BEFORE THE ARIZONA CORPORATION C

COMMISSIONERS

JEFF HATCH-MILLER Chairman
WILLIAM A. MUNDELL
MIKE GLEASON
KRISTIN K. MAYES
BARRY WONG

Arizona Corporation Commission
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IN THE MATTER OF THE PROPOSED RULEMAKING FOR THE RENEWABLE ENERGY STANDARD AND TARIFF RULES.

DOCKET NO. RE-00000C-05-0030

DECISION NO. 69127

OPINION AND ORDER

DATE OF PUBLIC COMMENT HEARING:	May 23, 2006 and June 5, 2006
PLACE OF HEARING:	Phoenix, Arizona
ADMINISTRATIVE LAW JUDGE:	Teena Wolfe
IN ATTENDANCE:	Chairman Jeff Hatch-Miller Commissioner William A. Mundell Commissioner Mike Gleason Commissioner Kristin K. Mayes
APPEARANCES:	Ms. Janice Alward, Assistant Chief Counsel, Legal Division, on behalf of the Commission's Utilities Division Staff.

BY THE COMMISSION:

By this Decision, the Arizona Corporation Commission ("Commission") adopts new Renewable Energy Standard and Tariff rules, Arizona Administrative Code ("A.A.C.") R14-2-1801 through -1815 ("Proposed RES Rules"), and orders the Commission's Utilities Division Staff ("Staff") to submit the adopted rules to the Office of the Arizona Attorney General for endorsement. The text of the Proposed RES Rules is attached to and incorporated in this Decision as Appendix A. The Proposed RES Rules require Affected Utilities to satisfy an Annual Renewable Energy Requirement by obtaining Renewable Energy Credits from Eligible Renewable Energy Resources as defined in the Proposed RES Rules. The Proposed RES Rules require each Affected Utility to file a tariff with the Commission that proposes methods for recovering the reasonable and prudent costs of complying with the Proposed RES Rules, for Commission approval. The Proposed RES Rules also require the filing of implementation plans and compliance reports.

The Commission undertook an extensive public comment process to develop the Proposed RES Rules prior to their Notice of Proposed Rulemaking publication on April 21, 2006 in the Arizona Administrative Register. On January 6, 2004, the Commission directed Staff to commence a workshop process to consider changes to the Commission's existing Environmental Portfolio Standard ("EPS Rule").[1] In March, April and June, 2004, Staff conducted a total of five workshops in Tucson, Flagstaff, and Phoenix, in order to allow interested parties to discuss proposed changes to the EPS Rule.

On January 14, 2005, this docket was opened for the purpose of amending the EPS Rule. On January 25, 2005, Staff filed a Staff Report providing a summary of comments made and proposals presented by interested parties, and Staff's recommendations concerning possible changes to the EPS Rule. Interested parties and members of the public filed written comments on the January 25, 2005 recommendations. A summary of those public comments appears in the Findings of Fact below. Staff subsequently filed the first of two draft rules packages in the docket on April 22, 2005.

Following the filing of Staff's April 22, 2005 draft rules package, the Commission held Special Open Meetings on June 2, June 3, August 10 and August 11, 2005. The Commission took comments from the public and held public Commission discussions regarding possible changes to the EPS Rule during the Special Open Meetings. As summarized in the Findings of Fact below, interested parties and members of the public also filed written comments on the April 22, 2005 draft rules.

On February 3, 2006, Staff docketed a draft rules package which included draft amended EPS Rules, a Staff Report on Proposed Amendments to the EPS Rules, and a Draft EPS Economic, Small Business and Consumer Impact Statement.

Following Staff's filing of the February 3, 2006 draft rules package, written comments were filed in the docket. Those comments are summarized in the Findings of Fact below. The Commission held Special Open Meetings on February 10, 16, and 27, 2006 for Commission consideration of a formal rulemaking process.

[1] A.A.C. R14-2-1618. In Decision No. 63364 (February 8, 2001), the Commission adopted the Environmental Portfolio Standard, and on March 29, 2001, the Commission issued Decision No. 63486, which modified the Environmental Portfolio Standard.

At the February 27, 2006 Special Open Meeting, the Commission decided to commence the process for promulgation of new rules, and issued Decision No. 68566 on March 14, 2006, ordering Staff to forward a Notice of Proposed Rulemaking for the Proposed RES Rules to the Arizona Secretary of State for publication in the Arizona Administrative Register.

By Procedural Order issued March 20, 2006, the required public comment hearing on the Proposed RES Rules was scheduled in accordance with Decision No. 68566. The Procedural Order established a public comment hearing date of May 23, 2006 and a schedule for the filing of formal written comments and responses prior to the public comment hearing.

A Notice of Proposed Rulemaking regarding the Proposed RES Rules was filed with the Arizona Secretary of State on March 31, 2006, and was published in the Arizona Administrative Register in accordance with A.R.S. §§ 41-1022.D and 41-1023.D on April 21, 2006.

A public comment hearing commenced as scheduled on May 23, 2006 and continued on June 5, 2006. Staff entered an appearance through counsel. Public comment was provided by members of the public and interested parties. Both prior to and during the course of the public comment hearing, Commissioners posed questions both in writing and orally to Staff and to interested parties. Responses to Commissioners' questions were provided on the record both orally at the public comment hearing and in writing following the public comment hearing. Written comments received on the Proposed RES Rules prior to the public comment hearing are summarized and addressed in a Summary of Comments and Response, which was prepared in accordance with A.R.S. § 41-1001(14)(b)(iii), and which will be included in the Preamble published with the Notice of Final Rulemaking in the Arizona Administrative Register. The Summary of Comments and Response is attached hereto as Appendix B, and is incorporated in this Decision.

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Having considered the entire record herein and being fully advised in the premises, the Commission finds, concludes, and orders that:

FINDINGS OF FACT

1. On February 4, 2005, Jeffrey Chimene, First Vice Chairman of the Pima County Democratic Committee, filed public comment in support of increasing renewable energy

requirements and implementing a distributed renewable energy requirement.

2. On February 7, 2005, two public comment letters were filed in support of increasing renewable energy in Arizona. The commenters stated that clean energy is good for public health, the economy, and Arizona, and that they are willing to pay more in their electric bills each month to accomplish the goal of increasing renewable energy requirements.

3. On February 10, 2005, 36 hand-written public comment letters were filed in support of increasing renewable energy in Arizona. The letters stated that renewable energy will result in less air pollution and a healthier environment; will improve rural economies; will provide more energy independence; and will provide a more stable energy supply.

4. On February 11, 2005, Commissioner Mundell filed a copy of his letter to the Coconino County Board of Supervisors voicing his support for the Sunshine Wind Energy Park and asking that the Coconino County Board of Supervisors support the project.

5. Also on February 11, 2005, the Chairman of the Coconino Board of Supervisors filed public comment in support of increasing the renewable requirement and specifying biomass as an eligible renewable energy technology.

6. On February 15, 2005, Forest Energy Corporation filed public comment in favor of increasing renewable energy requirements, in favor of various forms of biomass energy and in favor of efficiency requirements.

7. On February 16, 2005, the City of Scottsdale, the United Dairymen of Arizona, Southwest Windpower, Inc., and Jerry Brownlow, County Supervisor for the Navajo County Board of Supervisors, filed public comment in support of increasing renewable energy requirements.

8. The City of Scottsdale, in its February 16, 2005 filing, commented on distributed generation and self-directed programs, EPS percentages, solar technologies and other available technologies.

9. The United Dairymen of Arizona, in its February 16, 2005 filing, commented on eligibility of solar thermal-driven processes on customer sites.

10. Southwest Windpower, Inc. in its February 16, 2005 filing, commented on small windpower and the definition of solar resource/solar electricity.

11. Navajo County Supervisor Jerry Brownlow, in his February 16, 2005 filing, commented on biomass generation of electricity and heat.

12. On February 17, 2005, comments in support of increased renewable energy requirements were filed by the Eastern Arizona Counties Organization, Arizonans for Electric Choice and Competition ("AECC"), Federal Executive Agencies, the Kroger Co., Tucson Electric Power Company ("TEP"), UNS Electric, Inc. ("UNSE"), Deluge, Inc., the USDA Forest Service, Arizona Consumers Council, ME Consultants, Children's Action Alliance, New Mexico and Arizona Land Company, LLC, Greater Flagstaff Forests Partnership, the Residential Utility Consumer Office ("RUCO"), Foresight Energy Company, the Vote Solar Initiative, NetGenuity Integrated Marketing Services, Kevin Davidson, Bruce Plenk, Marshall Magruder, Industrial Solar Technology Corporation, S.O.L.I.D. USA, the Governor's Forest Health Oversight Council, the City of Tucson General Services Department, Western Resources Advocates, Arizona PIRG Education Fund, Interwest Energy Alliance, Southwest Energy Efficiency Project, Grand Canyon Trust, Arizona League of Conservation Voters, Arizona Toxics Information, Arizona Trout Unlimited, Children for a Safe Environment, Desert Foothills Land Trust, Families Against Cancer & Toxics, Fourth Dimension Fuels, Friends of Flagstaff's Future, Grand Canyon Chapter of the Sierra Club, Green Action of Arizona, Oracle Land Trust, Wild at Heart, Inc., Willowbend Environmental Education Center, Women for Sustainable Technologies, Southwest Gas Corporation, Arizona Industries of the Future, Union of Concerned Scientists, Americans for Solar Power, Arizona Solar Energy Industries Association ("AriSEIA"), Solargenix Energy, LLC, Inter Tribal Council of Arizona, Arizona Electric Power Cooperative, Inc., Duncan Valley Electric Cooperative, Inc., Graham County Electric Cooperative, Inc., Mohave Electric Cooperative, Inc., Navopache Electric Cooperative, Inc., Trico Electric Cooperative, Inc., Sulphur Springs Valley Electric Cooperative, Inc., Zeleni LLC, Solarmission Technologies Inc., Waste Technology Transfer Inc., the Tucson-Pima Metropolitan Energy Commission, the Annan Group, Distributed Generation Association of Arizona, Stirling Energy Systems, Distributed Energy Association of America, Greater Tucson Coalition for Solar Energy, and Arizona Public Service Company ("APS").

13. The Eastern Arizona Counties Organization, in its February 17, 2005 filing,

commented on biomass power and thermal heating/cooling generation.

14. AECC, Federal Executive Agencies and the Kroger Co., in their joint February 17, 2005 filing, commented on the need for any change in funding to adhere to the requirements of Paragraph 63 of the Settlement Agreement approved in APS' recent rate proceeding, on an analysis of costs to customers, and on performance standards that increase over time.

15. TEP and UNSE, in their joint February 17, 2005 filing, commented on the ability of utilities to meet the goals of increased renewable energy requirements being partially dependent upon anticipated cost reductions in solar generation equipment, and on the need for appropriate Arizona entities to address remaining barriers to customer installation of solar energy devices. In addition to several specific recommendations for EPS Rule changes, TEP and UNSE commented on the need for a periodic review of the EPS to incorporate new information and past experience into future requirements and funding levels.

16. Deluge, Inc., in its February 17, 2005 filing, commented on a research and development component to the EPS, a commercially ready renewable energy standard, demand side management ("DSM"), self-directed option, RFP program, EPS baseline structure, consumer education, green credit training, and unbundling of utility bills.

17. The USDA Forest Service, in its February 17, 2005 filing, commented on the EPS percentage dedicated to forest restoration residue (biomass).

18. ME Consultants, in its February 17, 2005 filing, commented regarding the solar allocation, surcharge increases to support large-scale solar, and the development of a solar energy improvement district in Arizona.

19. Arizona Consumers Council commented in its February 17, 2005 filing on the cost to Arizonans of the health and environmental consequences of Arizona's reliance on dirty, unsustainable sources, and stated that it is in the best interest of Arizona's consumers for policymakers to take a fresh look at our energy resources.

20. Children's Action Alliance, in its February 17, 2005 filing, commented on the disproportionate effect on children of pollution from Arizona's coal-fired power plants, and the need for Arizona to shift from dirty sources to cleaner, renewable forms of energy.

21. New Mexico and Arizona Land Company, LLC commented in their February 17, 2005 filing on solar thermal technology, biomass, and EPS percentages, including solar percentages.

22. Greater Flagstaff Forests Partnership, in its February 17, 2005 filing, commented on the eligibility of biomass space heating and water heating as renewable energy fuel sources and technologies.

23. RUCO, in its February 17, 2005 filing, commented on the need to quantify renewable resource availability, impact on customer bills, additional funding to be generated, and sufficiency or shortfalls of funding. RUCO also commented on RFPs, a distributed energy requirement, a solar set-aside, and maximum versus minimum goals for EPS percentages.

24. Foresight Energy Company, in its February 17, 2005 filing, commented on EPS percentage target dates, in-state resources, and funding.

25. The Vote Solar Initiative, in its February 17, 2005 filing, commented on distributed generation, interconnection standards, and net metering.

26. NetGenuity Integrated Marketing Services, in its February 17, 2005 filing, commented on wind generation, hybrid wind/solar-electric systems, biomass, and the portfolio percentage schedule.

27. Kevin Davidson, a renewable energy co-generator of Unisource Energy Services, commented in his February 17, 2005 filing on portfolio percentages, the distributed renewable energy requirement, and in-state resources.

28. Bruce Plenk commented in his February 17, 2005 filing on the extra credit multiplier, the distributed renewable energy requirement, and restoration of DSM funding.

29. Marshall Magruder commented in his February 17, 2005 filing on a new EPS funding mechanism and on several specific language recommendations.

30. Industrial Solar Technology Corporation commented in its February 17, 2005 filing on distributed energy categories and solar thermal energy.

31. S.O.L.I.D. USA commented in its February 17, 2005 filing on solar thermal systems, solar HVAC technologies, distributed energy set-asides, definition of distributed renewable technologies, and a uniform credit purchase program.

32. The Governor's Forest Health Oversight Council commented in its February 17, 2005 filing on portfolio percentage requirements, and on recognition of community-focused biomass power and thermal (heating/cooling) generation.

33. The City of Tucson General Services Department commented in its February 17, 2005 filing on solar water heating systems, a distributed renewable energy system scale, retroactive EPS credits, re-establishment of a cost evaluation working group, net metering, and a self direction option for large customers. A City of Tucson Memorial dated April 19, 2004 in support of increased renewable energy requirements was attached to the comments.

34. Western Resources Advocates, Arizona PIRG Education Fund, Interwest Energy Alliance, Southwest Energy Efficiency Project and Grand Canyon Trust, in their joint February 17, 2005 filing, commented on renewable percentages, out-of-state resources, definition of biomass to exclude municipal and solid waste, Commission review and approval of utilities' EPS plans, EPS cost definitions, restoration of DSM funding, and utility acquisition of cost-effective renewable resources above and beyond EPS requirements.

