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March 22, 2000

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Re: Docket No. E-0000A-99-0205

Enclosed please find the original plus ten copies of the JOINT BRIEF OF THE ENVIRONMENTAL INTERVENORS AND ACEIA, this is an attachment to the BRIEF OF THE ENVIRONMENTAL INTERVENORS REGARDING EXCEPTIONS TO THE RECOMMENDED DECISION OF THE HEARING OFFICER filed on March 22, 2000.

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Sincerely,

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Jon Wellinghoff,
Attorney for the Environmental Intervenors



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BEFORE THE ARIZONA CORPORATION COMMISSION

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CARL J. KUNASEK
Chairman
JIM IRVIN
Commissioner
WILLIAM MUNDELL
Commissioner

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IN THE MATTER OF THE GENERIC) DOCKET NO. E-00000A-99-0205
INVESTIGATION OF THE DEVELOPMENT)
OF A RENEWABLE PORTFOLIO STANDARD) JOINT BRIEF OF THE
AS A POTENTIAL PART OF THE RETAIL) ENVIRONMENTAL
ELECTRIC COMPETITION RULES) INTERVENORS AND
ACEIA

The Land and Water Fund of the Rockies ("LAW Fund"), the Grand Canyon Trust, and the Grand Canyon Chapter of the Sierra Club (hereinafter referred to as the "Environmental Intervenors" or "EI") and the Arizona Clean Energy Industries Alliance (hereinafter referred to as "ACEIA") file a Joint Brief in the above-captioned matter.

I. SUMMARY

The Environmental Intervenors and ACEIA jointly urge the Commission to adopt the Solar and Environmentally-friendly Portfolio Standard (SEFPS), originally proposed by Chairman Kunasek in April of this year, with several minor modifications. These modifications address some of the key concerns raised by the utility intervenors and others in this proceeding and include a funding mechanism, a smoothing of the ramp-up of the portfolio percentages, and several items of an administrative nature.

1 ACEIA is an alliance of forty private national and local companies involved in
2 manufacturing, installing and marketing of photovoltaic, solar thermal and other solar
3 and renewable energy products and services. ACEIA's goal is to invest in Arizona
4 because it believes that Arizona's favorable business climate, abundant sunshine, and
5 proximity to Mexico create vast opportunities for solar related industries to locate and
6 expand their operations here.
7

8 II. BACKGROUND

9 A. HISTORY OF THE ENVIRONMENTAL PORTFOLIO STANDARD

10 These proceedings are the culmination of four years of effort on the part of this
11 Commission and the key parties presently involved, including ourselves. However,
12 even prior to the adoption of the December 26, 1996 Electric Competition Rules, the
13 1993 IRP established renewable resource goals for the major utilities subject to the
14 jurisdiction of this Commission. To date, APS has achieved less than 0.5MW of its
15 12MW goal, and TEP has just this summer brought on line a landfill gas supplemental
16 fuel resource to an existing power plant to meet its 5MW obligation. This is not
17 intended to be an indictment of the utilities, but rather the program and its inherent lack
18 of incentives.
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22 To work out the details of implementing the portfolio standard that was part of
23 the original Rules, the Commission established the Unbundling and Standard Offer
24 Working Group. The Solar Portfolio Standard Subcommittee to this working group
25 included representatives of the Commission Staff, the Governor's office, large and
26

1 On May 17 and June 9, respectively, APS and TEP filed settlement agreements
2 with the Commission. These rate settlement agreements provided for recovery of
3 stranded costs and schedules of rate reductions over the next five (APS) to eight (TEP)
4 years. The SEFPS docket was open for four weeks prior to the filing of the APS
5 settlement and over seven weeks prior to the TEP filing. Thus, the parties to the APS
6 and TEP rate settlement agreements were clearly aware that the portfolio standard issue
7 was outstanding. Indeed, in Decision No. 61973 reviewing the APS rate settlement, the
8 Commission conditioned approval of the agreement on changing language that it felt
9 was too restrictive on its future actions. The following paragraph was added:
10
11

