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BEFORE THE ARIZONA CORPORATION COMMISSION 4: 50

CARL J. KUNASEK
Commissioner - Chairman
JIM IRVIN
Commissioner
WILLIAM A. MUNDELL
Commissioner

Arizona Corporation Commission
CORP. COMMISSION
EX-100-000000

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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) NOTICE OF FILING
AS A POTENTIAL PART OF THE RETAIL)
ELECTRIC COMPERITION RULES.)
_____)

The Land and Water Fund of the Rockies, the Grand Canyon Trust, and the Grand Canyon Chapter of the Sierra Club ("Environmental Intervenors") and the Arizona Clean Energy Industries Alliance ("ACEIA") hereby give notice of filing their Joint Post-Hearing Brief in the above-captioned docket.

RESPECTFULLY SUBMITTED this 17th day of November, 1999.

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1 **The original and ten (10) copies of**
2 **the foregoing are filed this**
3 **17th day of November, 1999 with:**

4 Docket Control
5 Arizona Corporation Commission
6 1200 West Washington Street
7 Phoenix, Arizona 85007

8 A copy of the foregoing is hand-delivered
9 this 5th day of November, 1999 to:

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12 Arizona Corporation Commission
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BEFORE THE ARIZONA CORPORATION COMMISSION

CARL J. KUNASEK
Chairman

JIM IRVIN
Commissioner

WILLIAM MUNDELL
Commissioner

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 EI and ACEIA propose a small wires charge mechanism to fund the development
2 of the renewable resources contemplated by the SEFPS. The wires charge we propose
3 is likely to have a very minor effect, if any, on retail electricity price levels. Based on
4 Decision No. 61973, the Commission has specifically retained its authority to approve
5 price increases despite the APS and TEP rate settlements. Alternatively, we also
6 describe a rate mechanism that assures no rate impact over the next 4½ years through
7 deferral of amounts collected in excess of current rates.
8

9
10 **II. INTRODUCTION**

11 Members of the Environmental Intervenors, collectively and individually, have
12 maintained an active presence in electric utility restructuring matters in Arizona. The
13 LAW Fund is a regional environmental law and policy center serving the Rocky
14 Mountain and Desert Southwest region. The Grand Canyon Trust is a regional
15 organization dedicated to the conservation of the natural and cultural resources of the
16 Colorado Plateau. The mission of the Grand Canyon Chapter of the Sierra Club is to
17 practice and promote the responsible use of the Earth's ecosystems and resources,
18 among other things. The over 16,000 combined members of these organizations in
19 Arizona have a substantial interest in preserving, protecting, and improving the
20 environment throughout Arizona and are committed to the development of clean,
21 renewable energy sources.
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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
11 These proceedings are the culmination of four years of effort on the part of this
12 Commission and the key parties presently involved, including ourselves. However,
13 even prior to the adoption of the December 26, 1996 Electric Competition Rules, the
14 1993 IRP established renewable resource goals for the major utilities subject to the
15 jurisdiction of this Commission. To date, APS has achieved less than 0.5MW of its
16 12MW goal, and TEP has just this summer brought on line a landfill gas supplemental
17 fuel resource to an existing power plant to meet its 5MW obligation. This is not
18 intended to be an indictment of the utilities, but rather the program and its inherent lack
19 of incentives.
20
21

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 small public and private utilities, utility investors, providers of competitive services,
2 customer groups including low-income, municipals and industrial, solar industry, and
3 the environmental community. The work of the subcommittee led to agreement on (1)
4 how to implement any funds collected through the "penalty" mechanism, (2) expanding
5 the use of incentives to better meet the SPS objectives, (3) the banking and trading of
6 solar kWh, i.e. excess solar kWh should be a tradable commodity that may be sold to
7 other interested parties, and (4) the development of an acceptable cost/benefit point.
8
9 The Commission adopted the first three of the subcommittee recommendations, and
10 these were incorporated into the proposed SPS adopted by the Commission on August
11 10 and December 11, 1998.

