimum portfolio percentages of solar electricity, Distributed Renewable Energy Resources and competitively purchased energy in 2010~~08~~, 2014~~2~~, 2018~~6~~ and 2020~~2022~~. The Director, Utilities Division shall establish, not later than January 1, of the year prior to the review year, an Environmental Portfolio Standard Evaluation Working Group to make recommendations to the Commission of changes to the Environmental Portfolio Standard to improve the production of renewable energy resources at the lowest acceptable premium cost. The recommendations of the Working Group shall be presented to the Commission not later than December 31 of the year prior to the review year.
  8. Definitions:

"Biogas electricity generation" derives its energy from gases produced from plant-derived organic matter, agricultural food and feed matter, woodwastes, aquatic plants, animal wastes, vegetative wastes, wastewater treatment facilities via anaerobic digestion or other processes. Municipal solid waste that produces gas through a digester or gasification process would also be considered to be biogas.

"Biomass" is defined as 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, aquatic plants, animal wastes and other vegetative waste materials.

"Distributed Renewable Energy Resources" are those resources that are located at utility customer premises that either produce renewable electricity or replace the need for use of conventional electricity or fossil fuel energy resources. The technologies considered eligible as distributed renewable energy resources are: solar electric generators, small-scale wind generators (10 kW or less), solar water heaters that replace electricity or fossil fuels, solar daylighting devices, solar indoor space heaters that replace electricity or fossil fuels, water

use neutral solar air conditioners, small new hydropower generators (10,000 kW or less), customer sited biogas or biomass generators and fuel cells that only use renewable fuels.

“Renewable fuels” for the purposes of this rule are defined as fuels that are derived from feedstocks that are not fossil fuels and that are produced by renewable energy resources rather than by conventional or fossil-fueled derived electricity or energy.

“Solar daylighting” means a device specifically designed to capture and redirect the visible portion of the solar beam, while controlling the infrared portion, for use in illuminating interior building spaces in lieu of artificial lighting.

“Water Use Neutral” means that a solar air conditioning system shall consume no more water annually than an equivalent electric powered air conditioner would consume annually.

B. The portfolio percentage shall increase after December 31, 2000.

1. Starting January 1, 2001, the renewable energy portfolio percentage of retail electric energy sold shall increase annually and shall be set according to the following schedule:

YEAR	PORTFOLIO %	SOLAR ELECTRIC %	DISTRIBUTED ENERGY %	PURCHASED ENERGY %
2001	.2%	50%	0%	0%
2002	.4%	50%	0%	0%
2003	.6%	50%	0%	0%
2004	.8%	60%	0%	0%
2005	1.0%	15%	0%	0%
2006	1.25%	15%	10%	10%
2007	1.50%	15%	15%	15%
2008	1.75%	16%	20%	20%
2009	2.00%	17%	25%	30%
2010	2.50%	18%	25%	40%
2011	3.00%	19%	25%	40%
2012	3.50%	20%	25%	40%
2013	4.00%	20%	25%	40%
2014	4.50%	20%	25%	40%
2015	5.00%	20%	25%	40%
2016	6.00%	20%	25%	40%
2017	7.00%	20%	25%	40%
2018	8.00%	20%	25%	40%
2019	9.00%	20%	25%	40%
2020	10.00%	20%	25%	40%
2021	11.00%	20%	25%	40%
2022	12.00%	20%	25%	40%
2023	13.00%	20%	25%	40%
2024	14.00%	20%	25%	40%
2025 and future years:	15.00%	20%	25%	40%

2. A minimum percentage of the annual renewable energy portfolio shall be met by solar electric generation as set in the schedule above.