12 Neither the Commission nor APS shall be prevented from seeking or
13 authorizing a change in unbundled or Standard Offer rates prior to July 1,
14 2004, in the event of (a) conditions or circumstances which constitute an
15 emergency, such as an inability to finance on reasonable terms, or (b)
16 material changes in APS' cost of service for Commission-regulated
17 services resulting from federal, tribal, state or local laws, regulatory
18 requirements, judicial decisions, actions or orders. Except for the changes
19 otherwise specifically contemplated by this Agreement, unbundled and
20 Standard Offer rates shall remain unchanged until at least July 1, 2004.¹

21 Identical language has been recommended by the Hearing Examiner's decision in the
22 TEP rate settlement case. Should the Commission determine that implementing the
23 portfolio standard is good public policy, then the rate settlements are not an impediment
24 to adoption of the SEFPS.

25 III. PROPOSED ENVIRONMENTAL PORTFOLIO STANDARD

26 ¹ Decision No. 61973, Opinion and Order in Docket No. E-01345A-98-0473, et al. issued October 6, 1999, at p. 8.

1 In addition, there are several changes necessary to assure consistency between
2 the solar electric portion of the standard, and other qualifying renewable resources. For
3 example, the credit banking and trading system should be applicable to each category of
4 resource. Second, solar air conditioning systems should be included with solar water
5 heating systems in Section M.
6

7 See EI and ACEIA's proposed modified SEFPS in Attachment 1. Both the
8 utilities and renewable technology suppliers of the SEFPS testified that their main
9 concern was uncertainty surrounding the SEFPS. The utilities are uncertain as to the
10 costs of renewable resources and reluctant to adopt a sales-based standard. Conversely,
11 the renewable technology suppliers are uncertain of the Arizona market, and are
12 reluctant to invest in the state without some indication of policy support from this
13 Commission. The EI and ACEIA believe the SEFPS, as modified, provides a measure
14 of certainty for both sets of parties. The SEFPS, as modified, strikes an appropriate
15 balance among utilities, customers, the renewable industry, and the economic interests
16 of Arizona. The benefits that result from its adoption will far outweigh the monetary
17 costs, with virtually all of these benefits inuring to the people of Arizona directly or
18 indirectly.
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22 **IV. BASIS FOR ADOPTION OF THE SOLAR AND ENVIRONMENTALLY-**
23 **FRIENDLY PORTFOLIO STANDARD.**

24 There are three key reasons why the Commission should adopt the SEFPS, as
25 modified. First, nearly every party to this proceeding endorses some form of
26

1 example, APS, through its existing voluntary programs, has spent over \$10 million over
2 the last three years acquiring approximately ½ MW. Clearly, past voluntary efforts
3 have not worked.

4
5 As Arizona opens the electric supply industry to competitive forces, we fear that
6 the open electricity market - driven by the largest customers - will spiral down to the
7 least expensive short-run electricity resource. The SEFPS, implemented on a
8 mandatory basis, has the potential to provide a much needed boost to the development
9 and availability of renewable resources, to satisfy customer needs, and to reduce
10 resource costs.
11

12 B. THE ENVIRONMENTAL PORTFOLIO STANDARD ACHIEVES THE
13 OBJECTIVES OF THE 1997 SUBCOMMITTEE.

14 An important context for the Commission to decide the appropriate form for the
15 SEFPS is whether the objectives of implementing the standard are satisfied. In 1997, a
16 working group and its subcommittee² established by the Commission agreed upon
17 objectives for the Solar Portfolio Standard (the precursor to the SEFPS). These remain
18 valid for the SEFPS at issue in this proceeding. They are:
19

- 20 1. Encourage the use of solar electric technologies to increase the fuel
21 diversity in the electricity generation mix.
22
23

24 ² The Solar Portfolio Standard Subcommittee included virtually all parties to the present proceeding, including the
25 solar industry, incumbent utilities and new entrant electricity suppliers, the Commission Staff, customer groups
26 (including large industrial, residential, and low-income) the non-profit environmental community, and
municipalities.