12
13 The development of a process to determine an acceptable cost/benefit point was
14 added by Chairman Kunasek in April of this year. The timing of events is very
15 important here. On April 8, Chairman Kunasek sent a letter to Commissioners Irvin and
16 West proposing the modified portfolio standard at issue in this proceeding, suggesting a
17 hearing process to consider "costs and ratepayer impacts," as well as other issues. As a
18 result, Docket No. E-00000A-99-0205 was opened April 20. On May 7, a letter was
19 sent to all interested parties from Ray Williamson requesting comments on proposed
20 questions to be addressed in this docket and the proposed schedule. Among the utilities
21 APS, TEP, and AEPCO filed comments.
22
23

24 B. THE APS AND TEP RATE SETTLEMENTS
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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

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

24 **III. PROPOSED ENVIRONMENTAL PORTFOLIO STANDARD**

25
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 A. THE PROPOSED ENVIRONMENTAL PORTFOLIO STANDARD
2 SHOULD BE ADOPTED

3 The Environmental Intervenors and ACEIA support Chairman Kunasek's
4 proposed Portfolio Standard and believe that it should be adopted by the Commission,
5 but with a few changes to make it more acceptable to the utilities. Although ACEIA has
6 supported the portfolio standard as originally written, in recognition of the utilities' need
7 for cost certainty and other market-related concerns raised during the hearing process,
8 ACEIA has moderated it's position somewhat. ACEIA now believes that the use of a
9 wires charge funding mechanism as proposed by the Environmental Intervenors will
10 result in a cost-effective SEFPS program. Accordingly, ACEIA and the Environmental
11 Intervenors jointly propose that the Commission adopt Chairman Kunasek's
12 Environmental Portfolio Standard, but with several changes to address concerns raised
13 by the utilities. To this end, the Environmental Intervenors and ACEIA propose
14 changes to the SEFPS as follows:
15
16

- 17 1. Include a new section that provides a funding mechanism to support the
18 requirements of the portfolio standard;
- 19 2. Reduce the SEFPS requirement in the initial years and "smooth-out" the
20 growth in the portfolio standard percentages;
- 21 3. Delay the review process proposed in Section B.2. until 2003 to allow the
22 parties the opportunity to gain sufficient market experience; and
23 4. Extend the Early Installation Extra Credit Multiplier one year.
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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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21

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 renewables encouragement. Second, the SEFPS achieves the objectives of the 1997
2 subcommittee comprised of the very parties to this proceeding. Finally, the SEFPS
3 provides economic development benefits, benefits to the utility system itself, assistance
4 to low-income and rural Arizonans, and benefits to the environment. These benefits far
5 outweigh the costs.
6

7 A. THE PARTIES ENDORSE RENEWABLES ENCOURAGEMENT

8 The testimony and comments filed in this proceeding indicate general agreement
9 that promotion of renewable resources, and especially solar electric resources, is in the
10 public interest. The primary differences among the parties relates to only two elements:
11 (1) whether the encouragement of solar and environmentally-friendly resources should
12 be a statewide policy requirement or a voluntary program for those entities providing
13 electric service, and (2) whether the form of the requirement should be based upon
14 acquiring specific proportions related to sales of renewable resources or simply
15 spending specified amounts on renewable resources.
16
17

18 Clearly, other electric supply resources have been supported through public
19 policy efforts, most notably nuclear power. Indeed, the lion's share of the costs of this
20 resource are being collected through stranded cost charges on the ratepayers. It is our
21 belief, supported by the testimony of Commission Staff witness Ray Williamson that
22 the people of Arizona desire to utilize more environmentally benign resources, and thus
23 far other methods for increasing the use of renewables have fallen far short of goals. For
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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 2. Increase utility and electric service provider expertise and experience in
2 the procurement, installation, and operation of solar electric systems or in the purchase
3 and transmission of solar electricity from other sources.
4

5 3. Encourage new solar electric technologies as a reasonable percentage of
6 competitive retail electric sales that is significantly less than the annual growth of
7 demand for electricity.
8

9 4. Encourage the use of modest-sized, distributed solar generators to reduce
10 the loading on existing transmission lines and also reduce the need to build new,
11 expensive transmission lines as the demand for electricity increases in the future.
12

13 5. Contribute to the commercialization of solar electric technologies, which
14 will decrease the cost of solar electricity to Arizona customers in the future.
15

16 6. Contribute to economic benefits throughout Arizona.

17 7. Encourage environmental benefits.

18 8. Encourage a market-based solar electric industry.

19 9. Increase public information/awareness of solar electricity.

20 10. Reach an acceptable cost/benefit point.