3. A minimum percentage of the annual renewable energy portfolio shall be met by Distributed Renewable Energy Resources as set in the schedule above. An ESP may request a waiver or modification of the minimum distributed renewable energy resources percentage if an inadequate supply of distributed renewable energy resource credits are available from the Uniform EPS Credit Purchase Program and equivalent credits are

available elsewhere. Solar electric generation which also meets the definition of Distributed Renewable Energy Resources will be eligible to meet both the Solar Electric Generation portfolio percentage requirements and the Distributed Renewable Energy Resource portfolio percentage requirements. However, for purpose of meeting the overall renewable energy portfolio requirements for total renewable energy produced, the energy derived credits from Distributed Renewable Energy Resources will only be accounted for once toward the total renewable energy produced in a given year. The annual distributed renewable energy resource portfolio percentage shall be zero until the Commission has approved the Uniform EPS Credit Purchase Program. EPS funds reserved by a UDC or an ESP but not used in a given calendar year for support of the Distributed Renewable Energy Resource portfolio percentage requirement can be used for the purpose of meeting any portion of the EPS program in subsequent years.

4. A minimum percentage of the annual renewable energy portfolio shall be met by purchased renewable energy resources as set forth in the schedule above. Those purchases shall result from a public open bid or Request for Proposals (RFP) process resulting in a Renewable Energy Power Purchase Agreement (REPPA). REPPAs initiated prior to January 1, 2006 shall also qualify to be used to meet this PPA goal. RFPs shall allow bidders to bid for supplying energy only, without the requirement to provide firm capacity or to "firm" renewable capacity offered. The avoided cost of developing equivalent renewable resources from internal UDC or ESP sources will be considered when evaluating bids for purchased power to meet this minimum percentage. REPPAs entered into shall be no more costly on a levelized cost per MWh basis than 150% of the reasonably estimated market price of conventional resource alternatives. Renewable resources acquired through a competitive solicitation or RFPs shall be subjected to the Commission's customary prudence review. The fact that the cost of the renewable resources acquired to meet the EPS exceeds market price shall not, in and of itself, render such purchases imprudent. A UDC or an ESP may request a waiver or modification of the minimum purchased power portfolio percentage if an inadequate amount of purchased power is available to meet the minimum purchased power portfolio percentage. Solar electric generation which also meets the definition of Purchased Renewable Energy will be eligible to meet both the Solar Electric Generation portfolio percentage requirements and the Purchased Renewable Energy portfolio percentage requirements. Distributed Renewable Energy Resources which also meet the definition of Purchased Renewable Energy will be eligible to meet both the Distributed Renewable Energy Resources percentage portfolio requirements and the Purchased Renewable Energy portfolio percentage requirements. However, for purpose of meeting the overall renewable energy portfolio requirements for total renewable energy produced, the energy derived credits from Purchased Renewable Energy will only be accounted for once toward the total renewable energy purchased in given year.

C. Load-Serving Entities shall be eligible for a number of extra credit multipliers that may be used to meet the portfolio standard requirements. Extra credits may be used to meet portfolio requirements and extra credits from solar electric generation technologies will also count toward the solar electric fraction requirements in R14-2-1618(B)(2). With the exception of the Early Installation Extra Credit Multiplier, which has a five-year life from operational start-up, all other extra credit multipliers are valid for the life of the generating equipment.

1. Early Installation Extra Credit Multiplier: For new solar electric systems installed and operating prior to December 31, 2003, Load-Serving Entities would qualify for multiple extra credits for kWh produced for five years following operational start-up of the solar electric system. The five-year extra credit would vary depending upon the year in which the system started up, as follows:

YEAR EXTRA CREDIT MULTIPLIER

1997	.5
1998	.5
1999	.5
2000	.4
2001	.3
2002	.2
2003	.1

Eligibility to qualify for the Early Installation Extra Credit Multiplier would end in 2003. However, any eligible system that was operational in 2003 or before would still be allowed the applicable extra credit for the full five years after operational start-up.