1 C. THE ENVIRONMENTAL PORTFOLIO STANDARD PROMOTES
2 ECONOMIC DEVELOPMENT IN ARIZONA.

3 The SEFPS will promote development of technologies in Arizona that capture
4 the states most prominent natural resource, the sun. The Environmental Intervenors and
5 ACEIA agree with many parties to this proceeding whom recognize that the SEFPS will
6 promote economic development in the state. For example, the Commission Utilities
7 Staff ("Staff") testifies that the implementation of the SEFPS would result in the
8 installation of "an awful lot" of solar systems in the state resulting in job growth for the
9 installation and operation of these systems. (Hearing Transcript, Volume III, Page 651).
10 Also, the Arizona Public Service Company ("APS") opined that "economic
11 development benefits can [] result from a subsidized renewable energy program.... and
12 [d]eveloping renewable technologies can create jobs for Arizonians in high-tech
13 industry with export potential. (Edward Z. Fox, Direct Testimony, Page 4). Finally, the
14 City of Tucson, Arizona's second largest city, expressed strong support for the proposed
15 Portfolio Standard citing the potential for job growth and other economic benefits for
16 Arizona cities. (See Direct Testimony, Vincent Hunt). A solid and consistent portfolio
17 standard will provide solar electric developers and manufacturers of renewable
18 technologies with the assurance they need to commit resources to manufacturing and
19 related operations. Such a policy will bring jobs to Arizona in a clean industry. The
20 first 100 MW'S of solar, just 1% of the planned fossil plant *expansion* while supporting
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1 install renewable resources in rural areas can provide jobs where they are sorely
2 needed.⁴

3 D. THE ENVIRONMENTAL PORTFOLIO STANDARD PROMOTES
4 CLEAN AIR IN ARIZONA.

5 The Environmental Intervenors and ACEIA agree with Staff that the type of
6 resources that would generally qualify under the SEFPS would produce electricity at
7 various times of day that will offset the burning of fossil fuels which could clearly
8 provide environmental benefit to the state. (See Direct Testimony of Ray Williamson
9 and Transcript, Volume III, Page 651 -652). The Environmental Intervenors and
10 ACEIA also agree with APS that the SEFPS would provide environmental benefits to
11 the state because it would advance technology that "emit no pollutants to the air or
12 water, and have lower thermal pollution impacts than other generation sources.
13 (Edward Z. Fox, Direct Testimony, Page 4). As a matter of fact, almost every party to
14 the proceeding testified that from an environmental perspective, encouraging the use of
15 renewable resources would help reduce emissions from traditional fossil fuel power
16 plants. Thus, the portfolio standard offers an opportunity to offer a long-term
17 commitment to the community to the states economic future without environmental
18 consequences. For example, a typical 2-kilowatt home-sized photovoltaic system will
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23 ³ See Hoff, Thomas, "Identifying Distributed Generation and Demand Side Management Investment
24 Opportunities," Energy Journal 17(4): 89-105 (1996); and also Farmer, Hoff, and Wenger, "Measuring the Value
25 of Distributed Photovoltaic Generation: Final Results of the Kerman Grid-Support Project," December, 1994.

26 ⁴ For example, the Yavapai-Apache Nation believes the portfolio standard creates an opportunity for tribal
economic development. In addition, a significant part of the mission of the Hopi Solar Electric Enterprise is to
provide a method for Native societies to move towards greater self-sufficiency.