21 11. Encourage solar resource development, rather than payment for non-
22 compliance.
23

24 The Environmental Intervenors and ACEIA believe Chairman Kunasek's
25 proposed SEFPS addresses each of these objectives.
26

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 an estimated 750 full time high technology in-state manufacturing jobs and \$45 million
2 in new long term tax revenues for the Arizona economy over a five year period.

3 Because investment in solar manufacturing plants requires capital and a rate of
4 return that may take 10 to 15 years to realize, the firms in the ACEIA are watching
5 closely the actions by states, including Arizona, to attract manufacturing and in-state
6 business as part of their restructuring efforts. To demonstrate this interest, ACEIA
7 presented letters from four firms indicating their intentions to pursue locating in Arizona
8 with a promise of 300 new jobs and 200 million in new revenues as their response to the
9 size and the sustainability of the opportunity presented by the SEFPS.
10
11

12 In addition, strategically placed renewable resources can capture cost and risk
13 benefits³ for both generation and the wires businesses. These benefits include resource
14 diversification and fuel cost risk management. For example, if fossil fuel costs rise in
15 the future or if environmental regulations are tightened, then solar power can potentially
16 provide a cost effective and attractive alternative. Other benefits to the electric supply
17 system include transmission and distribution cost reduction, reliability enhancement,
18 and reduction in line losses.
19
20

21 Further, a properly implemented SEFPS can provide lower cost electricity than
22 would otherwise be available in off-grid applications, and reach greater numbers of low-
23 income peoples, such as Native Americans. In addition, developing businesses that
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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 produce about 4,400 kWh each year. This should reduce CO2 emissions by about 4,400
2 pounds per year, SO2 emissions by about 175 pounds per year, and NOx emissions by
3 about 235 pounds per year. The full portfolio standard would increase these annual
4 reduction figures dramatically. Exhibit JFG-2 (EI witness Gilliam, Direct testimony)
5 shows the calculation of emission offsets for the RPS.
6

7 **VI. COST OF THE SOLAR AND ENVIRONMENTALLY-FRIENDLY**
8 **PORTFOLIO STANDARD**

9 The hearing elicited ranges of cost for renewable resources from 5¢ per kWh
10 from industry representatives to over 60¢ per kWh from the utilities. Perhaps the best
11 reference work was performed by Commission Staff witness Dr. Hoff. His detailed
12 analyses provided optimistic and pessimistic scenarios year by year for the term of the
13 SEFPS, with NPV of statewide costs equal to \$156 and \$344 million, respectively for
14 1999 through 2012. These figures are equivalent to flat annual amounts of \$19.3 and
15 \$46.7 million, respectively.
16

17
18 In order to provide a reasonable opportunity to achieve the objectives of the
19 portfolio standard, it is prudent to assure that the funding level falls somewhere in
20 between Dr. Hoff's estimates. Splitting the difference would yield annual amounts of
21 about \$33.0 million statewide. The Environmental Intervenors and ACEIA propose an
22 even more modest funding level starting at about \$27 million statewide and growing
23 with sales, as does the SEFPS. This equates to ½ mill per kWh, or \$0.0005 per kWh.
24 We believe this amount of funding provides an opportunity, but not a guarantee, that the
25
26

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

17
18 Clearly, these amounts are well below even the most optimistic scenario developed by
19 Dr. Hoff. However, these funding levels have the advantage of no ratepayer impact,
20 according to the utilities. Thus, ratepayer impact begins as we increase funding for
21 renewable resources above these levels.
22

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

Utility	Equivalent Rate	Increase Required to	Residential Impact

	Year 2000	Achieve ½ mill	
APS	0.28 mills/kWh	0.22 mills/kWh	22¢/month
TEP	0.03 mills/kWh	0.47 mills/kWh	47¢/month
SRP	0.33 mills/kWh	0.17 mills/kWh	17¢/month
AEPCO	0.00 mills/kWh	0.50 mills/kWh	50¢/month
Citizens	0.00 mills/kWh	0.50 mills/kWh	50¢/month
NEC	0.00 mills/kWh	0.50 mills/kWh	50¢/month

Thus, the monthly rate impact for the average residential customer is small and roughly equivalent to the *sales tax* on one or two latte coffees. For commercial and industrial customers, the dollar amount is larger for obvious reasons, but the percentage increase remains about ¼ to ½ of one percent. Tie this together with the rate settlement agreements, and the true effect is a reduction of the APS rate decrease to about 7% from 7.5%. It's difficult to make a similar determination for TEP without knowing the extent of their willingness to shift dollars from DSM to renewables. See Direct Testimony of TEP witness Hansen at Page 2).