35. In comments filed February 17, 2005, Arizona League of Conservation Voters, Arizona Toxics Information, Arizona Trout Unlimited, Children for a Safe Environment, Desert Foothills Land Trust, Families Against Cancer & Toxics, Fourth Dimension Fuels, Friends of Flagstaff's Future, Grand Canyon Chapter of the Sierra Club, Green Action of Arizona, Oracle Land Trust, Wild at Heart, Inc., Willowbend Environmental Education Center, and Women for Sustainable Technologies commented on clean energy's positive effects on public health, the environment, and the economy, and on the need to exclude municipal and solid waste from the definition of biomass.

36. In a separate filing on February 17, 2005, the Grand Canyon Chapter of the Sierra Club commented on EPS percentages, solar electric requirements, a distributed renewable energy requirement, funding, DSM fund restoration, exclusion of municipal and solid waste from the definition of biomass, solar water heating and air conditioning, and in-state resources.

37. Southwest Gas Corporation commented in its February 17, 2005 filing on resource efficiency, export of electricity out-of-state, water resource conservation, a tiered prioritization system for EPS incentives, and net revenue (margin) lost by natural gas utilities from the potential

displacement of natural gas water heating or space heating.

38. Arizona Industries of the Future, in its February 17, 2005 filing, commented on biomass space heating and air conditioning, geothermal space heating and water heating, and concentrated solar heat processing applications.

39. Union of Concerned Scientists, in its February 17, 2005 filing, commented on EPS percentages, out-of-state renewable generation, long-term contracts, penalties for non-compliance, reporting requirements, funding only above-market costs, and definitions of renewable energy sources and technologies, including biomass.

40. Americans for Solar Power commented in its February 17, 2005 filing on funding dedicated to grid-connected distributed photovoltaic ("PV") systems, retail-rate net metering, consumer-friendly interconnection standards, funding dedicated to central station solar plants, and definitions of distributed technologies.

41. AriSEIA commented in its February 17, 2005 filing on EPS percentages, definition of distributed renewable energy, uniform credit purchase program, solar water heating, solar HVAC, solar thermal pool heating, independent power producers, distributed solar electric generation, extra credit multiplier, and a Commission approval, reporting and planning process.

42. Solargenix Energy, LLC, in its February 17, 2005 filing, commented on portfolio percentages, resource mix, and allocation of funding among eligible technologies.

43. Inter Tribal Council of Arizona, in its February 17, 2005 filing, commented on the positive environmental and health effects of solar, wind, biomass and other renewable resources, as well as their effects on energy independence and a more stable energy supply.

44. Arizona Electric Power Cooperative, Inc., Duncan Valley Electric Cooperative, Inc., Graham County Electric Cooperative, Inc., Mohave Electric Cooperative, Inc., Navopache Electric Cooperative, Inc., Trico Electric Cooperative, Inc., and Sulphur Springs Valley Electric Cooperative, Inc. ("Electric Cooperatives") jointly filed preliminary comments on February 17, 2005. The Electric Cooperatives commented on portfolio percentages, percentage of portfolio dedicated to solar electricity, distributed renewable energy requirement, public bid or RFP requirements, funding levels, restoration of DSM funding, uniform credit purchase program, eligible technologies, solar water

heating and air conditioning, in-state resources, and on a need for periodic reviews and evaluation of portfolio percentage requirements, surcharge levels, and technologies.

45. Zeleni LLC commented in its February 17, 2005 filing on portfolio percentages, expansion of eligible technologies, waste heat recovery, distributed renewable energy resources, renewable fuels, and air emission offsets.

46. Solarmission Technologies Inc. commented in its February 17, 2005 filing on portfolio percentages, addition of existing hybrid technologies as eligible technologies, and integrating renewable generation and air emission offsets.

47. Waste Technology Transfer Inc. commented in its February 17, 2005 filing on distributed renewable energy requirements, biomass, and the definition of renewable fuels.

48. The Tucson-Pima Metropolitan Energy Commission, in its February 17, 2005 filing, commented on EPS percentages, peak demand reduction goals, and program administration. The City of Tucson Memorial dated April 19, 2004 in support of increased renewable energy requirements was attached to the comments.

49. The Annan Group, Western Resource Advocates ("WRA"), Arizona PIRG Education Fund, Grand Canyon Trust, Renewable Energy Leadership Group, Distributed Generation Association of Arizona, Interwest Energy Alliance, Greater Tucson Coalition for Solar Energy, Southwest Energy Efficiency Project, and AriSEIA jointly filed comments on February 17, 2005. They commented on a need for a larger environmental portfolio with strong oversight, and an emphasis on distributed generation while allowing for out-of-state generation.

50. The Renewable Energy Leadership Group, in a separate February 17, 2005 filing, commented on funding and implementation of a self-directed option.

51. Stirling Energy Systems, in its February 17, 2005 filing, commented on solar set-aside percentages.

52. Distributed Energy Association of America, in its February 17, 2005 filing, commented on the definition of distributed renewable energy resources, pro-renewable rate schedules, net metering, energy efficiency, out-of-state resources, biomass, and solar HVAC.

53. The Greater Tucson Coalition for Solar Energy, in its February 17, 2005 filing,

commented on portfolio percentages and distributed energy requirements. The filing also included a plan for administration and deployment of customer-sited, customer-owned generation, as jointly proposed by the Greater Tucson Coalition for Solar Energy, AriSEIA, and Clean Energy Corporation.

54. APS commented on a need for increased funding to implement EPS requirements, a competitive, transparent RFP process for all aspects of the EPS, and funding related to in-state/out-of-state resources. In addition to several specific recommendations for EPS Rule changes, APS recommended Commission review every four years of the EPS and progress toward meeting EPS requirements, in order to make any necessary adjustments.

55. Fifteen individuals filed handwritten public comment letters on February 17, 2005, all in support of increasing renewable resource requirements.

56. On March 22, 2005, Commissioner Mundell docketed a letter requesting that if revisions to the EPS are adopted that include an RFP provision, the Commission consider pre-approval of costs for the purchase of renewable energy, as an option to increase the diversity of electricity supply generated in Arizona.

57. On April 22, 2005, Staff docketed a draft rule amendment based on comments received. In the filing, Staff requested that comments on the April 22, 2005 draft rules be filed by May 3, 2005.

58. On April 25, 2005, Sonya Norman filed a public comment letter expressing her full support for an increase in the renewable portfolio standard surcharge to support more clean energy, and also stating her support for ratepayer funding of DSM programs.

59. On April 29, 2005, Southwest Windpower filed its comments on the April 22, 2005 draft rules. Southwest Windpower requested that small-scale wind systems receive the same extra-credit multipliers as solar; hybrid solar/wind systems be included as eligible technologies in the definitions for Distributed Renewable Energy Resource, Distributed Renewable Energy System, and Distributed Solar Electric Requirement; hybrid solar/wind systems be included as an eligible technology in the Solar Electric set-aside percentage; and that small-scale wind systems be specified for matching funds renewable energy projects. Southwest Windpower also stated that net metering should be included in the EPS rules for renewable energy source electric-generating technologies less

than 10 kW and should be credited at retail value, be carried over monthly and granted to the utility after a 12-month billing cycle.

60. On April 29, 2005, Commissioner Mundell filed copy of his letter to the editor of the *Arizona Daily Star* responding to an April 17, 2005 editorial regarding the costs and reliability effects of increasing renewable energy requirements. Commissioner Mundell stated in his letter that while energy from renewable resources currently costs more than energy generated from coal and natural gas, the difference in costs is getting smaller; that the EPS does not envision eliminating coal, natural gas and nuclear power plants, which will continue to provide reliability; and that the EPS also involves the restoration of DSM funds and an emphasis on distributed generation, which will promote reliability by focusing on conservation and reduction of peak load, thereby lessening peak demand for conventional power and relieving stress on the grid.

61. On May 2, 2005, TEP and UNSE jointly filed comments on the April 22, 2005 draft rules. TEP and UNSE stated that they have been, and continue to be, ardent supporters of the development and successful implementation of the EPS. They further stated that the draft rule appears to: (i) accelerate the development of renewable energy sources in Arizona at an aggressive pace; (ii) allow sufficient time for identification of grid support infrastructure that will be needed to meet EPS requirements after 2015; (iii) allow for the revision of IEEE codes and FERC standards for the safe and reliable integration of intermittent renewable energy sources with fueled generation; and (iv) provide a source of funding for the development of renewable energy and for reimbursement of expenses TEP and UNSE will incur. TEP and UNSE proposed several specific language changes, and the addition of language to clarify the development of an Affected Utility program for review and approval by the Commission, which would use Eligible Entity input and the work of the Uniform Credit Purchase Program Working Group as a base in developing the program.

62. On May 3, 2005, Commissioner Mayes filed a letter in this docket commenting that the April 22, 2005 draft rules lacked specific language on two items: net metering and standardized interconnection policies. Commissioner Mayes also encouraged the Commission to enhance the carve-out for distributed solar generation.

63. On May 3, 2005, the Arizona PIRG Education Fund filed comments on the April 22,

2005 draft rules. The comments advocated an increase in renewable resource percentages to 10 percent by 2015 and 20 percent by 2020. The Arizona PIRG Education Fund stated that based on its report "*Renewing Arizona's Economy: The Clean Energy Path to Jobs and Economic Growth*"[2] such an increase would create jobs, increase wages, increase the gross state product, help rural areas, save water, and reduce pollution. The comments urged the removal of "municipal solid waste" from the definition of biomass, and stated that municipal solid waste incinerators are responsible for releases of highly toxic pollutants including dioxins, mercury, lead, PCBs, and other harmful chemicals.

64. On May 3, 2005, WRA filed comments on the April 22, 2005 draft rules. The comments stated that the Commission should review each EPS implementation plan and issue an order approving, modifying or rejecting it; compliance reports should be docketed (excluding information determined to be confidential) and should indicate kWh of energy and kWh of generating capacity obtained from eligible resources, disaggregated by technology type; the rule should define the market cost of comparable conventional generation in terms of the energy and capacity costs avoided by acquisition of EPS resources; municipal solid waste should be excluded from the definition of biomass; the proposed in-state requirement should be removed from the rule for cost and legal reasons; the definition of net metering should be corrected; the rule should explicitly authorize tradable renewable energy credits; and the EPS percentages should be increased. The comments included an estimate of the non-solar costs of an EPS rule that has a higher percentage requirement than the proposed rule. WRA stated that taking into account uncertainties about future events, the non-solar portion of the EPS does not impose significant net costs on Arizona utilities when low cost resources from Arizona and out-of-state are acquired, even with a larger EPS than that proposed by Staff, and that if the non-solar portion of the EPS can be met with the lowest cost resources available, regardless of location, it is likely to result in net savings after several years if natural gas prices are high or if greenhouse gas emission regulations are enacted.

65. On May 3, 2005, Foresight Energy Company filed comments on the April 22, 2005 draft rules, stating that it supports increasing EPS percentages to 7 percent by 2010, 12 percent by

[2] http://www.arizonapirg.org/reports/economyreport.pdf

2015, 17 percent by 2020, and 26 percent by 2025; that more aggressive EPS targets will encourage the building of wind power projects currently under development in Arizona; and that a clear definition of market costs is critical for the EPS to reach its stated objectives, proposing that market costs be defined as "avoided cost of energy as defined in the context of PURPA, PURPA implementing rules of the FERC at 18 C.F.R. Part 292, and subsequent case law." Foresight Energy Company stated that utilities with more than half of their customers located outside Arizona should not be exempted from the EPS rules. Foresight Energy Company commented that it supports the in-state requirement; allowing unused distributed generation funds in a year to be used for other purposes; strengthened compliance requirements including penalties; adding provisions for Commission approval of plans; and renewable energy credit sale and trading.

66. On May 3, 2005, the Greater Flagstaff Forests Partnership filed comments on the April 22, 2005 draft rules. The comments advocated the addition of biomass thermal energy to the definition of Industrial Solar Heat Processing, and the addition of biomass space heating and water heaters to the definitions of Solar Space Heating, Solar Water Heater, Customer-Owned, Customer-Sited Distributed Renewable Energy Systems, and Distributed Renewable Energy Resource. The comments proposed requiring qualifying residential biomass thermal technologies to comply with Maricopa County Residential Woodburning Restriction Ordinance, and requiring qualifying non-residential biomass thermal technologies to comply with ADEQ requirements.

67. On May 3, 2005, the Grand Canyon Trust filed comments on the April 22, 2005 draft rules. The comments stated that the EPS should be increased to 26 percent by 2025, because the targets proposed by Staff are not enough to maintain active industry investment in wind energy in the state; that out-of-state resources should be allowed; that specific reporting dates and development of implementation plans should be required, and that the definition of Market Cost of Comparable Conventional Generation should specify that the cost may be the cost of procurement in addition to production, and that the cost should be specified as the cost of procuring or producing incremental electricity.

68. On May 3, 2005, Forest Energy Corporation filed comments on the April 22, 2005 draft rules, stating that biomass thermal energy should be included as an eligible technology in the

EPS. Forest Energy Corporation believes this addition would cleanly and efficiently reduce fossil fuel usage; positively impact the restoration of Arizona forest ecosystems; create employment for forest thinning; biomass installation and servicing; and could lead to new boiler manufacturing in Arizona.

69. On May 3, 2005, the Diablo Trust filed comments on the April 22, 2005 draft rules in support of increasing the EPS allocation for wind energy resource projects in Arizona.

70. On May 3, 2005, NetGenuity filed comments on the April 22, 2005 draft rules. The comments stated that the EPS should include an increase for utility-scale and small-scale wind generation. NetGenuity stated that increasing the EPS percentage to 10 percent by 2010 and 26 percent by 2025 would bring Arizona on par with neighboring states and allow development of diversified renewable resources such as relatively low-cost wind resource and biomass thermal energy, while maintaining a commitment to solar energy development. Netgenuity stated that utility-scale wind resource development will benefit ranches seeking an alternative to sub-dividing; Native American tribes seeking economic diversification, new revenue sources, and environmentally friendly ways to manage and utilize land; Northern Arizona University's research and academic programs; air quality, climate change and water usage impacts from fossil fuel generation; and ratepayers. Netgenuity stated that small-scale wind systems should receive the same extra-credit multipliers as solar; hybrid solar/wind systems should be included as eligible technologies in the definitions of Distributed Renewable Energy Resource, Distributed Renewable Energy System, and Distributed Solar Electric Requirement; that hybrid solar/wind systems should be included as an eligible technology in the Solar Electric set-aside percentage; that small-scale wind systems be included in the in-state manufacturing extra-credit multiplier; and that net metering should be included for renewable energy source electric generating technologies less than 10 kW, credited at retail value, carried over monthly and granted to the utility after a 12-month billing cycle. Netgenuity stated that it favors a definition of Market Costs of Comparable Conventional Generation similar to that proposed by Foresight Energy Company.