1 portfolio standard can be achieved. Such tight funding will also provide incentives for
 2 creative approaches and cost minimization. If the funding level results in collection of
 3 greater revenue than needed to achieve the portfolio standard, the excess can be
 4 escrowed for future years or refunded to customers.
 5

6 The incumbent utilities have proposed various forms of system benefits charges,
 7 re-allocation of existing funding, and other voluntary funding vehicles to support the
 8 SEFPS. These amounts are summarized below:
 9

Utility	Proposed Funding	Equivalent Rate Year 2000
APS	\$ 6.0 million	0.28 mills/kWh
TEP	\$ 0.2 million*	0.03 mills/kWh
SRP	\$ 7.0 million	0.33 mills/kWh
AEPCO	\$ 0.0	0.00 mills/kWh
Citizens	\$ 0.0	0.00 mills/kWh
NEC	\$ 0.0	0.00 mills/kWh
Total	\$13.2 million	

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15 TEP did indicate a willingness to shift funding from its DSM programs
16 to support the SEFPS.

17 Clearly, these amounts are well below even the most optimistic scenario developed by
 18 Dr. Hoff. However, these funding levels have the advantage of no ratepayer impact,
 19 according to the utilities. Thus, ratepayer impact begins as we increase funding for
 20 renewable resources above these levels.
 21

22 Providing funding for the SEFPS at a rate of 0.5 mills/kWh increases financial
 23 support from the customers of each of the incumbents as follows:
 24

Utility	Equivalent Rate	Increase Required to	Residential Impact
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1 The Environmental Intervenors and ACEIA's recommendation is to maximize
2 the benefits of existing system benefits-type charges and establish a wires charge that
3 collects the difference necessary to reach a ½ mill/kWh total funding level. This is the
4 cleanest way to provide current funding, and limits future related rate activity. The
5 utilities and others may argue that the rate settlements that provide for rate decreases
6 over the next several years preclude themselves and the Commission from changing
7 rates prior to 2004 for APS and 2008 for TEP. This is simply not the case as discussed
8 above. Because individual utility circumstances vary, the additional wires charge can
9 also vary from zero to the full ½ mill.
10

11 The APS System Benefits Charge is a good model on which to base an example.
12 The SBC rate is 1.15 mills/kWh and includes nuclear decommissioning and low income
13 program funding as well as funding for renewable resources. According to APS the
14 funding breaks down as follows:⁵
15

16	Funding for low-income programs	\$ 4.7 million
17	Funding for decommissioning	10.6 million
18	<u>Funding for other programs</u>	<u>0.5 million</u>
19	Subtotal non-renewables	\$ 15.8 million
20	<u>Funding for renewable programs</u>	<u>6.0 million</u>
21	Total Funding	\$21.8 million

22	Retail Energy Sales (MWh)	18,957,939
23	System Benefits Charge	0.115¢/kWh

24
25
26 ⁵ Reference Schedule AP-5, Testimony of Alan Propper, Docket No. E-01345A-98-0173, et al.

1 This example will vary for the other utilities, depending upon what level of
2 funding is already available, growth rates, and so forth. However the point should be
3 clear that at least for APS, adequate funding can be provided without a rate change.
4

5 The Environmental Intervenors and ACEIA's recommendation with respect to
6 funding the SEFPS is to:

7 1. Require a minimum funding level of ½ mill/kWh for support of this
8 program.
9

10 2. Require each UDC to file a compliance plan that identifies the proposed
11 level of wires charge necessary to achieve the funding level of ½ mill/retail kWh, or
12 provides an alternative method of achieving a funding level of ½ mill/retail kWh.