VII. FUNDING OF THE SOLAR AND ENVIRONMENTALLY-FRIENDLY PORTFOLIO STANDARD

There are a number of methods of recovering the additional funding identified above. These include increasing existing System Benefits Charges, utilizing a separate wires charge to recover the additional increment, defer additional funding requirements for future recovery beyond the stranded cost recovery period, consider the funding amounts to be capital investments and add them to electric utility rate base, or allow the utility to absorb the additional funding requirements without rate base treatment, or any near term rate change. Combinations of one or more of these methods are also possible.

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

12 The APS System Benefits Charge is a good model on which to base an example.
13 The SBC rate is 1.15 mills/kWh and includes nuclear decommissioning and low income
14 program funding as well as funding for renewable resources. According to APS the
15 funding breaks down as follows:⁵
16

Funding for low-income programs	\$ 4.7 million
Funding for decommissioning	10.6 million
<u>Funding for other programs</u>	<u>0.5 million</u>
Subtotal non-renewables	\$ 15.8 million

<u>Funding for renewable programs</u>	<u>6.0 million</u>
Total Funding	\$21.8 million

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

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

1 As the SBC is a charge based on sales, normal sales growth will lead to increased
 2 funding. If we assume each of these items other than renewables funding is relatively
 3 fixed (and certainly decommissioning is fixed), then funding available for the
 4 renewables program will grow at a rate even faster than sales growth. For example, a
 5 reasonable long-term average growth rate for Arizona is probably along the lines of 3%.
 6 Beginning with year 2000 sales for APS of 22.66 GWh (Attachment EZF-5 to the direct
 7 testimony of APS witness Mr. Fox), the following can be expected to occur:
 8

3% Growth	2000	2001	2002	2003
Sales (GWh)	22.66	23.34	24.04	24.76
SBC Revenue	\$26.1	\$26.8	\$27.6	\$28.5
Fixed Amounts	\$15.8	\$15.8	\$15.8	\$15.8
Net Renewables	\$10.3	\$11.0	\$11.8	\$12.7
Funding at ½ mill	\$11.3	\$11.7	\$12.0	\$12.4
SBC Excess or (Shortfall)	(\$1.0)	(\$0.7)	(\$0.2)	\$0.3

9 Note: Dollars in millions

10 Thus, the recommended funding approach will, for all practical purposes,
 11 provide the funding recommended by EI and ACEIA without a rate increase for APS.
 12 Should the growth turn out to be as high as 6%, as apparently indicated by Pinnacle
 13 West in a recent application, the crossover point will be achieved much sooner.
 14

6% Growth	2000	2001	2002	2003
Sales (GWh)	22.66	24.02	25.46	26.99
SBC Revenue	\$26.1	\$27.6	\$29.3	\$31.0
Fixed Amounts	\$15.8	\$15.8	\$15.8	\$15.8
Net Renewables	\$10.3	\$11.8	\$13.5	\$15.2
Funding at ½ mill	\$11.3	\$12.0	\$12.7	\$13.5
SBC Excess or (Shortfall)	(\$1.0)	(\$0.2)	\$0.8	\$1.7

15 Note: Dollars in millions

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
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1 stranded costs, or about \$5.2 million per week. Extending the regulatory asset and
2 stranded cost recovery could effectively recover the four and one-half year SEFPS
3 funding shortfall in a period of about five weeks.

4
5 This proposal is raised as a concept to resolve the rate issue in a ways that
6 satisfies the concerns of the utilities and certain customer groups, while providing
7 adequate funding for a workable portfolio standard. Our recommended approach
8 however, remains as outlined above.

9
10 **VIII. PROCUREMENT OF SOLAR AND ENVIRONMENTALLY-FRIENDLY**
11 **RESOURCES**

12 The final element of providing a funding mechanism for the SEFPS is proper
13 incentives to assure that the funds are used effectively. Business as usual is inadequate.
14 APS has acquired less than 500kW for the \$10 million spent over the last three years.
15 While the penalty provision provides a “stick,” we believe the procurement process
16 should be a competitive process with Commission oversight.