71. On May 3, 2005, Thomas L. Acker, Ph.D., William Auberle, M.S., Gary Deason, Ph.D., Earl P. N. Duque, Ph.D., Susan K. Williams, Ph.D., and Dean Howard Smith, Ph.D. jointly

filed comments on the April 22, 2005 draft rules. They commented that the rules should specify how the cost of comparable conventional generation is determined, that comparable generation should be defined as that generation displaced from the market by the renewable energy resource, and that the Commission should approve the methods and assumptions used; that the EPS percentage should be increased to at least 10 percent by 2015 and 24 percent by 2025, in order to allow development of a greater portion of the wind energy potential in the state; that the solar set-aside, extra-credit multipliers, manufacturing partial credit, and the uniform credit purchase program should be modified to include small-scale wind generators; that the rule should specify how ancillary services necessary to "firm" wind energy costs will be evaluated and how utilities can recover those costs, with reporting and Commission approval requirements; that utilities should be required to report methods and assumptions used in determining estimated costs of renewable energy resources; that customers utilizing the self-directed option should be allowed to retain the EPS credits and multipliers associated with the fraction of the renewable energy system costs covered by their investment; and that out-of-state resources should be eligible. The comments also stated that Native American tribes in Arizona should be given special consideration in the EPS, that utilities should receive credit for research and development expenditures, and that a net metering component should be included in the EPS.

72. On May 3, 2005, Zeleni, LLC filed comments on the April 22, 2005 draft rules. Zeleni LLC commented on whether "customer-owned" in the definition of Customer-Owned, Customer-Sited Distributed Renewable Energy System should include systems which are leased or operated by the customer. Zelini LLC also commented that eligible technologies should be defined to include "industrial non-fossil fuel heat processing" instead of "industrial solar heat processing," and that the definition of Industrial Solar Heat Processing should be changed to "Industrial Non-Fossil Fuel Heat Processing," which would be defined as "the use of non-fossil fuel thermal energy for industrial or commercial manufacturing or processing applications."

73. On May 3, 2005, Future Forest, LLC filed comments on the April 22, 2005 draft rules, stating that the EPS should include biomass thermal in addition to solar when referring to renewable energy resources and technologies, which would enable Future Forest, LLC to be on an equal playing

field with solar and wind energy. The comments stated that the emissions from burning biomass consisting of forest thinnings on the forest floor exceed emissions from controlled biomass burners, and that development of a sustainable biomass heating industry in Arizona would cleanly and efficiently reduce fossil fuel usage and impact the restoration of Arizona forest ecosystems.

74. On May 3, 2005, Bar-T-Bar Ranch filed comments on the April 22, 2005 draft rules. The comments stated that with the solar and distributed generation set-asides in the draft rule, and some degree of biomass development, the targets left for wind development would be minimal and detrimental to wind development, which would negatively impact rural Arizona. Bar-T-Bar Ranch commented that wind energy has reliable technology, low environmental impacts, uses little water, and is relatively quick and easy to build.

75. On May 3, 2005, AECC filed comments on the April 22, 2005 draft rules. AECC commented that any adoption of changes to the portfolio requirements should be accompanied by an analysis of costs to customers, and that the technologies being funded should be subject to performance standards over time.

76. On May 3, 2005, the City of Tucson filed comments on the April 22, 2005 draft rules. The City of Tucson commented that local governments should be considered a special category for the implementation of the EPS surcharge; that for local governments, the surcharge multiplier should be maintained at $0.000875/kWh; EPS surcharges should be eliminated for certain accounts such as traffic signals, street lighting and other public properties; local governments should be treated as single large non-residential customers if their aggregated demand is 3,000 kW or more; and Utility Distribution Companies ("UDCs") should not be allowed to recover part of the costs of the EPS through a system benefits charge.

77. On May 3, 2005, Bergey Windpower Co. filed comments on the April 22, 2005 draft rules, stating that the definition of small windpower should be 100 kW instead of 1 MW; the EPS should include a requirement for a rebate program for customer-owned, customer-sited distributed renewable energy systems; and net metering standards for small scale renewables, up to 100 kW, should be established in the EPS rule.

78. On May 3, 2005, the Solar Energy Industries Association ("SEIA") filed comments on

the April 22, 2005 draft rules. SEIA commented that the targets proposed are modest in the near term and do not provide sufficient requirements to motivate significant development of non-PV, concentrating solar power in the state. SEIA stated that it supports the inclusion of solar thermal technologies and an increase in funding levels. SEIA stated that the distributed renewable energy requirement should be increased to 40 percent.[3] SEIA opposed including solar electric generators included in Green Pricing Programs as eligible resources under the EPS standard, because voluntary Green Pricing Program payments simply reduce utilities' costs of compliance. SEIA proposed the addition of firm renewable resources such as thermal-storage-backed or concentrating solar with (nonrenewable) gas hybridization or (renewable, nonsolar) landfill gas hybridization, to the EPS' RFP program. SEIA proposed making the EPS enforceable; providing incentives for customer-sited resources; and making the net metering and interconnection regime uniform and consistent.

79. On May 3, 2005, the Union of Concerned Scientists filed comments on the April 22, 2005 draft rules. The comments proposed adoption of higher targets and accelerating the schedule; allowing out-of-state renewable generation if delivered to Arizona; requiring providers to offer long-term contracts; adding meaningful penalties for non-compliance or alternative compliance payments; strengthening reporting requirements; defining "above-market costs" and "market cost of comparable conventional generation;" allowing recovery of prudently-incurred costs in excess of funding levels if approved by the Commission; modifying the definition of eligible renewable energy sources and technologies to include low impact hydropower, to exclude municipal solid waste, and to include co-firing of eligible biomass resources in existing coal or natural gas plants; and limiting banking of renewable energy generation or credits.

80. On May 3, 2005, the City of Scottsdale filed comments on the April 22, 2005 draft rules. The comments stated that municipal waste requires careful sorting to remove items that produce hazardous combustion by-products, and that municipal waste burners would have to be very carefully regulated and employ emission scrubbing; that biomass obtained from dedicated energy crops could consume more energy than it provides if the cultivation of the energy crop requires

[3] In support of this comment, SEIA attached as appendices B and C to its comments the Arizona PIRG Education Fund's report: "*Renewing Arizona's Economy: The Clean Energy Path to Jobs and Economic Growth*" and the Renewable Energy Projects' "*Solar PV Development: Location of Economic Activity.*"

energy-intensive cultivation and use of fertilizers manufactured from fossil fuels; that "Net Billing" and "Net Metering" should not be characterized as equivalent methods for billing. The City of Scottsdale proposed an alternative, more aggressive schedule for increasing the percentage of renewables in utilities' portfolios, reaching 20 percent by 2015 and 50 percent by 2025, with a solar set-aside reaching 4 percent by 2015 and 10 percent by 2025, and giving preference to solar thermal technologies because they are more efficient. The comments also proposed removing the caps on the surcharge tariff, and that large customers paying in excess of $25,000 in surcharges be allowed to opt for the self-directed option and petition to receive reimbursement of the surcharge funds for use in procuring on-site renewable energy systems that would further reduce their electric bills and the associated surcharges. The City of Scottsdale also proposed that environmental and economic development attributes associated with energy produced under the Customer Self-Directed Option be retained by the customer and may be sold or retired at the customer's option. The comments proposed either striking the extra-credit multipliers from the EPS or applying negative multipliers to less desirable renewable resources, because the positive multipliers have the effect of inflating the apparent amount of renewable energy. The City of Scottsdale opposed the Manufacturing Partial Credit on the grounds that it would allow utilities or their affiliates to recover their costs twice. The comments also proposed language modifying the SEER rating formula for valuation of solar air conditioners.

81. On May 3, 2005, Solargenix Energy, LLC filed comments on the April 22, 2005 draft rules. The comments opposed the size limitation of 1MW for Customer-Owned, Customer-Sited Distributed Renewable Energy Systems; allowing installations back to January 1997 to count toward the EPS percentages; and the Manufacturing Partial Credit. The comments proposed increasing the portfolio percentage over the next two decades by 25 percent; defining the "market cost of comparable conventional generation" based on the cost-avoidance of a combustion turbine (for evaluation of renewable peaking facilities) and combined cycle (for evaluation of shoulder and base load facilities) instead of on the utilities' avoided cost structure; that all bids and all projects be evaluated based on product value, product cost, and risk to ratepayers; that pre-approval of contracts for renewable energy resources be clarified; that utilities be given reasonable deadlines and

scheduling for time allowed for a contract award (60 days); that out-of-state projects be allowed only if they include an in-state project component; that the FERC definition of "Qualifying Facilities" apply to hybridization (fuel augmentation for renewable energy); and that quarterly reports be required delineating the success, failures, progress and setbacks that the Affected Utilities are experiencing.

82. On May 3, 2005, Stirling Energy Systems, Inc. filed comments on the April 22, 2005 draft rules. The comments stated that the EPS percentages are too low, and that a solar set-aside of 15 percent, growing to 20 percent, does not leverage Arizona's dominant renewable resource of abundant sunshine, but instead seems to encourage out-of-state wind or geothermal production. Stirling Energy Systems, Inc. stated that while the in-state multiplier for Arizona solar plants or solar equipment manufactured in Arizona is helpful, it does not begin to offset the current differential in price between the cheapest solar and the average-priced wind, and as a result, Arizona will lose the opportunity to create thousands of quality jobs and tax revenues in Arizona. The comments also stated that while the Purchased Power Agreement feature in the draft rule allows the utilities to entertain large-scale solar, the set-aside percentage is probably infeasible for any new projects in the 2006-2008 timeframe, given the time required for permitting, siting, and transmission upgrades, unless plant is already under construction at this time.

83. On May 3, 2005, Constellation NewEnergy, Inc. and Strategic Energy, LLC jointly filed comments on the April 22, 2005 draft rules. Constellation NewEnergy, Inc. and Strategic Energy, LLC plan to file applications for Certificates of Convenience and Necessity, which if granted, would make them Affected Utilities under the draft rule. They stated that initially, their total demand might be only in the 100 Mw to 900 Mw range, and requested that the EPS renewable percentage requirements apply to an Affected Utility only after the total load served by that utility in a year exceeds 1,000 Mw. They also proposed that working groups be established to investigate the use of tradable Renewable Energy Credits not just in order to comply with requirements for Distributed Renewable Energy and Distributed Solar Electric, but also as a compliance tool for the EPS and Solar Requirements.

84. On May 3, 2005, the Electric Cooperatives jointly filed preliminary comments on the

April 22, 2005 draft rules. Their comments stated that based on customer surveys conducted in 2003 and Member Advisory Council meetings conducted over the past four years, some of their member/customers are interested in a reasonable amount of green programs and renewable energy generation, but are sensitive to the costs. The Electric Cooperatives expressed concern that their member/customers will view the proposed increase in the EPS percentage and surcharge caps as a "back door" approach to force customers to participate in and finance a program they may not approve of. They also expressed concern with the impact the surcharge will have on school districts, which have multiple meters, and with the impact on customers' desire to be served by adjacent municipal providers, whose rates will not include the surcharge. The Electric Cooperatives proposed that their member/customers be allowed to opt-in to the surcharge, or that the surcharge be gradually increased over a longer period of time. The Electric Cooperatives also proposed that draft rule 1802(F), 1803(A), and 1803 (C) through (J) not apply to them, but that instead the requirements be determined in the context of the Electric Cooperatives' filing of an annual EPS Plan in compliance with draft rule 1805. The Electric Cooperatives proposed to be exempted from the Customer Self-Directed Option, because they believe it may affect their ability to meet the EPS percentage requirements contained in draft rule 1803(C); that it will limit their ability to undertake larger, more cost-effective EPS projects; that the option is available only to the largest customers; and that it will be difficult to ensure the reliability, output and proper operation and maintenance of customer-owned and operated systems.

85. On May 3, 2005, Sharp Electronics Corporation, Solar Systems Division filed comments on the April 22, 2005 draft rules. The comments stated that distributed solar generation PVs should be included in the EPS on a par with utility-scale solar PV projects. The comments stated that the following key factors are critical to the success of a distributed generation solar PVs: a long-term predictable schedule of market development incentives and budgets (5-10 years preferred); transparent and efficient standards for net metering and grid interconnection, such as those in place in ~~New Jersey; transparent program administration, such as the format used by the California Energy~~ Commission for its Emerging Renewables Program; and clear policy targets, including penalties for non-compliance. The comments also noted that a time lag for consumer response to consumer

rebates for distributed solar generation PVs is not atypical of other successful programs, and is not a predictor of its ultimate success or failure.

86. On May 3, 2005, the Sierra Club, Grand Canyon Chapter filed comments on the April 22, 2005 draft rules. The comments proposed an accelerated EPS percentage schedule of 7 percent by 2010, 12 percent by 2015, and 26 percent by 2025; that municipal solid waste and animal waste be specifically excluded from the definition of biomass; and that any new hydropower part of the distributed renewable energy requirement be low-head, microhydro, run-of-the-river systems which do not require damming the flow of the stream.

87. On May 3, 2005, the Renewable Energy Leadership Group filed comments on the April 22, 2005 draft rules. The comments stated that given the level of ratepayer investment required by the EPS, there should be consequences if a utility is not planning and implementing its EPS program to attain the renewable resource generation requirements.

88. On May 3, 2005, Interwest Energy Alliance filed comments on the April 22, 2005 draft rules. The comments stated that the amount of energy to be derived from non-solar, non-distributed generation resources is low and does not take advantage of the state's lowest cost renewable energy resource, wind; the requirement that qualifying electricity must be produced from in-state renewable energy projects is unnecessarily restrictive and violates the Commerce Clause; compliance plan requirements should be more specific; a review and approval process should be included for the implementation and compliance plans; EPS rate or tariff modifications should be tied to approval of compliance reports and implementation plans; utilities should be encouraged to purchase, bank and trade credits for renewable energy kWhs; municipal solid waste should not be included in the definition of biomass; the definitions section should include a definition of Above-Market Costs and separate definitions for Net Metering and Net Billing because they are not the same; and small wind should have parity with small solar electric systems.

89. On May 3, 2005, RUCO filed comments on the April 22, 2005 draft rules. RUCO commented that the definition of Net Metering should be more precise in order to answer questions about the actual rate at which the customer will be compensated for net contributed or offset kWh; that draft rule 1802(B) is ambiguous about whether a previously-approved EPS adjustor mechanism

supersedes the newly filed tariff required by draft rule 1802(A); that RUCO cannot evaluate the appropriateness of the proposed targets due to lack of explicit information regarding resource availability and funding adequacy; that the goal of an EPS should be a public policy objective that is forward-thinking and ambitious, consistent with funding adequacy; that the compliance reporting requirements should be defined more expansively, including but not limited to energy technology-specific information such as energy production and/or credit purchases, in-state versus out-of-state procurement, and costs relative to non-renewable energy markets, including utility proceeds from the banking, sale and trading of portfolio kWh; and that thought should be given to requiring the reporting of an Affected Utility's profitable portfolio kWh activities as a netting against renewable resource costs, whether acquired at a premium or otherwise, with gains used as an offset to the costs of the related renewable technology.

90. On May 3, 2005, the Hopi Tribe filed comments on the April 22, 2005 draft rules, commenting that the draft rule does not go far enough in supporting near-term development of Arizona's wind energy resources, and proposing that no set-asides be included for any particular technology. The comments also proposed that costs associated with the purchase of renewable energy be pre-approved by the Commission. The comments stated that wind development can help the Hopi Tribe diversify its current revenue base, which is heavily dependent on coal royalties currently threatened by the pending closure of the Mojave generating station.