13 A. ALTERNATIVE RATE MECHANISM PROPOSAL
14

15 In an effort to provide creative and workable alternative solutions to the funding
16 issue, another recovery method that bears a brief discussion is deferring recovery in
17 conjunction with stranded cost and regulatory asset amortization. The key advantage is
18 that the proposal requires no rate increase.
19

20 Again using APS as an example, the proposed ½ mill/kWh funding requirement
21 would accrue about \$53.8 million over the next four and one-half years. APS is
22 presently willing to fund the SEFPS with \$6 million per year collected through its SBC,
23 leaving a shortfall of \$26.8 million by July 1 of 2004. Concurrently, APS is collecting
24 approximately \$270 million annually through July 1, 2004 for regulatory assets and
25

1 the ½ mill/kWh collected from retail customers to whom it provides electricity supply
2 service to achieve the requirements of the SEFPS. Should the ESP decide not to take
3 advantage of this option, the funds would default to the applicable UDC for it to use in
4 its procurement process. This mechanism assures that ESPs are at no competitive
5 disadvantage.
6

7 In order to meet the objectives of the standard, in particular those related to
8 driving a market for renewable technologies in Arizona, we urge the Commission to
9 adopt a competitive procurement process for UDCs. ESPs are welcome to utilize this
10 process as well, however the scale of the resources to be acquired by each UDC requires
11 that an open and fair process to all potential vendors be implemented. Having said that,
12 we believe that small scale, distributed solar and environmentally-friendly installations
13 (such as the 5kW PV installation discussed in the rebuttal testimony of Vinnie Hunt
14 from the City of Tucson) should be encouraged. We are concerned that developers of
15 such systems may not have the resources to participate in a formal bidding program.
16 Thus, we propose that 10kW or smaller solar and environmentally-friendly resources be
17 allowed to contract directly with the UDC or ESP.
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21 The RFP process should be subject to the oversight of the Director of the Arizona
22 Corporation Commission's Utility Division. The Director may, at his or her discretion,
23 establish a committee comprised of knowledgeable individuals to oversee the RFP
24 process. We recommend that RFPs be issued in the first quarter of each year, so that
25
26

1 agree⁶ that it is in the best interests of all parties to smooth this growth curve, to the
2 following schedule based upon total retail sales:

<u>Year</u>	<u>% of Retail Sales</u>	<u>Year</u>	<u>% of Retail Sales</u>
2000	0.10%	2007	1.10%
2001	0.25%	2008	1.10%
2002	0.40%	2009	1.10%
2003	0.55%	2010	1.10%
2004	0.70%	2011	1.10%
2005	0.85%	2012	1.10%
2006	1.00%		

9
10 **X. OTHER PORTFOLIO STANDARD ADJUSTMENTS OF AN**
11 **ADMINISTRATIVE NATURE**

12 There are several changes necessary to assure consistency between the solar
13 electric portion of the standard, and other qualifying renewable resources. First, the
14 standard needs to be clear that Electric Service Provider includes Utility Distribution
15 Companies. This was the intent of the standard, and no party to the hearing opposed
16 this understanding. Thus the wording in Section A should be clarified to include UDCs
17 within the meaning of ESPs.

18
19 Second, solar air conditioning uses essentially the same technology as
20 contemplated in Section M of the Standard. We propose, and are under the impression
21 that no party objects, to the inclusion of solar air conditioning in Section M.

22
23 Third, Section I of the standard establishes a system of solar electric credits that
24 allow for banking and trading of generated energy. This credit banking and trading

25
26 ⁶ We understand that other parties also agree to the modified schedule of percentages.

1 Section B.2. of the SEFPS provides for a review process that, among other
2 things, looks at costs and benefits derived from the portfolio standard, and determines
3 the appropriate path for its continuance beyond 2002. As currently written, the
4 Director, Utilities Division is required to establish, not later than January 1, 2001, a
5 Solar Electricity Cost Evaluation Working Group to make recommendations to the
6 Commission. Recommendations are due to the Commission by the end of that year. By
7 this point however, only 12 months of experience will have taken place under the new
8 SEFPS. We urge the Commission to push the Working Group inception date back to
9 January 1, 2003, and tighten the schedule to have recommendations to the Commission
10 by June 30, 2003, and a Commission decision by December 31, 2003. This will provide
11 for two more years of market experience, and only a one-year delay in determining the
12 appropriate future for the SEFPS.
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16 XI. RECOMMENDATION