17
18 Funds collected from customers to support the SEFPS may be utilized by either
19 the UDC or the ESP that provides service to that customer. The UDC is likely to have
20 greater amounts available as a result of serving Standard Offer customers, and can
21 capture economies of scale in the acquisition of renewable resources. ESPs, on the
22 other hand, may be more nimble in the marketplace and able to develop creative
23 acquisition opportunities. We recommend that each ESP be given the option to utilize
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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.
18
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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 bids may be evaluated and contracts signed prior to the end of the second quarter of that
2 year. The RFP process should allow for submittals with multi-year commitments up to
3 at least five, and perhaps ten, years.

4
5 The Environmental Intervenors and ACEIA's recommendations with respect to
6 the acquisition of solar and environmentally-friendly resources are to:

7 1. Require each UDC to acquire solar and environmentally-friendly
8 resources through a competitive bidding process with the oversight of the Director of
9 the Commission's Utilities Division, or a designated committee. ESPs may fulfill their
10 SEFPS obligations on their own, or participate in the relevant UDC process.

12 2. Allow solar and environmentally-friendly resources consisting of
13 installations smaller than 10kW to opt out of the bidding process and contract directly
14 with UDCs or ESPs.

16 2. Require each UDC to file a report that outlines the planned competitive
17 procurement process (e.g. request for proposal).

18
19
20 **IX. THE SOLAR AND ENVIRONMENTAL PORTFOLIO STANDARD
PERCENTAGES**

21 The utilities have raised some reasonable concerns regarding the ramp-up rate of
22 the proposed portfolio standard. Moreover, applying the standard to total retail sales,
23 not just sales in the competitive market, will eliminate any disadvantage that ESPs may
24 have felt. In the spirit of compromise, the Environmental Intervenors and ACEIA
25

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 system is important to the development of a vibrant and innovative renewables market
2 and should not be restricted to solar electric, but should also be applicable to each
3 category of resource. Each category of resource, i.e. solar electric, solar hot water (and
4 air conditioning), and environmentally-friendly renewables, should have the flexibility
5 to bank, trade, and sell credits within its own category.
6

7 Fourth, Section J is written to be applicable to solar resources, and should be
8 applicable to solar and environmentally-friendly resources.
9

10 For a variety of reasons, the electric utility restructuring process in Arizona is
11 about one year behind the original schedule. As a result, certain adjustments are
12 necessary to the portfolio standard regarding the multipliers and the proposed review
13 process. First, the early installation extra credit multiplier described in Section D.1. was
14 intended to encourage vendors, utilities, ESPs, and so forth to proactively install
15 qualifying resources early. Put another way, waiting until the last minute was
16 discouraged. This multiplier was designed to be equal to 0.5 through the first year of
17 the competitive market, declining by 0.1 each year thereafter. To maintain this
18 incentive in light of the roughly one-year delay in the advent of competition, the
19 schedule of multipliers should be extended one year as follows:
20
21

<u>Year</u>	<u>Multiplier</u>	<u>Year</u>	<u>Multiplier</u>
1997	.5	2001	.4
1998	.5	2002	.3
24 1999	.5	2003	.2
25 2000	.5	2004	.1

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;
24
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1 (b.1) The Environmental Intervenors believe that each UDC be required
2 to acquire solar and environmentally-friendly resources through a competitive
3 bidding process with the oversight of the Director of the Commission's Utilities
4 Division, or his or her designee. ESPs may fulfill their SEFPS obligations on
5 their own, or through participation in the relevant UDC process.
6

7 (b.2) ACEIA believes that each UDC be required to acquire solar and
8 environmentally-friendly resources either through a competitive bidding process
9 or through direct purchases from vendors.
10

11 (c) Requires each UDC to file a compliance report that (1) specifies
12 the funding plan, wires charge or otherwise, necessary to achieve the funding
13 level of ½ mill/kWh, and (2) outlines the planned competitive procurement
14 process (e.g. request for proposal).
15

16 New Section C:

17 Funding for this standard will be a minimum of ½ mill per retail kWh. Each
18 UDC is authorized to collect from its customers up to 0.05¢ per retail kWh for
19 the life of this standard for the purpose of acquiring solar and environmentally-
20 friendly resources or credits through a competitive bidding process or by direct
21 purchase from resources. Funding from existing rates or through existing
22 mechanisms (e.g. System Benefits Charges) may be reassigned for this purpose
23 with Commission approval. Each UDC shall file a report with the Commission
24 by January 31 each year that (1) specifies its plan to achieve a funding level of ½
25 mill/kWh, and (2) outlines its planned competitive procurement process.
26