91. On May 3, 2005, NZ Legacy, LLC filed comments on the April 22, 2005 draft rules, proposing specific language for the definition of biomass intended to include beetle-killed trees or other trees killed by drought or blowdown. NZ Legacy, LLC also commented that market cost should be defined for the purpose of calculating market cost for comparable generation.

92. On May 3, 2005, the Southwest Energy Efficiency Project filed comments on the April 22, 2005 draft rules. The comments proposed a change to draft rule 1802(E) to require Commission authorization of recovery of part of the costs of the EPS through a System Benefits Charge, if one exists, and also proposed that an Ordering Paragraph be included in this Decision directing Utility Distribution Companies to cease redirection of DSM System Benefits Charge funding to support the EPS and to restore DSM funding, and clarifying whether any other non-DSM

Systems Benefit Charge funds should be used to support the EPS. In addition, the comments proposed an EPS percentage of 12 percent in 2015 and 26 percent in 2025; inclusion of a definition for Market Cost of Comparable Conventional Generation; the removal or reduction of the in-state requirement so that Arizona customers can benefit from some lower cost renewable resources from other states and the total cost of the EPS will be reduced; the clarification of which renewable resources are eligible for the EPS; and the exclusion of municipal solid waste from the definition of biomass.

93. On May 3, 2005, the Greater Tucson Coalition for Solar Energy filed comments on the April 22, 2005 draft rules. The comments proposed an EPS of 9 percent by 2012 and 26 percent by 2025; increases in surcharge caps; a requirement of 50 percent for customer-owned and customer-sited distributed energy, solely eligible for the current distributed generation multiplier; competitive administration for customer-sited, customer-owned generation; addition of a definition for Market Cost of Comparable Generation; changes to the definitions of Biogas Electricity Generation, Biomass, and Net Metering; a change to draft rule 1802(E) to require Commission authorization of recovery of part of the costs of the EPS through a System Benefits Charge, if one exists; not allowing distributed generation funds not used in a year to be used for other purposes; inclusion of small-scale wind along with solar in selected Extra-Credit Multiplier programs; Commission approval of EPS plans; penalties for non-compliance; tying of compliance reports to changes in EPS tariffs; clarification that renewable energy credits can be sold or traded; and eligibility of out-of-state resources.

94. On May 3, 2005, the Vote Solar Initiative filed comments on the April 22, 2005 draft rules. The comments proposed a new definition of Net Metering and removal of the reference to Net Billing; a new section requiring the Commission's Utilities Division to develop standardized interconnection procedures; increasing the distributed solar set-aside; a third-party administrator of a rebate program for distributed solar electric funds; conservation and rollover of unused distributed generation funds instead of allowing them to be used for other EPS costs; eliminating Extra-Credit Mulitipliers, or in the alternative, changes thereto; penalties for non-compliance; establishment of a methodology for determining the market costs of non-EPS resources, along with a requirement that

Affected Utilities demonstrate that EPS funds are being used only for above-market costs; clarification of the Customer Self-Directed Option; and deletion of the in-state requirement. The comments included an appendix showing results from California's implementation of a distributed solar generation rebate program.

95. On May 3, 2005, AriSEIA filed comments on the April 22, 2005 draft rules. The comments proposed increasing the distributed solar electric requirement to 25 percent by 2008 and 50 percent by 2015; standardizing net metering and interconnection of distributed solar resources; and initiating workshops to establish the guidelines of the Uniform Credit Purchase Program and Customer Self-Directed Option Program prior to implementation of the EPS rule revision.

96. On May 3, 2006, the Arizona Cogeneration Association d.b.a. the Distributed Energy Association of Arizona filed comments on the April 22, 2005 draft rules. The comments proposed increasing the EPS percentages to 10 percent by 2010, 15 percent by 2015, and 25 percent by 2025; that qualified combined heat and power generators used in conjunction with renewable fuels or technologies be included as a Distributed Renewable Energy Resource; that the EPS have an energy efficiency component that complies with existing Commission and FERC PURPA rules; that Distributed Renewable Energy Resources be defined as non-utility resources; that competitive administration for customer-sited, customer-owned generation be implemented as proposed by AriSEIA and the Greater Tucson Coalition for Solar Energy; that a maximum of 25 percent of the EPS be purchased from out-of-state resources; that a portion of the EPS be directed to the biomass industry until 2015, which is the end of the first Healthy Forest Stewardship contract; and that no one renewable resource be allowed a set-aside of more than 25 percent of the total EPS. The comments stated that they did not address issues related to interconnection and rates, including net metering, as workshops were scheduled for their discussion.

97. On May 4, 2005, Dawn Solar Systems, Inc. filed comments on the April 22, 2005 draft rules, which supported the comments filed by the Arizona Cogeneration Association d.b.a. the Distributed Energy Association of Arizona in order to plan for coming higher oil and gas prices.

98. On May 4, 2005, S.O.L.I.D., USA, Inc. filed comments on the April 22, 2005 draft rules. The comments proposed alternative approaches to the EPS rule that it believes will support

solar electric and distributed generation in a way that does not penalize other technologies. S.O.L.I.D., USA, Inc. proposed including solar HVAC in the solar electric set-aside; restricting the distributed energy set-aside to non-utility projects; establishing limits within the distributed-energy set-aside for technologies already established in the marketplace; eliminating the multipliers, or alternatively, giving solar HVAC equivalent treatment to distributed solar electric; including third-party financed and owned, and district heating and cooling systems in the Customer-Owned, Customer-Sited definition; altering the definition of solar air conditioning for ease of administration purposes; including new definitions for solar air conditioning and solar HVAC; and including solar thermal in the net metering and net billing concept.

99. On May 4, 2005, Alter-Air Corporation filed comments on the April 22, 2005 draft rules. The comments stated that there is a need to reward manufacturers, distributors, and citizens who make, sell and use alternative cooling systems that can operate at measurable equivalent Seasonal Energy Efficiency Ratio ("SEER") greater than 20.

100. On May 4, 2005, PerfectPower, Inc. filed comments on the April 22, 2005 draft rules. The comments stated that it fully endorsed the comments and recommendations presented by the Distributed Energy Association of Arizona. PerfectPower, Inc. asserted that a conflict of interest exists where organizations collect, control, and distribute ratepayer funding for the EPS programs also compete in the market with non-regulated businesses.

101. On May 9, 2005, Gerald A. Sands, owner of a 960-watt PV roof-top system connected to the APS grid, filed a public comment letter in the docket stating that in order to provide incentives for both the customer and the utility to achieve a reasonable level of participation in roof-top solar or other clean energy in Arizona, net metering must be made the standard and that the utility should be allowed to count the PV capacity as part of their EPS goals.

102. On May 9, 2005, Rose Felder filed a public comment letter in favor of solar energy in Arizona.

103. On May 10, 2005, Commissioner Spitzer filed a letter in the docket stating his objection to the continuation of Extra Credit Multipliers in the EPS rules. Commissioner Spitzer stated that he is concerned that Affected Utilities will be encouraged to use scarce ratepayer resources

to build large-scale, expensive, inefficient facilities to maximize both capital ratebase and renewable credits; that the scheme is complex and will discourage small companies from participating; that it causes government to choose the winners and slam the door on all other competitors; that multipliers will continue to be used as a pretext to deny RFPs to small companies and technologies not favored by the artificial rules; that the percentage goals expressed in the EPS contemplate "real" kWhs, and the creation of artificial kWhs disguises reality, and should therefore be removed.

104. On May 20, 2005, Commissioner Mayes filed a letter in support of Commissioner Spitzer's proposal to remove the Extra Credit Multiplier provision from the draft EPS rule in order to eliminate "phantom" kWhs that are accounted for, but never produced, and to simplify the rule for all parties. Commissioner Mayes also proposed that individuals, companies, or utilities be allowed to take credit for Extra Credit Multiplier-backed projects that were initiated prior to the elimination of the Extra Credit Multipliers; and that the Commission must explore how their elimination will alter the EPS funding equation.

105. On June 1, 2005, Commissioner Gleason filed a letter identifying some principles upon which his specific comments on the April 22, 2005 draft EPS rules at the June 2, 2005 public comment meeting would be based. Commissioner Gleason's letter stated that the Commission should encourage the development of diverse domestic energy sources for environmental quality, job growth, and economics; that any increase in the EPS surcharge must be based on a clear understanding of the economic impact of increasing the subsidy on the people who will be paying for it, and must insure that any surcharge increase will go toward ratepayer benefits that will outlive the subsidy; that Arizona's current energy mix, while overly reliant on natural gas, is in other respects diverse; that Arizona has excess energy, and there is no imminent emergency; that the future of the solar industry does not depend on the extent to which it is subsidized in Arizona; that many new energy technologies have the potential to increase Arizona's energy diversity, including emerging solar technologies (thin-film PV, titanium dioxide nanostructured solar cells, "hot electron" solar ~~cells, 2-3 junction solar cells and II-V technology), integrated gasification combined cycle ("IGCC")~~ co-fired coal, dry-rock geothermal, new nuclear, and real time metering technology; that current solar PV is the most expensive source of renewable energy and is an obsolete technology; that it would be

unwise to mandate long-term investments in solar electric generation before the efficiencies of emerging technologies can be evaluated; that subsidies are rarely, if ever, terminated once established, and that Staff's proposal would create almost a $5 billion subsidy. Commissioner Gleason's letter also listed energy costs by source.

106. On June 3, 2005, Cochise County Board of Supervisors Chairman Patrick Call and Supervisor Richard Searle, as individual members of the Cochise County Board of Supervisors, filed letters expressing their opposition to a surcharge that they believed would add approximately 9 percent to Sulphur Springs Valley Electric Cooperative ("SSVEC") member bills at an approximate cost of $5 million to ratepayers. Chairman Call and Supervisor Searle commented that they are concerned that substantial increases will have a chilling effect on businesses and industries that may otherwise wish to locate in Cochise County.

107. On June 3, 2005, Paul Puttkammer, President, Winterhaven at Country Club Estates Homeowners Association, which serves a 600-home retirement community in Sierra Vista, Arizona, filed a public comment letter. Mr. Puttkammer requested that the Commission not enact the draft EPS rules. Based on SSVEC's estimates of projected surcharges, Mr. Puttkammer stated that the surcharge would be excessive and place an undue hardship on people living in retirement.

108. On June 3, 2005, John and June Newman filed a form public comment letter stating they are against the new proposed environmental portfolio standards because they do not want their monthly EPS surcharge increased and they do not want their local utility to be required to purchase renewable generation on the open market as it will lead to even higher electric bills. In handwritten comments, the letter stated that increases would pose a burden on them and requested that if increases are a must, that the Commission consider smaller increases.

109. On June 3, 2005, Phillip E. Wralstad filed a public comment letter stating that surcharge increases as set forth in the draft EPS rule must not be approved, that requirements for energy that exceeds the cost of current production costs should not be put in place, and that energy should be acquired from renewable resources when they provide price-competitive production. Mr. Wralstad stated that Arizona's population includes a large number of retired people living on fixed incomes, and requested that regulations not be established that result in large increases in their

expense budgets each year. Mr. Wralstead requested that the Commission exercise prudent judgment, taking into consideration the welfare of Arizona's citizens, and determine and establish only provisions that are fair, equitable and affordable for the people of this state.

110. On June 6, 2005, Maid in the USA Inc., member of the Bullhead City Chamber of Commerce, filed a letter in opposition to the proposed changes to the EPS, stating that it will result in increased costs to businesses, municipalities, hospitals, public schools and residential consumers.

111. On June 6, 2005, Joe Shirley, Jr., President of the Navajo Nation, filed a public comment letter applauding the expansion of markets for renewable energy in Arizona, but stating that the April 22, 2005 draft rules would not create a sufficient market for development of the extensive wind resources located in Arizona's Indian Country. Mr. Shirley stated that it is imperative that the EPS establish targets that ensure the development of Navajo wind lands and other substantial Arizona wind resources can all progress this decade.

112. On June 6, 2005, Thomas J. Hessler, Mayor of the City of Sierra Vista, filed a public comment letter stating that the April 22, 2005 draft rules would be detrimental to the residents of the greater Sierra Vista community. Mr. Hessler proposed that EPS targets be set lower, and that if a surcharge increase is absolutely necessary, it be increased by no more than 50 percent, and gradually increased in phases in subsequent years.

113. On June 6, 2005, Susan Tegmeyer, President/CEO of the Sierra Vista Area Chamber of Commerce, filed a public comment letter protesting the April 22, 2005 draft rules, stating that charging by meter does not necessarily address those using the most power, and places a heavy burden on organizations and businesses that have multiple locations or units and are therefore required to have multiple meters. Ms. Tegmeyer expressed a concern that rising electric costs will act as a deterrent to prospective incoming businesses and residents, and will hurt business and community development.

114. On June 7, 2005, Glenn and Diane McDaniel filed public comment letters stating that ~~while they are not familiar with all the facts surrounding the new EPS, they are strongly opposed to~~ the proposed surcharge and the proposed minimum renewable energy percentage.

115. On June 13, 2005, Nancy L. Rea filed a public comment letter stating she is against

the new proposed environmental portfolio standards because she does not want her monthly EPS surcharge increased and does not want her local utility to be required to purchase renewable generation on the open market as it will lead to even higher electric bills.

116. On June 13, 2005, a public comment letter was filed in opposition to "3 cents against 24 cents Subsidized Alternative Power." The comment stated that burdening the ratepayers with subsidized alternative power failed to produce results with federal subsidies in California for windmills and solar panels, and requested that the Commission protect the ratepayer.

117. On June 14, 2005, Commissioner Spitzer filed in the docket a copy of a letter to the editor responding to an editorial that appeared in the *Arizona Republic*. Commissioner Spitzer stated that the editorial "conveniently ignores" the following facts: 1) oil trades at $50 per barrel and natural gas has risen from $2/MBTU to $7/MBTU, with hundreds of thousands of U.S. jobs lost as a direct consequence; 2) natural gas sets the marginal price of electricity and wind power is competitive right now; 3) distributed generation, largely solar, enhances the reliability of the grid and reduces the need for expensive and politically unpopular transmission lines; 4) production of electricity from decayed timber in northern Arizona (wood biomass) cleans the forest, employs Arizonans, adds sales, property and income taxes to state and local governments and produces near-zero emission electricity directly to the grid at competitive prices; 5) fossil fuels have been heavily subsidized by the taxpayers since the 1950's, while EPS is only a fraction of those subsidies; fossil fuels impose health costs not reflected in the price of electricity (health care, consumer and business compliance with air quality laws, and the incalculable costs of lung disease); 7) fossil fuel power plants consume large amounts of Arizona water in the face of massive drought, another cost of fossil fuels not reflected in the price of electricity; and 8) the economic costs of the EPS are trivial compared with the cost to the ratepayers of $2 billion dollar coal plants and surcharges for increasing natural gas commodity prices. Commissioner Spitzer's letter stated that while "real time pricing" does reduce peak demand, it is not a panacea, as interruption of service is not always practical for residential ratepayers, or economically affordable for many large and small businesses. Commissioner Spitzer's letter further stated that the EPS does not impose an unfunded mandate on the utilities; that it is market oriented in that government does not mandate or demand prior approval of specific projects; and that it is good for

Arizona ratepayers and for the environment.