17 For all the reasons provided above, the Environmental Intervenors and ACEIA
18 urge the Commission to adopt the Solar and Environmentally-friendly Portfolio
19 Standard as proposed by Chairman Kunasek with the following modifications:
20

21 1. Add a new Section C that accomplishes the following:

22 (a) Requires a minimum funding level of ½ mill/retail kWh for support
23 of the SEFPS;
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1	2000	0.10%	2007	1.10%
	2001	0.25%	2008	1.10%
2	2002	0.40%	2009	1.10%
	2003	0.55%	2010	1.10%
3	2004	0.70%	2011	1.10%
	2005	0.85%	2012	1.10%
4	2006	1.00%		
5				

6 This change eliminates the need for existing Section C.

- 7 3 Clarify Section A to include UDCs within the meaning of ESPs.
- 8 4. Modify Section M of the SEFPS to include solar air conditioning as an
- 9 acceptable technology.
- 10
- 11 5. Modify Section I of the SEFPS to allow each technology group to bank,
- 12 trade, and sell generation-equivalent credits within the context of the Standard.
- 13 6. Modify Section D.1 of the SEFPS, the early installation extra credit
- 14 multiplier, to account for the delay in the start of the competitive market as follows:

<u>Year</u>	<u>Multiplier</u>	<u>Year</u>	<u>Multiplier</u>
16 1997	.5	2001	.4
17 1998	.5	2002	.3
18 1999	.5	2003	.2
19 2000	.5	2004	.1

- 20 7. Delay the establishment of, and required recommendations from, the Solar
- 21 Electricity Cost Evaluation Working Group contemplated in Section B.2.

22 ...
 23 ...
 24 ...
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ATTACHMENT A

TITLE 14. PUBLIC SERVICE CORPORATIONS; CORPORATIONS AND ASSOCIATIONS; SECURITIES REGULATION

CHAPTER 2. CORPORATION COMMISSION – FIXED UTILITIES

ARTICLE 16. RETAIL ELECTRIC COMPETITION

R14-2-1609. Solar and Environmentally-Friendly Portfolio Standard

A. Starting on January 1, ~~1999~~ 2000, any Electric Service Provider selling electricity or aggregating customers for the purpose of selling electricity under the provisions of this Article must derive at least ~~.2%~~ 0.1% of the total retail energy sold ~~competitively~~ from new solar energy resources, whether that solar energy is purchased or generated by the seller. For the purposes of this article, Utility Distribution Companies are included within the meaning of Electric Service Providers. Solar resources include photovoltaic resources and solar thermal resources that generate electricity. New solar resources are those installed on or after January 1, 1997.

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

1. Starting January 1, 2001, the portfolio percentage shall increase annually and shall be set according to the following schedule:

YEAR	PORTFOLIO PERCENTAGE
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1 to the encouragement of solar and environmentally-friendly energy
2 resources. The recommendations of the Working Group shall be presented
3 to the Commission not later than ~~December 31, 2001~~ June 30, 2003.

4
5 C Funding for this standard will be a minimum of ½ mill per retail kWh. Each
6 UDC is authorized to collect from its customers up to 0.05¢ per retail kWh for
7 the life of this standard for the purpose of acquiring solar and environmentally-
8 friendly resources or credits through a competitive bidding process or by direct
9 purchase from resources. Funding from existing rates or through existing
10 mechanisms (e.g. System Benefits Charges) may be reassigned for this purpose
11 with Commission approval. Each UDC shall file a report with the Commission
12 by January 31 each year that (1) specifies its plan to achieve a funding level of ½
13 mill/kWh, and (2) outlines its planned competitive procurement process.