2. Solar Economic Development Extra Credit Multipliers: There are two equal parts to this multiplier, an in-state installation credit and an in-state content multiplier.
  - a. In-State Power Plant Installation Extra Credit Multiplier: Solar electric power plants installed in Arizona shall receive a .5 extra credit multiplier.
  - b. In-State Manufacturing and Installation Content Extra Credit Multiplier: Solar electric power plants shall receive up to a .5 extra credit multiplier related to the manufacturing and installation content that comes from Arizona. The percentage of Arizona content of the total installed plant cost shall be multiplied by

- .5 to determine the appropriate extra credit multiplier. So, for instance, if a solar installation included 80% Arizona content, the resulting extra credit multiplier would be .4 (which is  $.8 \times .5$ ).
3. Distributed Solar Electric Generator and Solar Incentive Program Extra Credit Multiplier: Any distributed solar electric generator that meets more than one of the eligibility conditions will be limited to only one .5 extra credit multiplier from this subsection. Appropriate meters will be attached to each solar electric generator and read at least once annually to verify solar performance.
- Solar electric generators installed at or on the customer premises in Arizona. Eligible customer premises locations will include both grid-connected and remote, non-grid-connected locations.
  - Solar electric generators located in Arizona that are included in any Load-Serving Entity's Green Pricing program.
  - Solar electric generators located in Arizona that are included in any Load-Serving Entity's Net Metering or Net Billing program.
  - Solar electric generators located in Arizona that are included in any Load-Serving Entity's solar leasing program.
  - All Green Pricing, Net Metering, Net Billing, and Solar Leasing programs must have been reviewed and approved by the Director, Utilities Division in order for the Load-Serving Entity to accrue extra credit multipliers from this subsection.
4. All multipliers are additive, allowing a maximum combined extra credit multiplier of 2.0 in all years after 2000, for equipment installed and manufactured in Arizona and either installed at customer premises or participating in an approved solar incentive programs. So, if a Load-Serving Entity qualifies for a 2.0 extra credit multiplier and it produces 1 solar kWh, the Load-Serving Entity would get credit for 3 solar kWh (1 produced plus 2 extra credit).
- D. Load-Serving Entities selling electricity under the provisions of this Article shall provide reports on sales and portfolio power as required in this Article, clearly demonstrating the output of portfolio resources, the installation date of portfolio resources, and the transmission of energy from those portfolio resources to Arizona consumers. The Commission may conduct necessary monitoring to ensure the accuracy of these data. Reports shall be made according to the Reporting Schedule in R14-2-1613(B).
- E. Staff ~~has is to developed~~ and ~~presented~~ for approval of the Commission a Uniform EPS Credit Purchase Program which ~~when Commission approved will have~~ an effective date no earlier than January 1, 2006. ~~Staff will encourage public input in the development of this program.~~ Affected Utilities with Commission approved rate adjustment mechanisms to recover expenses incurred in purchasing or generating renewable electricity, including the cost of firming intermittent renewable electric or energy resources will adopt and offer the Uniform EPS Credit Purchase Program no later than January 1, 2007. Affected Utilities without Commission approved rate adjustment mechanisms to recover expenses incurred in purchasing or generating renewable electricity, including the cost of firming intermittent renewable electric or energy resources will adopt and offer the Uniform EPS Credit Purchase Program no later than 90 days after their rate adjustment mechanism is Commission approved.
- F. Any solar electric generators installed by an Affected Utility to meet the environmental portfolio standard shall be counted toward meeting renewable resource goals for Affected Utilities established in Decision No. 58643.
- G. Any Load-Serving Entity that produces or purchases any eligible kWh in excess of its annual portfolio requirements may save or bank those excess kWh for use or sale in future years. Any eligible kWh produced subject to this rule may be sold or traded to any Load-Serving Entity that is subject to this rule. Appropriate documentation, subject to Commission review, shall be given to the purchasing entity and shall be referenced in the reports of the Load-Serving Entity that is using the purchased kWh to meet its portfolio requirements.
- H. Environmental Portfolio Standard requirements shall be calculated on an annual basis, based upon retail electricity sold during the calendar year.
- I. A Load-Serving Entity shall be entitled to receive a partial credit against the portfolio requirement if the Load-Serving Entity or its affiliate owns or makes a significant investment in any solar electric manufacturing plant that is located in Arizona. The credit will be equal to the amount of the nameplate capacity of the solar electric generators produced in Arizona and sold in a calendar year times 2,190 hours (approximating a 25% capacity factor).
- The credit against the portfolio requirement shall be limited to the following percentages of the total portfolio requirement:  
2001: Maximum of 50% of the portfolio requirement  
2002: Maximum of 25% of the portfolio requirement  
2003 and on: Maximum of 20% of the portfolio requirement
  - No extra credit multipliers will be allowed for this credit. In order to avoid double-counting of the same equipment, solar electric generators that are used by other Load-Serving Entities to meet their Arizona portfolio requirements will not be allowable for credits under this Section for the manufacturer/Electric Service Provider to meet its portfolio requirements.
- J. The Director, Utilities Division shall develop appropriate safety, durability, reliability, and performance standards necessary for solar generating equipment, Distributed Renewable Energy Resources and environmentally-friendly