118. On June 15, 2005, J. Robert (Bob) Wolcott filed his comments on energy planning, which he stated were based on recent newspaper accounts. Mr. Wolcott questioned whether sufficient justification exists for mandates. He stated that windpower and solar power are intermittent sources unsuitable for base-loading, use as peaking power, building reserve capacity, or serving in a backup role; that windpower and solar power require reliable backup power; that as a consequence, in a free market intermittent power will logically be sold at lower prices than firm power; and that large land requirements are a major problem seldom mentioned.

119. On June 20, 2005, Commissioner Mayes filed a copy of a letter to the editorial department of the *Arizona Republic* responding to the editorial. Commissioner Mayes' letter stated that the debate over expanding renewable energy in Arizona "contains echoes of the 1971 fight over funding for the now indispensable Central Arizona Project." Commissioner Mayes' letter stated that it is important to act now to boost the amount of renewable energy required of Affected Utilities because the cost to produce traditional gas-fired electricity could soon outstrip the price of renewables like wind, landfill gas and even someday solar energy; solar panels on residential rooftops help reduce the need for unsightly high voltage power lines and relieve an electrical grid that is under strain from the influx of new Arizona residents; and that solar panels reduce a homeowners' energy costs over time, as well as someday allowing that homeowner to sell unused energy back to the utility. Commissioner Mayes' letter stated that despite being the first to require renewable energy, Arizona has fallen behind other states, and that New Jersey now does more rooftop solar than Arizona.

120. On June 21, 2005, Arizona PIRG Education Fund filed a letter to which was attached copies of over 325 e-mails it received to forward to the Commission from citizens interested in seeing an increase in the EPS to 10 percent by 2015 and 20 percent by 2020, and who would like to see municipal solid waste removed from the definition of biomass.

~~121. On June 23, 2005, Commissioner Mundell filed a letter to the Commissioners~~ elaborating on concerns he raised at the Special Open Meeting held on June 2 and June 3, 2005. Commissioner Mundell's letter stated a concern with the degree to which small business owners will

be impacted by a surcharge increase; that a more equitable distribution of the costs of compliance with the EPS could be accomplished by utility investment or having monies collected through the EPS surcharge be used only to pay for the "above market costs" of renewables; and that definitions of the terms "above-market costs" and "market cost for comparable conventional generation" should be examined. Commissioner Mundell's letter also stated that the Arizona Constitution gives the Commission authority to impose penalties even without explicit penalties being stated in rules; that a provision in the draft rule allows utilities to request a waiver from EPS requirements if they fail to meet requirements in a given year; and that the possibility of allowing utilities to make voluntary payments to be used for the development of renewable energy sources should be discussed. Commissioner Mundell's letter stated that the issue of independent administration should be further discussed; that significant time lag between the implementation of a new EPS and implementation of a uniform standard for interconnection and net metering may result in additional delays for compliance; that removal of extra-credit multipliers from the rules in order to eliminate distortion of the portfolio caused by "phantom" kilowatt hours seems appropriate. Commissioner Mundell's letter stated that the EPS has historically had a strong solar requirement and he is concerned with proposals to eliminate the solar set-aside in conjunction with the elimination of the extra credit multipliers, which would lose focus on one of the primary goals set out by the current EPS – the cultivation of solar resources in Arizona.

122. On June 24, 2005, Commissioner Gleason filed a copy of a letter addressed to Mr. Roy Dunton, thanking him for his letter of June 9, 2005. Mr. Gleason's letter stated that he believes it would be unwise to require utilities to spend surcharge funds on solar electricity now, when solar continues to be the most expensive form of "renewable" energy; that he hopes the subsidy can be directed to some form of energy that is much more economical than solar; and that he will work to ensure that any benefits from alternative energy last longer than the subsidy, which must come to a certain end.

123. On June 27, 2005, President Michael Peevey of the California Public Utilities Commission filed a letter encouraging the Commission to move forward with the Staff recommendation to strengthen the EPS requirements to 15 percent by 2025, and to include a

requirement that some portion of that requirement be met by distributed solar installations. President Peevey stated that the western electricity grid is quite integrated, and he believes California and Arizona can work together to encourage renewable power investments throughout the region.

124. On June 29, 2005, Commissioner Spitzer filed a letter to the Commissioners and the parties stating that the multipliers in the current EPS, combined with the utilities' innate preference for central station technology, produce an unacceptable bias against economical wind, important biomass and distributed solar projects; that the bias must be removed as soon as possible; and that financial support for renewables must be enhanced. Commissioner Spitzer's letter stated that high natural gas prices make wind energy immediately competitive, even recognizing the intermittent nature of the resource; that wood biomass is important to northern Arizona; and that distributed generation within major load pockets adds to system reliability and is the heart of Arizona's solar economy. Commissioner Spitzer stated that the Commission must be mindful of and frugal with ratepayer funds, but that communications from constituents reflect a true desire to reduce consumption of increasingly expensive fossil fuels for environmental reasons and economic necessity. Commissioner Spitzer also stated that accurate information needs to be presented to the people, noting that one utility apparently ignored the impact of caps for commercial ratepayers in calculating the net effect of the Staff proposal, and stated that it would be a travesty of justice if false information, purposeful or not, changed the outcome of this proceeding. Commissioner Spitzer stated that wind power, wood biomass plants in northern Arizona and distributed generation in Arizona homes and on Arizona rooftops have little chance under the current EPS, and that without change, ratepayer funds will continue to be spent on extraordinarily expensive, central station systems far removed from the load pockets.

125. On July 6, 2005, APS filed a letter in the docket expressing its continued support for the use of renewables in generating electricity and providing additional information requested during the June 2 and June 3, 2005 Special Open Meeting. In response to a request for information regarding the economics of electricity generated from solar resources, the letter included a graph depicting the relative economics of distributed solar versus large scale solar projects. The letter stated that the graph shows that with the current cost of installing a large scale tracking solar system

at $5.40/Watt (AC), the value, in terms of kWh/$, is the same as that afforded by a rooftop system buy-down program at a level of $3.00/Watt (AC). The range of costs in the graph were based on the value agreed to by the EPS working group and allowed under the current methodology (1,890 kWh/kW-yr) and the average cost of actual generation from rooftop applications that have been metered (1,300 kWh/kW-yr). In response to a request that APS explain its position regarding the Federal Investment Tax Credit for renewable installations, APS stated that because the rates associated with APS' solar facilities are cost of service rates established and approved by the Commission with a specified rate of return, APS is precluded from claiming the Internal Revenue Code credit for the cost basis in its solar facilities.

126. On July 12, 2005, Patricia Matthews of the Social Justice Committee of the North West Valley Unitarian Universalist Church filed a comment letter urging the Commission to increase Arizona's minimum standards for the production of energy by renewable resources like wind, solar and clean biomass to 10 percent by 2014 and 20 percent by 2020 to ensure cleaner air for Arizona's residents.

127. On July 13, 2005, Cindy Craig, Youth Program Manager for the Youth Volunteer Corps, a program of Youth Count, filed a comment letter stating that health threats posed to Arizona's children by dirty energy sources can be reduced by decreasing our reliance on fossil fuels. She urged the Commission to increase minimum standards for Arizona's renewable energy sources, like solar and wind, to 10 percent by 2015 and 20 percent by 2020.

128. On July 18, 2005, Kathy Smith, Executive Director, Willcox Chamber of Commerce and Agriculture, filed a letter to which was attached several pages of signed petitions collected within the Willcox area. The letters stated that the signers are against the new proposed environmental portfolio standards because they do not want their monthly EPS surcharge increased and do not want their local utility to be required to purchase renewable generation on the open market as it will lead to even higher electric bills. Ms. Smith's letter stated that it is her understanding that many of the farmers and ranchers in the area have converted their irrigation pumps from natural gas to electric, that many have multiple irrigation pumps, and that per-meter surcharges will make the farmers and ranchers unable to compete with farmers and ranchers in surrounding communities not subject to the

surcharge.

129. On July 18, 2005, Commissioner Gleason filed a letter to the Commissioners responding to Commissioner Spitzer's June 29, 2005 letter. Commissioner Gleason's letter stated that he agrees that the extra credit multipliers should be eliminated because they create biases against other technologies that may prove more economical. Commissioner Gleason's letter also stated that we must recognize that power from economic wind and biomass resources would be generated some considerable distance from load pockets and would thus entail transmission infrastructure and capacity costs which are economically disadvantageous. The letter stated that it is equally important to recognize that distributed solar generation also has substantial transmission and distribution costs because solar-generated power is not firm power and physical means must be provided for backup power and to distribute excess power to the grid. Commissioner Gleason's letter stated that his communications with West Valley residents suggests that the EPS program is not popular, and that Behavior Research Center's 1999 survey indicated that a majority of the public was unwilling to pay more for solar-generated power than conventional power and believed that people who choose to receive solar generated electricity are the ones who should pay for it. Commissioner Gleason's letter stated that although there is a 50 to 200 year fossil fuel supply, there is a real need to remedy Arizona's over reliance on natural gas by investigating and developing diversified energy resources, but that we must remain mindful of our obligation to all ratepayers, whether they are willing to pay a premium for alternative power or not, to see that surcharge revenues are used for the most economical energy. Commissioner Gleason's letter stated that he is skeptical of increasing EPS funding without realistic assurances that the public benefits of the EPS will outlive the subsidy.

130. On July 19, 2005, Commissioner Gleason docketed letters requesting information from TEP and APS.

131. On July 20, 2005, a public comment letter was filed by Beaver Street Brewery, Visible Difference Drafting Blueprint and Art Supply, Café Ole, DeColores Del Barrio, Babbitts Mercantile, Inc., Ed Dunn Sustainable Design, John Vandingham, and Aspen Auto Electric, Inc. The letter stated that the signatories support increasing the standard to at least 7 percent by 2010 and 20 percent by 2025 for the following reasons: the Flagstaff area has a long standing commitment to developing

renewable energy resources and increasing the standard will support local policy and the creation of new business; the Flagstaff and Coconino County area has solar, wind, and biomass resources that when developed, will provide jobs and revenues to their community; continued sole reliance on fossil fuels and nuclear power is risky given the rising cost of fuel and price fluctuations; developing Arizona and Western clean energy resources will reduce vulnerability to fuel supply disruptions; and the long term, stable priced electricity that comes from renewable energy is essential for economic prosperity for the business community. The comment letter requests that the Commission work to maximize the amount of renewables to be built or purchased, while minimizing costs and maintaining a market for solar energy, and stated that allowing flexibility for utilities but maintaining strict accountability is key to ensuring that ratepayer money is spent wisely.

132. On July 21, 2005, several pages of signed petitions from the Elfrida, Pearce, and McNeal and San Simon area were filed, stating that the signers are against the new proposed environmental portfolio standards because they do not want their monthly EPS surcharge increased and do not want their local utility to be required to purchase renewable generation on the open market as it will lead to even higher electric bills.

133. On July 25, 2005, Commissioner Gleason filed a letter to the Commissioners stating that cost is an important factor in deciding how much non-firm and non-dispatchable renewable energy to require under the EPS, but reliability is paramount, and grid reliability must be protected at all costs. Commissioner Gleason's letter stated a concern that enactment of the draft EPS rule will result in distortions of the markets for electrical power, increased costs to ratepayers, decreases in base capacity grid reliability, and diversion of resources from promising research into new sources of energy. The letter expressed a concern that real environmental costs due to outdated technology, government mandates, special interests and mistaken theories will be passed on to ratepayers disguised as normal production expenses.

134. On July 25, 2005, 11 public comment letters were filed in support of an EPS requirement consisting of solar, wind, biomass and geothermal energy of 10 percent by 2015 and 20 percent by 2020.

135. On July 25, July 27, and July 28, 2005, public comment letters were filed by Joyce J.

Kelly, Jerry Samaniego, owner of Expert Solar Systems, Erika L Roush, and Katharine J. Kent, P.E., in support of increasing the EPS to at least 10 percent by 2010 and 20 percent by 2020 in order to support Tucson local policy and the creation of new business, jobs, and revenue; in order to decrease reliance on fossil fuels and nuclear power; and in order to reduce vulnerability to fuel supply disruptions. Ms. Kelly stated that the long-term, stable priced electricity that comes from renewable energy is essential for economic prosperity for the business community; that the modest increases proposed are reasonable given the environmental gains; and that allowing some flexibility for utilities but maintaining strict accountability is key to ensuring that ratepayer money is invested wisely.

136. On July 27, 2005, Commissioner Gleason filed a letter in response to the comment letter filed by Kathy Smith, Executive Director of the Willcox Chamber of Commerce, thanking her for putting her concerns and those of more than 200 other citizens on the record. Commissioner Gleason stated that he does not favor subsidies to support government-mandated ventures that would otherwise be uneconomic. Commissioner Gleason further stated that despite his skepticism regarding the EPS' benefits and deep concern over its cost to ratepayers, there is widespread support for increasing the surcharge by many times its current rate, and under these circumstances, he is encouraged to know that unqualified support for raising the EPS is not universal.

137. On August 2, 2005, Commissioner Gleason filed a letter to the Commissioners including his calculation of the cost of non-firm power that would be mandated under the draft EPS rule. Using the data supplied at Tab 4 of Staff's December 16, 2004 Staff Report and its June 23, 2005 revision, the infrastructure costs in his most recent letter, and the average residential usage of electrical energy, Commissioner Gleason calculated average annual residential cost of $33.66 for 2006, increasing to $153.49 by 2025.

138. On August 5, 2005, Commissioner Gleason filed a letter to the Commissioners that included his estimation of the cost of the EPS for one hypothetical small business office by applying the same back-up infrastructure cost factor ($.07/kWh) from his letter of July 25, 2005 to usage data for two small business offices in 2004. Commissioner Gleason estimated an average annual cost of $94.23 for 2006, increasing to $429.68 by 2025.

139. On August 5, 2005, Paul Oppenheimer filed a comment letter in support of increasing

Arizona's minimum standards for the production of energy by renewable sources such as solar, wind and clean biomass to 10 percent by 2015 and 20 percent by 2020 in order to ensure cleaner air for families everywhere.

140. On August 8, 2005, 73 comment letters were filed urging the Commission to support a requirement for 10 percent clean, renewable energy sources by 2015 and 20 percent by 2020. The comments expressed support for more renewable energy for environmental, air pollution, public health and economic reasons.