14
15
16 ~~C. The solar portfolio requirement shall only apply to competitive retail electricity~~
17 ~~in the years 1999 and 2000 and shall apply to all retail electricity in the years~~
18 ~~2001 and thereafter.~~

19
20 **D.** Electric Service Providers shall be eligible for a number of extra credit
21 multipliers that may be used to meet the solar portfolio standard requirements:
22 1. Early Installation Extra Credit Multiplier: For new solar electric systems
23 installed and operating prior to December 31, 2003, Electric Service
24 Providers would qualify for multiple extra credits for kWh produced for 5
25

1 b. In-State Manufacturing and Installation Content Extra Credit
2 Multiplier: Solar electric power plants shall receive up to a .5 extra
3 credit multiplier related to the manufacturing and installation
4 content that comes from Arizona. The percentage of Arizona
5 content of the total installed plant cost shall be multiplied by .5 to
6 determine the appropriate extra credit multiplier. So, for instance,
7 if a solar installation included 80% Arizona content, the resulting
8 extra credit multiplier would be .4 (which is $.8 \times .5$).
9

10
11 3. Distributed Solar Electric Generator and Solar Incentive Program Extra
12 Credit Multiplier: Any distributed solar electric generator that meets more
13 than one of the eligibility conditions will be limited to only one .5 extra
14 credit multiplier from this subsection. Appropriate meters will be
15 attached to each solar electric generator and read at least once annually to
16 verify solar performance.
17

18 a. Solar electric generators installed at or on the customer premises in
19 Arizona. Eligible customer premises locations will include both
20 grid-connected and remote, non-grid-connected locations. In order
21 for Electric Service Providers to claim an extra credit multiplier,
22 the Electric Service Provider must have contributed at least 10% of
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E. Electric Service Providers selling electricity under the provisions of this Article shall provide reports on sales and solar power as required in this Article, clearly demonstrating the output of solar resources, the installation date of solar resources, and the transmission of energy from those solar resources to Arizona consumers. The Commission may conduct necessary monitoring to ensure the accuracy of these data.

F. If an Electric Service Provider selling electricity under the provisions of this Article fails to meet the requirement in R14-2-1609(A) or (B) in any year, the Commission shall impose a penalty on that Electric Service Provider that the Electric Service Provider pay an amount equal to 30¢ per kWh to the Solar Electric Fund for deficiencies in the provision of solar electricity. This Solar Electric Fund will be established and utilized to purchase solar electric generators or solar electricity in the following calendar year for the use by public entities in Arizona such as schools, cities, counties, or state agencies. Title to any equipment purchased by the Solar Electric Fund will be transferred to the public entity. In addition, if the provision of solar energy is consistently deficient, the Commission may void an Electric Service Provider's contracts negotiated under this Article.

1. The Director, Utilities Division shall establish a Solar Electric Fund in 1999 to receive deficiency payments and finance solar electricity projects.

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documentation, subject to Commission review, shall be given to the purchasing entity and shall be referenced in the reports of the Electric Service Provider that is using the purchased kWh to meet its portfolio requirements.

J. Solar portfolio standard requirements shall be calculated on an annual basis, based upon electricity sold during the calendar year.

K. An Electric Service Provider shall be entitled to receive a partial credit against the solar portfolio requirement if the Electric Service Provider 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:

1999	Maximum of 50 % of the portfolio requirement
2000	Maximum of 50 % of the portfolio requirement
2001	Maximum of 25 % 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

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and the vapor compression unit it replaces or supplements. Solar water heating
and air conditioning systems shall be eligible for Early Installation Extra Credit
Multipliers as defined in R14-2-1609 D.1 and Solar Economic Development
Extra Credit Multipliers as defined in R14-2-1609 D.2.

N. An Electric Service Provider shall be entitled to meet up to 10% of the portfolio
requirement with electricity produced by environmentally-friendly renewable
electricity technologies approved by the Commission after a hearing. Systems
using such technologies shall be eligible for Early Installation Extra Credit
Multipliers as defined in R14-2-1609 D.1 and Solar Economic Development
Extra Credit Multipliers as defined in R14-2-1609 D.2.