renewable electricity technologies to qualify for use in meeting the portfolio standard percentages. Standards requirements will apply only to facilities constructed or acquired after the standards are publicly issued.

- K. A Load-Serving Entity shall be entitled to meet any portion of the portfolio percentage with Distributed Renewable Energy Resources. ~~Distributed Renewable Energy Resources are those resources that are located at utility customer premises that either produce renewable electricity or replace the need for use of conventional electricity or fossil fuel energy resources that shall also meet the requirements of R14-2-1618(C)(3).~~ For the purposes of this rule, solar water heaters and solar indoor space heating systems will be credited with 1 kWh of electricity produced for each metered 3,415 British Thermal Units of heat produced by the solar water heater or solar indoor space heater. Formula derived energy valuation methods using annual energy production certifications from accredited testing agencies or Commission staff may also be used to determine the energy output of residential off grid and grid tied solar electric, solar hot water and solar indoor space heating systems. Solar air conditioners, if water use neutral, shall be credited with kWhs equivalent to those needed using a SEER 15 rated electric air conditioner to produce a comparable cooling effect. Distributed Renewable Energy Resources shall be eligible for Early Installation Extra Credit Multipliers as defined in R14-2-1618(C)(1) and Solar Economic Development Extra Credit Multipliers as defined in R14-2-1618(C)(2)(b). ~~Commission Staff shall approve with submittal of appropriate supporting evidence future renewable energy resources to qualify as Distributed Renewable Energy Resources that are not listed above.~~
- L. A Load-Serving Entity shall be entitled to meet all renewable energy portfolio requirements with technologies that will produce electricity or replace the need for use of conventional electricity or fossil fuel energy sources by produced in Arizona by in-state landfill gas generators, wind generators, geothermal sourced electric generators and Arizona sourced biomass and biogas generators, consistent with the phase-in schedule in R14-2-1618(B)(3). Systems using such technologies shall be eligible for Early Installation Extra Credit Multipliers as defined in R14-2-1618(C)(1) and Solar Economic Development Extra Credit Multipliers as defined in R14-2-1618(C)(2)(b). Commission Staff shall recommend to the Commission for approval, with submittal of appropriate supporting evidence, future renewable energy resources to qualify as environmentally friendly renewable electric technologies that are not listed above.

#### Historical Note

Adopted by an emergency action effective August 10, 1998, pursuant to A.R.S. § 41-1026, in effect for a maximum of 180 days (Supp. 98-3). Emergency adoption replaced by exempt permanent adoption effective December 31, 1998 (Supp. 98-4). Section R14-2-1618 renumbered to R14-2-1617 by exempt rulemaking at 5 A.A.R. 3933, effective September 24, 1999 (Supp. 99-3). New Section adopted by exempt rulemaking at 7 A.A.R. 1661, effective March 20, 2001 (Supp. 01-1).