141. On August 8, 2005, TEP filed its response to Commissioner Gleason's July 19, 2005 letter requesting information about the TEP solar program, the current costs associated with installation by homeowners of solar electric generation systems, and the expected future costs of meeting the distributed solar electric goals of the current proposed EPS rule. The response stated that while the TEP solar team has been committed to providing TEP customers interested in pursuing their own solar generating systems with all the necessary information required to make an informed decision on the installation of PVs, TEP's advertising and marketing materials for its solar energy programs do not reference or make any claims to the economic viability of distributed solar electric units. The response stated that the average specific cost for a SunShare Option 1 system from 2001 through 2004 was $7,872 per kW DC; that in 2004 the cost dropped to $7,498 per kW DC, for an average 1,920 watt DC system, indicating a trend of reducing cost from the $8,727 per kW DC in 2003; and that on an AC basis, the cost of an average 2004 Tucson installed 1.920 kW DC PV system would be about $11,360 per kW AC, and cost the customer $21,811 before $6,760 in TEP SunShare rebates and applicable Arizona tax credits, for a net customer cost of $15,051 total. The response stated that TEP would expect to spend $10.4 million in subsidies and another $1.8 million in testing and annual maintenance support costs for the 18 MW of customer sited PV expected to be installed by the end of 2010, and that this estimate is based on the following assumptions: utility scale PV will not be given credit for distributed solar electric credits; no multipliers are used; no independent administrator; subsidies will be in the form of an up front payment of $1.50 per DC watt in 2010; grid integration costs are zero in 2010; and customers have found that there is no cost to them from reliability problems that have been discovered.

142. On August 8, 2005, APS filed its response to Commissioner Gleason's July 19, 2005 letter regarding the economics of the electricity generated from solar resources. APS stated that its response is based upon actual costs in the APS EPS Credit Purchase Program, which purchases credits from customers who buy and install new solar energy systems for a home or business. APS provided a table showing average $/watt DC costs ranging from $7.03 to $7.27, and average $/watt AC costs ranging from $8.28 to $9.19, depending on system size. The response stated that the EPS Credit Purchase Program offers customers who have installed new PV systems the opportunity to receive a one-time payment from APS for the sale of the renewable energy credits associated with the energy generated by the PV system. The response stated that in 2004, APS increased the purchase price of the renewable energy credit from $2/watt to $4/watt (up to 50 percent of the total system costs), and the total amount available for the program from $1 million to $2 million; that customers reserved about $1.8 million in 2004; and that at the time of the response, approximately $1.1 million of the $2 million available for 2005 had been reserved by customers planning on installing PV systems. In its response, APS estimates that 14.8 MW of rooftop solar would be needed in 2010, at a cost of approximately $60 million, based on the following assumptions: the distributed generation requirement would be all customer-owned and distributed solar would fulfill the entire distributed requirement; the solar multiplier would be continued; and in 2010, the solar requirement would be 18 percent of the overall EPS; and the EPS Credit Purchase Program amount of $4/watt would remain the same. The response stated that the Uniform Credit Purchase Program currently under discussion could change the amount per watt paid to participants and the total estimated cost.

143. On August 8, 2005, letters from Arizona PIRG Education fund dated July 7, July 19, and August 5, 2005 were filed. The July 7, 2005 letter urged the Commission to increase Arizona's EPS to at least 20 percent by 2025, and stated that increasing the EPS target from 15 percent by 2020 to 20 percent by 2020 would create 3,200 more jobs in person-years total through 2020; increase wages by $120 million more; raise the gross state product by $277 million more; save 3.1 billion more gallons of water; reduce NOx pollution by 2,700 more tons per year in 2020; reduce SOx pollution by 2,300 more tons per year in 2020; and reduce CO2 pollution by 580,000 more tons per year in 2020.

144. Arizona PIRG Education fund's letter dated July 19, 2005 addressed the issue of municipal solid waste, recommending that it be included in the definition of biogas through a digester process but removed from the definition of biomass, because many household items that can be harmful when burned such as plastics are present in Arizona landfills, and that burning municipal solid waste would likely not be considered for at least a decade in Arizona due in part to air quality and permitting issues in areas such as Phoenix and Tucson.

145. Arizona PIRG Education fund's letter dated August 5, 2005 listed the following support for increasing the amount of clean, renewable energy in Arizona as follows: in a statewide poll conducted by the Behavior Research Center, 80 percent of those asked stated they would pay up to an extra $2 per month to cover the cost of using more renewable energy; over 125 residents from Jerome, Maricopa, Gilbert, Scottsdale, Phoenix and elsewhere in the state have written letters to the Commission urging an increase in the state's EPS to 10 percent by 2015 and 20 percent by 2020; over 500 concerned Arizonans from Peoria, Cave Creek, Chandler, Paradise Valley, Mesa and elsewhere in the state have sent an e-mail to the Commission urging an increase in the state's EPS to 10 percent by 2015 and 20 percent by 2020 and the removal of solid municipal waste from the definition of biomass; over 4,500 individuals from Clarkdale, Glendale, Queen Creek, Casa Grande, Safford and elsewhere in the state have signed postcards to the Commission urging an increase in the state's EPS to 10 percent by 2015 and 20 percent by 2020 and stating "this clean energy investment is worth a few extra dollars on our electric bills;" constituency groups have submitted letters supporting an increase in the state's EPS to 10 percent by 2015 and 20 percent by 2020; media attention for door-to-door canvassing efforts has been gained in Prescott, Payson, and Winslow; guest commentaries on energy efficiency and renewable energy have appeared in the *East Valley Tribune, Tucson Citizen* and the *Gilbert Independent;* and letters to the editor have been published urging an increase in the state's EPS to 20 percent by 2020.

146. Also on August 8, 2005, several comment letters were filed, from Jim DiPeso, Policy Director of REP America, a national grassroots organization of Republicans for environmental protection; Rebecca Ruffner, Executive Director of Prevent Child Abuse Arizona; Avtar Khalsa, Executive Co-Director of Coconino Coalition for Children and Youth; Maceo Brown, Executive

Director, and Serena Unrein, Associate Executive Director of Arizona Students' Association; Kenneth J. Bermer, President of the American Council on Consumer Awareness, Inc.; John Lamb of Union Optical in Phoenix; Rebecca D. Carlson, D.C. of Renaissance Chiropractic; David Maurer, CEO of the Prescott Chamber of Commerce; Bill Bond, of CareFree Write Productions; and Amy Krajewski of Amy K Music Company. The letters stated that renewable energy development will bring significant economic and environmental benefits to the state, including reduced air pollution and greenhouse gas emissions, rural economic development and manufacturing jobs growth, and hedging of fuel price risks; that air pollution from dirty sources like coal-fired power plants has been linked to increased incidence of childhood asthma and that mercury released by those sources accumulates in fish and leads to neurological and developmental problems for children, infants and developing fetuses; that Arizona's current reliance on fossil fuels creates an unhealthy environment for college students and people of all ages, and that sound environmental policies can reduce the ill effects; that pollution from fossil fuel-fired plants causes respiratory and cardiovascular diseases which increase medical expenses and decrease productivity while profits flow to out-of-state fuel suppliers; that Arizona can attract new business and create new jobs by shifting toward clean, renewable energy sources like solar and wind, instead of handicapping our state with dirty, outdated technology; that allowing flexibility for utilities but maintaining strict accountability is key to ensuring that our money is spent wisely; and that a healthy environment and a sound economy are both essential to our nation's prosperity. The letters urged the Commission to increase the state's minimum standard for renewable energy generation to 10 percent by 2015 and 20 percent by 2020.

147. Also on August 8, 2005, AriSEIA filed a comment letter prepared on behalf of the Vote Solar Initiative, WRA, Arizona PIRG Education Fund, and AriSEIA, responding to concerns raised in Commissioner Gleason's July 25, 2005 and August 2, 2005 letters that the revised EPS would be unduly expensive because it would require large expenditures to avoid degradation of system reliability. The letter stated that maintenance of system reliability at reasonable cost is an ~~important consideration; that intermittent generation does not degrade reliability and imposes~~ minimal cost to maintain reliability; that deployment of renewable energy does not require utilities to build more conventional generation capacity than they otherwise would have; that the costs of

renewable energy should be represented as net costs, and that it is not clear whether Commissioner Gleason's cost figures are net costs; that distributed generation reduces transmission and distribution costs; and that renewable energy also produces environmental, health, and other benefits that should be included in net costs, including fuel diversification, avoided water use, and avoidance of the environmental and health impacts of SOx, NOx, and other emissions of fossil fuel plants; and that renewable energy serves as a hedge against the costs of complying with potential future greenhouse gas emission regulations.

148. Also on August 9, 2005, 29 handwritten public comment letters were filed requesting that the Commission increase the EPS to at least 10 percent by 2015 and 20 percent by 2020 consisting of solar, wind, biomass and geothermal energy sources, in order to benefit the economy, the environment and public health.

149. Also on August 9, 2005, Warren Byrne, President and CEO of Foresight Wind Energy, LLC, filed a comment letter addressing the development of wind resources in Arizona; the cost of wind versus new fossil generation; the effect of load growth on cost; and transmission availability.

150. Also on August 8, 2005, APS filed a spreadsheet that included the following information for each month in 2004 and for the first six months of 2005: overall average usage for its residential class, average usage by month by rate; and the number of customers on each rate schedule.

151. Also on August 8, 2005, the City attorney for the City of Kingman, at the unanimous direction of the Mayor and City Council, filed a letter expressing concern with the potential costs associated with the proposed changes to the EPS rules. The letter stated that the proposed surcharge increase would result in a financial hardship that would jeopardize Kingman's ability to deliver the necessary level of water, street and traffic lights, and facilities and equipment for safety personnel. The letter further stated that the increased surcharge would put communities served by public utilities at a competitive disadvantage in attracting and retaining business and industry, and would burden other institutions within the community. The letter requested that the Commission consider an equitable allocation of the costs associated with establishing a supply of alternate and renewable energy that will not unreasonably interfere with the city's delivery of necessary services to its citizens

or impede economic development.

152. On August 8, 2005, August 26, 2005, and September 2, 2005, letters were filed from Susan Culp, Executive Director, Interim, of the Arizona League of Conservation Voters in support of increasing the EPS to 10 percent renewable energy by 2015 and 20 percent by 2020. The letter stated that clean, renewable energy reduces reliance on fossil fuels, reduces air pollutants and associated impacts on the public health; produces jobs and economic prosperity; keeps more energy dollars in the state; and that the associated increased costs would, in the long run, yield benefits far greater than the initial investment in terms of quality of life, energy independence, and economic development.

153. On September 2, 2005, a comment letter from Donald H. Ryan was filed stating that he has designed and built two solar energy homes, one in California and one in Payson, Arizona; that the cost and installation of solar energy home equipment is quite reasonable and can be very effective for water heating and house heating; and that Arizona is negligent in not having an active program in promoting the usage of solar energy in all buildings, especially homes.

154. On September 2, 2005 and September 15, 2005, Clean Energy Group filed a comment letter. The letter stated that Arizona's approach to its EPS program is unique in that it is managed directly by the regulated electric utilities, which collect the surcharge tariff and determine what renewable projects to procure and what EPS credit purchase programs to offer, whereas most other states with clean energy efforts have established independent administrators to accelerate the development of renewable energy. Clean Energy Group commented that the Commission may want to consider establishing shared responsibilities between utilities and a new independent administrator for meeting EPS goals, and offered its assistance as the Commission considers the merits of establishing the appropriate administrative oversight of the program.

155. On September 7, 2005, Tom Kerr, Chief of the Energy Supply & Industry Branch of the U.S. Environmental Protection Agency filed a letter in this docket. The letter stated that the U.S. Environmental Protection Agency's Combined Heat and Power Partnership understands that the Commission is evaluating proposals for proceeding with the development of an interconnection standard. The letter stated that Arizona's interconnection standard can play a key role in increasing the amount of clean energy supply in the state, and included as an attachment a U.S. Environmental

Protection Agency Combined Heat and Power Partnership fact sheet that distills state best practices in developing an interconnection standard, including adopting IEEE 1547 and UL 1741 and tailoring rules to address specific issues faced by different project sizes.

156. On September 9, 2005, Joseph W. Mulholland, Executive Director of the Arizona Power Authority, filed a comment letter. The Arizona Power Authority recommended that the Commission classify all emissions-free generation sources as renewable, including all existing hydropower assets. The Arizona Power Authority stated that such classification would begin to help recognize the significant air emission offsets provided by the state's hydropower assets, which will become increasingly important to the state's future growth and economy as national emission standards tighten. The comments stated that "old hydropower" credits could be held in a separate account portfolio so as not to impede or discourage the development and spread of new renewable generation projects. The comments also recommended that the EPS encourage cooperation between renewable energy developers, utilities, and Native Americans, and encourage location, where practicable, of projects and infrastructure upon Native American lands.

157. On September 22, 2005, 16 handwritten letters were filed in support of increasing the EPS to 15 percent by 2025.

158. Also on September 22, 2005, a copy of a letter to Senator Jake Flake from Dan Adams was filed. The letter encouraged Mr. Flake to try to slow down the Commission's efforts to require utilities to purchase more power from alternative sources. Mr. Adams' letter also included a list of things Mr. Adams believes the legislature can do to control and reduce energy costs to the people of Arizona, which list included "Force the Corporation Commission to fully consider economic factors when setting rules and goals."

159. On October 6, 2005, Arizona PIRG Education Fund filed a letter stating it had recently collected email letters for the Commission from over 220 concerned citizens signifying continued support for the Commission's movement toward increasing renewable energy in Arizona.

160. On October 13, 2005, two handwritten letters were filed indicating support for increasing renewable energy requirements.

161. On October 27, 2005, Commissioner Mundell filed a letter to the Commissioners

suggesting that the Commission consider the EPS rules as soon a possible after issuance of new draft rules and stating that it is vital to keep in mind the interrelationship of rates and renewable energy issues, and the importance of developing more renewable sources of energy, especially given the skyrocketing cost of natural gas.

162. Also on October 27, 2005, a public comment letter was filed in support of a requirement for 15 percent renewable energy by 2025 due to concerns about clean air and asthma in children.

163. On October 31, 2005, Commissioner Mayes filed a letter to the Commissioners thanking them for their continued efforts on the EPS and stating her hope that the Commission would be in a position to vote on the draft rules before year's end.

164. Also on October 31, 2005, Chairman Hatch-Miller filed a copy of an e-mail he sent to Diane Brown, Executive Director of Arizona PIRG Education Fund commenting on the timeline for the EPS and DSM.

165. On November 3, 2005, the Arizona Power Authority filed a letter recommending the addition of language to the EPS rules regarding EPS energy credits for improved efficiencies at existing hydropower facilities and use of hydroelectric generation with renewable energy generation resources.

166. On November 8, 2005, Commissioner Gleason filed a letter to the Commissioners stating that before putting the draft EPS rules to a vote, the Commission should allow whatever time may be needed to thoroughly evaluate their monetary impact on the regulated utilities and their customers.