2. Modify Sections A and B.1 of the SEFPS to smooth the ramp-up of the
portfolio percentage schedule as follows:

<u>Year</u>	<u>% of Retail Sales</u>	<u>Year</u>	<u>% of Retail Sales</u>
-------------	--------------------------	-------------	--------------------------

1	2000	0.10%	2007	1.10%
2	2001	0.25%	2008	1.10%
3	2002	0.40%	2009	1.10%
4	2003	0.55%	2010	1.10%
5	2004	0.70%	2011	1.10%
6	2005	0.85%	2012	1.10%
7	2006	1.00%		

8 This change eliminates the need for existing Section C.

9 3 Clarify Section A to include UDCs within the meaning of ESPs.

10 4. Modify Section M of the SEFPS to include solar air conditioning as an
11 acceptable technology.

12 5. Modify Section I of the SEFPS to allow each technology group to bank,
13 trade, and sell generation-equivalent credits within the context of the Standard.

14 6. Modify Section D.1 of the SEFPS, the early installation extra credit

15 multiplier, to account for the delay in the start of the competitive market as follows:

16	<u>Year</u>	<u>Multiplier</u>	<u>Year</u>	<u>Multiplier</u>
17	1997	.5	2001	.4
18	1998	.5	2002	.3
19	1999	.5	2003	.2
20	2000	.5	2004	.1

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

23 ...

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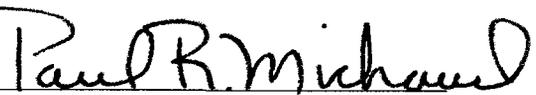
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RESPECTFULLY SUBMITTED this 17th day of November, 1999.

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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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2001	-.4%	<u>.25%</u>
2002	-.5%	<u>.40%</u>
2003	-.6%	<u>.55%</u>
2004	-.8%	<u>.70%</u>
2005-2012	1.0%	
<u>2005</u>		<u>.85%</u>
<u>2006</u>		<u>1.00%</u>
<u>2007-2012</u>		<u>1.10%</u>

2. The Commission would continue the annual increase in the portfolio percentage after December 31, 2002 ~~only if the cost of solar electricity has declined to a Commission-approved cost/benefit point.~~ 2003 only after a review of the experience gained during the first four years of solar resource development. The review will encompass a comprehensive evaluation of the costs and benefits of solar and environmentally-friendly electricity. The Director, Utilities Division shall establish, not later than January 1, ~~2004~~ 2003, a Solar Electricity Cost Evaluation Working Group to make recommendations to the Commission of an acceptable solar electricity cost/benefit point or solar kWh cost impact cap that the Commission could use as a criteria for the decision to continue the ~~increase in the portfolio percentage.~~ balance of costs and benefits related

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.

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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

26

1 years following operational start-up of the solar electric system. The 5-
2 year extra credit would vary depending upon the year in which the system
3 started up, as follows:
4

5	YEAR	EXTRA CREDIT MULTIPLIER
6	1997	.5
7	1998	.5
8	1999	.5
9	2000	<u>.4</u> .5
10	2001	<u>.3</u> .4
11	2002	<u>.2</u> .3
12	2003	<u>.1</u> .2
13	2004	<u>.1</u>

14
15
16 The Early Installation Extra Credit Multiplier would end in 20034.

17 2. Solar Economic Development Extra Credit Multipliers: There are 2 equal
18 parts to this multiplier, an in-state installation credit and an in-state
19 content multiplier.
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21 a. In-State Power Plant Installation Extra Credit Multiplier: Solar
22 electric power plants installed in Arizona shall receive a .5 extra
23 credit multiplier.
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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. In order for Electric Service Providers to claim an extra credit multiplier, the Electric Service Provider must have contributed at least 10% of

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the total installed cost or have financed at least 80% of the total installed cost.

- b. Solar electric generators located in Arizona that are included in any Electric Service Provider's Green Pricing program.
- c. Solar electric generators located in Arizona that are included in any Electric Service Provider's Net Metering or Net Billing program.
- d. Solar electric generators located in Arizona that are included in any Electric Service Provider'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 Electric Service Provider to accrue extra credit multipliers from this subsection.