167. On December 5, 2005, the Navajo Tribal Utility Authority filed a letter stating its support for the new EPS rules for Distributed Generation and utility scale wind generation. The comments stated that development of Tribal wind resources will provide economic diversification, new revenues, new business models, and the important environmental benefits of pollution-free energy generation with no water consumption. The Navajo Tribal Utility Authority stated that because the current draft EPS rules provide no in-state requirement or preference, unlike those of neighboring states, they create an unbalanced playing field that benefits other states to the detriment

of Arizona Tribes, rural communities and ratepayers, and requested that the Commission consider including some form of preference for in-state projects.

168. On December 7, 2005, the Arizona Cattle Growers' Association filed a letter supporting the new EPS standard. The comments stated that renewable energy development on rural lands provides economic diversification for ranchers; an alternative to subdividing ranches for development; and compatible land use with grazing and other agriculture. The comments also stated that clean energy development protects air quality, preserves watershed, and conserves open space. The Arizona Cattle Growers' Association requested that the Commission carefully consider the need for some form of in-state requirement or preference for renewable energy projects because other Western states, including New Mexico, Nevada, Texas and Colorado, all have provisions to favor their in-state projects.

169. On December 8, 2005, Elizabeth C. Archuleta, Chairman of the Coconino County Board of Supervisors, filed a letter expressing support for some form of provision in the EPS rules for in-state projects. The letter stated that Coconino County has abundant sources of renewable energy that if developed would help protect air quality, reduce greenhouse gas emissions, minimize impacts to natural resources, reduce the need for transmission lines, and increase energy security, and that Coconino County supports efforts to pursue renewable energy production alternatives such as wood biomass energy facilities, landfill methane gas collection, solar electricity, windpower and other alternative energy technologies. The letter stated that other Western states, including New Mexico, Nevada, Texas and Colorado, all have provisions to favor their in-state projects, that some form of in-state requirement or preference in Arizona's rules would create major opportunities for economic development and environment protection in Arizona, and that ensuring fair competition for Arizona's renewable energy projects should be an integral part of Arizona's plans for clean, secure energy and economic development.

170. On December 9, 2005, Bar-T-Bar Ranch filed a public comment letter. The comments stated that renewable energy development on rural lands provides economic diversification for ranchers; an alternative to subdividing ranches for development; and compatible land use with grazing and other agriculture. The comments also stated that clean energy development protects air

quality, preserves watershed, and conserves open space. Bar-T-Bar Ranch stated that Arizona's standard should not disfavor in-state projects by creating an unbalanced playing field that benefits other states to the detriment of rural Arizona, and requested that the Commission consider including some form of in-state requirement or preference for renewable energy projects because other Western states, including New Mexico, Nevada, Texas and Colorado, all have provisions to favor their in-state projects.

171. On December 30, 2005, Staff filed a memorandum responding to a request to re-evaluate the cost of the EPS based on proposed changes suggested by Commissioners at the August 10-11, 2005 Special Open Meeting. The memorandum stated that Staff had developed an estimate of the revenues that would be received from surcharge collections and other portfolio funds, and that based upon Staff's recommended surcharge levels and caps, Staff estimated that in 2006, Affected Utilities would collect from $40 to $42 million in surcharge funds, in addition to an additional $6 million that APS has in base rates, for a total portfolio funding collection of $46 to $48 million if the draft proposed EPS rules were in effect for the entire 2006 year. Attached to the memorandum was a spreadsheet estimating EPS costs reflecting the most recent draft rules.

172. On January 3, 2006, Commissioner Spitzer docketed a letter to the Commissioners regarding liquefied natural gas ("LNG") infrastructure in the United States and related geopolitical issues.

173. Also on January 3, 2006, Commissioner Mayes docketed copies of letters to APS and TEP requesting information about their treatment of renewable energy credits.

174. On January 12, 2006, Commissioner Gleason docketed a letter to the Commissioners requesting an Open Meeting for Commission discussion of a draft of the EPS rules and the December 30, 2005 spreadsheet docketed by Staff.

175. On January 23, 2006, TEP docketed a letter responding to Commissioner Mayes' January 3, 2006 letter.

~~176. On February 1, 2006, APS docketed a letter responding to Commissioner Mayes'~~ January 3, 2006 letter.

177. On February 2, 2006, Commissioner Mundell docketed a letter to Chairman Hatch-

Miller opposing an offer by Standard and Poor's to make a presentation to the Commission until after a vote on the EPS rules.

178. On February 3, 2006, Commissioner Mayes docketed a letter to the Commissioners objecting to a proposal to hold a meeting on the Standard and Poor's ratings process, stating that it is important to help consumers deal with higher energy costs by promoting the use of renewable energy and making energy efficiency programs available to homeowners.

179. On February 3, 2006, Staff docketed a draft rules package which included draft amended EPS Rules, a Staff Report on Proposed Amendments to the EPS Rules, and a Draft EPS Economic, Small Business and Consumer Impact Statement.

180. On February 6, 2006, J. Robert (Bob) Wolcott filed additional comments on expanded use of renewable energy sources in Arizona, stating that the prospects for financing the reliability needs of the RES do not look feasible. The filing included Mr. Wolcott's comments on the Kyoto Protocol, climate change, wind power, solar power, nuclear power, and economics.

181. On February 6, 2006, Commissioner Spitzer filed a letter to the Commissioners regarding the cost associated with the draft EPS Rules; tax subsidies associated with electricity generated by oil, coal and natural gas; environmental impacts that are not included in the wholesale and retail prices of fossil fuel generated electricity, lost productivity and medical charges related to fossil fuel generated electricity; global instability related to fossil fuels; and a need for increased funding of the EPS program.

182. On February 9, 2006, the Distributed Energy Association of Arizona filed comments on the February 3, 2006 draft rules package, stating that it wants the rules to allow customers to use distributed renewable energy when a system is close to the customer location and the energy is used by the customer even if not on the customer's premises; that natural gas combined heat and power systems should be considered as eligible resources; that the type of program administration should be the choice of the utility; and that net metering and billing workshops should address evaluation and modification of rates and rate schedules.

183. The Commission held a Special Open Meeting on February 10, 2006 for Commission consideration of a formal rulemaking process. The Special Open Meeting continued on February 16

and 27, 2006.

184. On February 16, 2006, copies of comments from Universal Entech and Forest Energy Corporation were filed in the docket urging the Commission to consider including biomass and biogas "thermal-only" energy as eligible renewable technologies.

185. On February 17, 2006, Chairman Hatch-Miller filed a letter to the Commissioners stating his concern that the financial impact of the draft EPS Rules had not been fully explored, and that he did not wish to postpone a final vote on the rules package.

186. On February 17, 2006, Ivan Sidney, Chairman of the Hopi Tribe, filed a comment letter stating that the Hopi Tribe is currently participating in the proposed Sunshine Wind Park and has other potential wind sites under construction. The comments requested that the Commission consider including some form of preference for in-state projects.

187. On February 21, 2006, 29 statements expressing support for clean energy were filed in the docket.

188. On February 24, 2006, APS filed comments on the February 3, 2006 draft EPS Rules. APS stated that it is necessary to recognize and provide adequate funding for all of the costs associated with program implementation; that it is inconsistent to require Affected Utilities to meet the initial Annual Renewable Energy Requirement months before funding is obtainable; that the difficulty of both achieving the Distributed Renewable Energy Requirement and the potential costs must be addressed; and that it would be unfair to penalize Affected Utilities by requiring forfeiture of cost recovery due to inability to comply with rules that do not provide adequate funding and rely on customer choice and participation to meet rule requirements. APS' comments recommended modifications to the February 3, 2006 draft EPS Rules to address the issues it raised.

189. On February 27, 2006, comments from Southwest Energy Efficiency Project were filed requesting clarification regarding restoration of DSM funding.

190. On February 27, 2006, the Special Open Meeting that commenced on February 10, 2006 and continued on February 16, 2006 reconvened, and the Commission decided to commence the process for promulgation of the Proposed RES Rules.

191. On March 8, 2006, correspondence from Ann Halbach, Associated Students of

Northern Arizona University, was filed in support of requiring at least 15 percent renewable energy by 2025, coupled with annual plans and compliance reports. The letter from Ms. Halbach was attached to a memorandum from Chairman Hatch-Miller's office indicating that 72 additional notes signed by students were received with the letter.

192. On March 14, 2006, the Commission issued Decision No. 68566 in this docket, ordering that a Notice of Proposed Rulemaking for the Proposed RES Rules be forwarded to the Arizona Secretary of State for publication in the Arizona Administrative Register. Decision No. 68566 also directed that a public comment hearing be set on the Proposed RES Rules.

193. On March 15, 2006, Commissioner Gleason docketed a copy of a letter to APS requesting that APS provide estimates regarding compliance requirements and costs for the period 2007-2025 under the Proposed RES Rules as discussed at the Commission's February 27, 2006 Special Open Meeting.

194. On March 20, 2006, a Procedural Order was issued pursuant to Decision No. 68566 scheduling a public comment hearing schedule for the Proposed RES Rules. The Procedural Order stated that comments would be taken into the record of this proceeding through May 23, 2006, and requested that interested parties file written comments on the Proposed RES Rules attached to Decision No. 68566 on or before April 18, 2006, and that responsive written comments be filed on or before May 16, 2003.

195. On March 27, 2006, Mark Harrington, Chairman, Board of Directors of the Eastern Arizona Counties Organization, filed comments requesting that out-of-state energy not be allowed to satisfy renewable energy requirements, and that biomass energy use be more strongly articulated to facilitate the more affordable removal of excess forest and woodland fuels on private and public lands.

196. On April 7, 2006, Commissioner Gleason filed a letter to the parties requesting that the record address the Commission's constitutional and statutory authority to promulgate each of the Proposed RES Rules, and the extent to which relevant case law would limit the authority to enforce the Proposed RES Rules. The letter also requested that the record address answers to questions related to yearly retail demand through the year 2030; the amount of electricity required under the

Proposed RES Rules for each of those years and how much of it will be above the Market Cost of Comparable Conventional Generation; the projected Market Cost of Comparable Conventional Generation for each of those years; a breakdown of distributed and non-distributed requirements for each year, with the amount produced from each allowed technology and the cost above the market cost of comparable conventional generation; the projected cost of the infrastructure required to meet the RES; the Affected Utilities' total cost to comply with the RES, whether the revenue produced by implementing the Sample Tariff will be sufficient for compliance, and if not, what the yearly cost per kWh will be to the ratepayer; the percent of the cost of RES-eligible kWh or equivalent credits that would be subsidized with public money under current state and federal law, and including the Proposed RES Rules; and what methodology will be used to determine the market cost of comparable conventional generation, including the specific method that will be used to calculate avoided costs. Commissioner Gleason requested in his letter that parties file responses to his questions by April 18, 2006.

197. On or before April 18, 2006, interested parties filed initial written comments on the Proposed RES Rules as requested in the March 20, 2006 Procedural Order. Summaries of those comments appear in Appendix B, attached hereto and incorporated herein by reference.

198. On April 18, 2006, and April 21, 2006, TEP and UNS Electric, Inc., the Grand Canyon State Electric Cooperative Association, Inc. ("GCSECA"), Staff, and APS filed responses to Commissioner Gleason's April 7, 2006 letter. Summaries of those responses appear in Appendix B, attached hereto and incorporated herein by reference.

199. On April 18, 2006, APS filed a response to Commissioner Gleason's March 15, 2006 letter.

200. On April 20, 2006, Commissioner Gleason docketed a copy of a letter to the Commission's Utilities Division Staff ("Staff") requesting an addendum to Staff's April 18, 2006 to specifically address the extent to which the Commission's statutory authority for each of the ~~Proposed RES Rules satisfies all applicable provisions of the Arizona Administrative Procedure Act,~~ including A.R.S. § 41-1001.01(A)(8) and § 41-1030(C), and requesting that the addendum address A.R.S. § 40-207 in its evaluation.

201. On May 9, 2006, Staff filed its response to Commissioner Gleason's April 20, 2006 letter. A summary of that response appears in Appendix B, attached hereto and incorporated herein by reference.

202. On May 9, 2006, Commissioner Gleason docketed letters to TEP, APS and GCSECA requesting that prior to the public comment hearing, TEP, APS and GCSECA make information available regarding the percentage of residential customers using more than 210 kWh of electricity for each month in calendar year 2005.

203. On May 15, 2006, APS filed its response to Commissioner Gleason's May 9, 2006 letter indicating the percentage of APS' residential customers who used more than 210 kWh of electricity for each month in calendar year 2005.

204. On or before May 16, 2006, interested parties filed written responses to initial written comments on the Proposed RES Rules as requested in the March 20, 2006 Procedural Order. Summaries of those comments appear in Appendix B, attached hereto and incorporated herein by reference.

205. On May 18, 2006, Unisource Energy filed its response to Commissioner Gleason's May 9, 2006 letter indicating the percentage of TEP's and UNSE's residential customers who used more than 210 kWh of electricity for each month in calendar year 2005.

206. On May 19, 2006, GCSECA filed its response to Commissioner Gleason's May 9, 2006 letter indicating the percentage of each Cooperative's residential customers who used more than 210 kWh of electricity for each month in calendar year 2005.

207. The formal public comment hearing was held as scheduled on May 23, 2006, and continued on June 5, 2006. Public comments were received on both dates. During the course of the public comment hearing, Commissioners requested additional filings. A due date for the filings was set for June 19, 2006, and a date for responses to those comments was set for July 10, 2006

208. On June 2, 2006, APS filed the written information requested during the May 23, 2006 public comment hearing regarding historical EPS expenditures and Credit Purchase Program ("CPP") funding; estimated cost for compliance; system integration costs; and tariff alternatives.

209. On June 5, 2006, Chairman Hatch-Miller filed in the docket a copy of a letter to APS

and TEP requesting information to the degree possible regarding two exhibits attached to the letter; an estimate based on tax year 2005 of the total government subsidies to residential and commercial renewable developers, with a breakdown of percentage of cost borne by developers and taxpayers; and a breakdown of any federal and state subsidies received by APS and TEP for the conventional production of electricity using coal, natural gas and nuclear power, further broken down by percentage of cost borne by developers and taxpayers.

210. On June 19, 2006, APS filed responses to requests for additional information from the June 5, 2006 public comment hearing regarding the acreage of the Palo Verde Nuclear Generating Station ("PVNGS"); impact of the Price-Anderson Act on PVNGS; Federal and state subsidies for conventional generation; Federal and state subsidies available for renewable generation and development; EPS expenditures; costs of renewable energy generation; and direct and indirect costs for renewable energy generation.

211. On June 23, 2006, APS filed a response to Chairman Hatch-Miller's letter dated June 5, 2006.

212. On June 23, 2006, the Distributed Energy Association of Arizona filed a copy of a letter to Chairman Hatch-Miller regarding interconnection issues and the Distributed Generation Working Group.

213. On June 27, 2006, Commissioner Gleason filed a copy of a letter requesting that the Affected Utilities and Staff specifically address in writing by July 10, 2006, questions regarding possible antitrust implications of section 1810 of the Proposed RES Rules and to generally evaluate the extent to which Attorney General Opinion No. I79-099 applies to section 1810 of the Proposed RES Rules and the activities it prescribes.