4. All multipliers are additive, allowing a maximum combined extra credit multiplier of 2.0 in years 1997-2003, for equipment installed and manufactured in Arizona and either installed at customer premises or participating in approved solar incentive programs. So, if an Electric Service Provider qualifies for a 2.0 extra credit multiplier and it produces 1 solar kWh, the Electric Service Provider would get credit for 3 solar kWh (1 produced plus 2 extra credit).

1 E. Electric Service Providers selling electricity under the provisions of this Article
2 shall provide reports on sales and solar power as required in this Article, clearly
3 demonstrating the output of solar resources, the installation date of solar
4 resources, and the transmission of energy from those solar resources to Arizona
5 consumers. The Commission may conduct necessary monitoring to ensure the
6 accuracy of these data.
7

8 F. If an Electric Service Provider selling electricity under the provisions of this
9 Article fails to meet the requirement in R14-2-1609(A) or (B) in any year, the
10 Commission shall impose a penalty on that Electric Service Provider that the
11 Electric Service Provider pay an amount equal to 30¢ per kWh to the Solar
12 Electric Fund for deficiencies in the provision of solar electricity. This Solar
13 Electric Fund will be established and utilized to purchase solar electric
14 generators or solar electricity in the following calendar year for the use by public
15 entities in Arizona such as schools, cities, counties, or state agencies. Title to
16 any equipment purchased by the Solar Electric Fund will be transferred to the
17 public entity. In addition, if the provision of solar energy is consistently
18 deficient, the Commission may void an Electric Service Provider's contracts
19 negotiated under this Article.
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21 1. The Director, Utilities Division shall establish a Solar Electric Fund in
22 1999 to receive deficiency payments and finance solar electricity projects.
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2. The Director, Utilities Division shall select an independent administrator for the selection of projects to be financed by the Solar Electric Fund. A portion of the Solar Electric Fund shall be used for administration of the Fund and a designated portion of the Fund will be set aside for ongoing operation and maintenance of projects financed by the Fund.

G. Photovoltaic or solar thermal electric resources that are located on the consumer's premises shall count toward the solar portfolio standard applicable to the current Electric Service Provider serving that consumer.

H. Any solar electric generators installed by an Affected Utility to meet the solar portfolio standard shall be counted toward meeting renewable resource goals for Affected Utilities established in Decision No. 58643.

I. Any Electric Service Provider or independent ~~solar electric~~ renewable generator that produces or purchases any ~~solar~~ renewable kWh in excess of its annual portfolio requirements may save or bank those excess ~~solar~~ renewable kWh for use or sale in future years. Any eligible ~~solar~~ renewable kWh produced subject to this rule may be sold or traded to any Electric Service Provider that is subject to this rule, within its own renewable resource category. The renewable resource categories are (1) solar electric, (2) solar hot water including solar air conditioning, and (3) other environmentally-friendly renewable resources approved by the Commission in accordance with Section N. Appropriate

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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

1 that are used by other Electric Service Providers to meet their Arizona
2 solar portfolio requirements will not be allowable for credits under this
3 Section for the manufacturer/Electric Service Provider to meet its
4 portfolio requirements.
5

6 L. The Director, Utilities Division shall develop appropriate safety, durability,
7 reliability, and performance standards necessary for solar generating equipment
8 to qualify for the solar portfolio standard. Standards requirements will apply
9 only to facilities constructed or acquired after the standards are publicly issued.
10

11 M. An Electric Service Provider shall be entitled to meet up to 20% of the portfolio
12 requirement with solar water heating and/or air conditioning systems purchased
13 by the Electric Service Provider for use by its customers, or purchased by its
14 customers and paid for by the Electric Service Provider through bill credits or
15 other similar mechanisms. The solar water heaters and/or air conditioners must
16 replace or supplement the use of electric water heaters and/or air conditioners for
17 residential, commercial, or industrial water heating and/or air conditioning
18 purposes. For the purposes of this rule, solar water heaters will be credited with
19 1 kWh of electricity produced for each 3,415 British Thermal Units of heat
20 produced by the solar water heater. Solar air conditioning systems will be
21 credited with the electric energy that is being displaced on the basis of the
22 relative energy efficiency rating between the solar thermal steam absorption unit
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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.