214. On June 27, 2006, a letter from Interwest Energy Alliance was filed.

215. On June 29, 2006, Commissioner Mayes filed a copy of a letter to APS requesting comment in this docket and Docket No. E-01345A-05-0816 on the calculation of above market cost for renewable energy, including ancillary service costs and APS' imbalance charge and penalty policy, with a particular focus on in-state wind energy.

216. On June 28, 2006, Unisource Energy filed its response to Chairman Hatch-Miller's

June 5, 2006 letter.

217. On July 6, 2006, Commissioner Gleason filed a copy of a letter to Bill Meek, President, Arizona Utility Investors Association, commenting on an article in the June 2006 edition of *Investors Quarterly*.

218. On July 10, 2006, APS, TEP and UNSE (jointly), and WRA filed their responses to Commissioner Gleason's June 27, 2006 letter.

219. On July 10, 2006, TEP filed recommended language for section 1803 of the Proposed RES Rules.

220. On July 10, 2006, Staff docketed a filing including an Economic, Small Business, and Consumer Impact Statement for the Proposed RES Rules; an explanation of the renewable cost numbers provided to Chairman Hatch-Miller at the June 5, 2006 public comment hearing; a discussion of the meaning of the term "customer" for purposes of the definition of Distributed Renewable Energy Resources in proposed R14-2-1802.B; Staff's comments in response to the June 2, 2006 letter filed by APS; and Staff's comments in response to any filings provided by June 19, 2006.

221. On July 13, 2006, Commissioner Gleason filed a letter requesting an answer to a question posed during the June 5, 2006 public comment hearing.

222. On July 17, 2006, Staff filed its response Commissioner Gleason's June 27, 2006 letter.

223. On July 19, 2006, APS filed its response to Commissioner Mayes' June 28, 2006 letter.

224. On July 26, 2006, Staff filed its response to Commissioner Gleason's July 13, 2006 letter.

225. The generation portfolios[4] of Arizona's electric utilities currently consist primarily of fossil fuel resources.

226. Load growth in Arizona will require Arizona utilities to add new generation resources to their portfolios in order to provide adequate service to their customers.

[4] The Affected Utilities' generation portfolios include their plant, system, equipment, facilities, service, and methods of manufacture and supply of electricity furnished to their customers.

227. The generation portfolios of the Affected Utilities lack adequate and sufficient diversity to promote and safeguard the security, convenience, health and safety of the Affected Utilities' customers and the public in Arizona.

228. Renewable energy sources are not subject to the same price fluctuations and transportation disruptions as conventional fossil fuel energy sources.

229. Renewable energy resources rely on free energy or very low-cost energy.

230. Renewable energy resources are less polluting than conventional energy sources.

231. Continued reliance on fossil fuel generation resources without the addition of renewable generation resources is inadequate and insufficient to promote and safeguard the security, convenience, health and safety of the Affected Utilities' customers and the public in Arizona, and is therefore unjust, unreasonable, unsafe, and improper.

232. It is just, reasonable, proper, and necessary to require a diverse fuel supply for Arizona's electricity needs in order to reduce reliance on fossil fuel energy sources in Arizona to promote and safeguard the security, convenience, health and safety of the Affected Utilities' customers and the public in Arizona.

233. Electric service provided from renewable resources is in the public interest.

234. It is just, reasonable, proper, and necessary to require the Affected Utilities to include the minimum amount of renewable resources in their energy portfolios required by the Proposed RES Rules, in order to reduce air pollution emissions and their associated external costs and to promote and safeguard the security, convenience, health and safety of Affected Utilities' customers and the public in Arizona.

235. The minimum amount of renewable energy resources required in the timeframe covered by the Proposed RES Rules is just, reasonable, and proper at this time, in light of the expected growth in demand for electricity over that timeframe.

236. The Affected Utilities' generation portfolios are not currently adequate or sufficient to meet the minimum requirements of the Proposed RES Rules.

237. It is just, reasonable, proper, and necessary to require the Affected Utilities to make additions, improvements or changes to their existing generation portfolios in order to meet the

requirements of the Proposed RES Rules in order to promote and safeguard the security, convenience, health and safety of Affected Utilities' customers and the public in Arizona.

238. Comments the Commission has received from the public have been overwhelmingly in support of the Proposed RES Rules.

239. Comments the Commission has received from the public in opposition to the Proposed RES Rules have been based primarily on economic and reliability concerns.

240. The Proposed RES Rules require Commission approval of Tariffs and annual implementation plans filed by the Affected Utilities so that the Commission can ensure the economical and efficient use of ratepayer funds in order to meet the goals of the Proposed RES Rules.

241. The Proposed RES Rules require Staff to host a series of workshops addressing interconnection standards, and require the adoption of rules or standards, if appropriate. Comments received indicate that the workshop process is underway, and that it is addressing reliability concerns related to interconnection of new renewable energy resources to the existing distribution system.

242. Based on comments received from the public, it is reasonable to require Staff to continue to host and oversee the workshop process for the development of interconnection standards, and to ensure that the workshop process adequately addresses any reliability concerns related to interconnection of new renewable energy resources with the existing distribution and transmission system.

243. Promulgation of the Proposed RES Rules as set forth in Appendix A is just, reasonable, proper, and necessary in order to promote and safeguard the security, convenience, health and safety of Affected Utilities' customers and the public in Arizona.

Findings of Fact Relating to Appendices A, B and C

244. A summary of the comments that the Commission received on specific sections of the Proposed RES Rules, including both technical and legal issues, and the Commission's analysis and resolution of those comments, are included in the Summary of Comments and Response, which is attached hereto as Appendix B and incorporated herein by reference. Also included in Appendix B is a summary of responses received to Commissioner Gleason's April 7, 2006 and April 20, 2006

letters. Appendix B was prepared in accordance with A.R.S. § 41-1001(14)(d)(iii), and is to be included in the Preamble to be published with the Notice of Final Rulemaking.

245. Typographical errors appearing in the text of the Proposed RES Rules in the Notice of Proposed Rulemaking have been corrected. For clarity and ease of interpretation, defined terms have been capitalized wherever they appear throughout the article.

246. In response to comments received, some clarifying language has been incorporated in some sections of the Proposed RES Rules, as explained in Appendix B, but no substantial changes to the Proposed RES Rules are required.

247. The text of the Proposed RES Rules incorporating typographical corrections and clarifying modifications is set forth in Appendix A, attached hereto and incorporated herein by reference.

248. No Notice of Supplemental Rulemaking is required.

249. Prepared in accordance with A.R.S. § 41-1057, the Economic, Small Business, and Consumer Impact Statement is set forth in Appendix C, attached hereto and incorporated herein by reference.

CONCLUSIONS OF LAW

1. Pursuant to Article XV of the Arizona Constitution and Title 40 of the Arizona Revised Statutes, the Commission has jurisdiction to enact A.A.C. R14-2-1801 through -1815.

2. Notice of the rulemaking and hearing was given in the manner prescribed by law.

3. The Proposed RES Rules as set forth in Appendix A contain no substantial changes from the Proposed RES Rules published in the Notice of Proposed Rulemaking.

4. Enactment of A.A.C. R14-2-1801 through -1815 as set forth in Appendix A is in the public interest.

5. The Summary of Comments and Response set forth in Appendix B should be adopted.

ORDER

IT IS THEREFORE ORDERED that proposed A.A.C. R14-2-1801 through -1815 as set forth in Appendix A, and the Summary of Comments and Response as set forth in Appendix B, are hereby adopted.

IT IS FURTHER ORDERED that the Economic, Small Business, and Consumer Impact Statement, as set forth in Appendix C, is hereby adopted.

IT IS FURTHER ORDERED that the Commission's Utilities Division shall submit adopted Rules A.A.C. R14-2-1801 through -1815, as set forth in Appendix A; the Summary of Comments and Response, as set forth in Appendix B; and the Economic, Small Business, and Consumer Impact Statement, as set forth in Appendix C; to the Office of the Attorney General for endorsement.

IT IS FURTHER ORDERED that the Commission's Utilities Division is authorized to make non-substantive changes in the adopted A.A.C. R14-2-1801 through -1815, and to the adopted Summary of Comments and Response, in response to comments received from the Attorney General's office during the approval process pursuant to A.R.S. § 41-1044 unless, after notification of those changes, the Commission requires otherwise.

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IT IS FURTHER ORDERED that the Commission's Utilities Division shall continue to host and oversee the workshop process for the development of interconnection standards for renewable energy resources, and shall ensure that the workshop process adequately addresses any reliability concerns related to interconnection of new renewable energy resources with the existing distribution and transmission system.

IT IS FURTHER ORDERED that this Decision shall become effective immediately.

BY ORDER OF THE ARIZONA CORPORATION COMMISSION.

CHAIRMAN COMMISSIONER

COMMISSIONER COMMISSIONER COMMISSIONER

IN WITNESS WHEREOF, I, BRIAN C. McNEIL, Executive Director of the Arizona Corporation Commission, have hereunto set my hand and caused the official seal of the Commission to be affixed at the Capitol, in the City of Phoenix, this 14th day of Nov., 2006.

BRIAN C. McNEIL
EXECUTIVE DIRECTOR

DISSENT

DISSENT

SERVICE LIST FOR: RENEWABLE ENERGY STANDARD AND TARIFF RULES

DOCKET NO.: RE-00000C-05-0030

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DISSENT

I dissent in the Commission's decision to adopt the Renewable Energy Standard and Tariff (REST) Rules because:

- The Commission is unclear in its purpose for adopting the Rules.
- The Renewable Energy Standard will not ensure reliable service at reasonable rates.
- The Decision charges Staff with unreasonable responsibilities.
- The cost of the Renewable Energy Standard to the ratepayers is unknown.
- The Rules provide the means to charge whatever it will cost.
- The Commission failed to assess the long-term impact on Arizona's economy.
- The Rules are unfair to the ratepayers.
- The Rules are an improper use of the Commission's police powers.
- Key provisions of the rules are vague or confusing.
- The Rules allow RECs from off-grid systems outside Arizona.
- The Decision disregards statutory rule making process.
- Appendix B is biased.
- The Decision convicts the utilities of unjust service without any basis.
- The Commission lacks authority to enact the Rules.

<u>The Commission's purpose in adopting the Rules is unclear.</u>

In Decision No. 68566, Finding of Fact No. 11 states that:

> "The February 3, 2006 Staff Report states that the proposed rules promote the Commission's goals to protect the environment and increase renewable energy resources for diversity of the fuel supply, to enhance system reliability and safety in a post 9/11 era, and to mitigate against volatility in non-renewable fuel prices."

The Commission erred in making this finding because the February 3 Staff Report makes no such statement. While the goals purported to be the Commission's in Finding of Fact No.11 are *discussed* in the Report, the Report does not identify them as being the Commission's goals, nor did the Commission adopt the Report to make Staff's goals its own. In any case, nowhere does the Report state that the proposed rules promote the goals. Finding of Fact No. 11 is demonstrably false, and the fact that the Commission adopted it and Staff subsequently repeated it in the Notice of Proposed Rulemaking (NOPR; Question 5) does not make it true.

Although Decision No. 68566 fails to establish the Commission's reasons for initiating the rulemaking, the proposed Rules specify intent in two places:

R14-2-1804.A states "In order *to ensure reliable electric service at reasonable rates*, each affected utility shall . . . satisfy an annual renewable energy requirement," and

R14-2-1805.A states "In order *to improve system reliability*, each affected utility shall . . . satisfy a distributed renewable energy requirement" (emphases added).

Thus, the Rules indicate that their purpose is to ensure reliable service at reasonable rates. This is consistent with *some* of the goals attributed to the Commission in Finding of Fact No. 11, but the Rules make no mention of the other goals outlined in Finding of Fact No. 11, such as protecting the environment, diversifying the fuel supply, addressing safety concerns in a post 9/11 era and mitigating fuel price volatility. The obvious disparity between the expansive purposes outlined in Finding of Fact No. 11, and the narrow scope of the Commission's purpose as stated in the Rules, belies the Commission's own confusion about its goals.

This confusion is further manifest in the "Economic, Small Business and Consumer Impact Statement" where, in response to question No. 7, Staff states "The Commission is unaware of any less intrusive or less costly methods that exist for achieving the purpose of the proposed rule making." If, as the Rules themselves indicate, the purpose is to ensure reliable electric service at reasonable rates, the Commission should have explained why it did not consider coal and nuclear technologies as means of providing reliable and economical generation.

Utilities subject to the Rules, and the ratepayers who will now bear the cost of compliance, deserve a coherent statement of the objectives the Commission seeks to accomplish with the Rules. Unfortunately, the Commission never provided one.

The Rules will not ensure reliable electric service.

Fuel diversity *is* important to reliable electric generation, and Arizona already has a diverse mix of fuels for generating firm, dispatchable and reliable power, including coal (51%), nuclear (26%), natural gas (13%) and hydro (9%)[1]. Renewable energy has the potential to contribute to this diversity, but only a few of the renewable energy sources allowed under the Rules, such as biomass, geothermal and landfill gas, produce firm power.

Renewable resources capable of generating firm power will provide only a miniscule amount of the electricity the utilities will need to comply with the Rules. For the foreseeable future, they will have to meet the overwhelming balance of their obligations to the Rules by producing or buying large amounts of solar and wind power. Solar and wind are intermittent sources capable of generating only non-firm, non-dispatchable, and therefore, *unreliable* power.

Proponents of the Rules argued that the Distributed Renewable Resource Requirement will improve system reliability by lessening strain on conventional generation and other infrastructure by producing power on the customers' premises at peak demand. That argument is wrong because solar power production starts to decline several hours before peak electricity demand during the hottest part of the day, which coincides with cloud cover during the summer thunderstorm season. When clouds block the sun as they often do on a July afternoon, owners of rooftop solar PV systems draw conventional power off the existing infrastructure like everyone else.

[1] http://www.eia.doe.gov/cneaf/electricity/epa/epat1p1.html (YTD 5/2006 for electric utilities)

As noted by TEP-UNSE[2], there is no evidence in the record to substantiate the counter-intuitive claim that an increased reliance on intermittent resources will enhance reliability. More seriously, there is nothing to alleviate Staff's legitimate concerns[3] that increased reliance on intermittent resources has the potential to *degrade* reliability when the amount of intermittent power on the western interconnection approaches operating reserve capacity. The Decision's sole response to this system-wide threat to reliability is to order Commission Staff to ensure that the workshop process required under R14-2-1811 "adequately addresses any reliability concerns related to the interconnection of new renewable energy resources with the existing distribution and transmission system." This response is wholly inappropriate and ineffective because workshops hosted by this Commission lack the jurisdictional scope necessary to identify and implement solutions to reliability problems arising from uncoordinated increases in intermittent power throughout the west. Contrary to Finding of Fact No. 242, it is *not* reasonable to order Staff to ensure that any reliability concerns are adequately addressed because that goal is inherently unachievable in workshops.

The Commission's adoption of the REST Rules is in reckless disregard for reliability and places unreasonable responsibilities on Staff.

The Rules will not produce reasonable rates.

The affected utilities will have to rely heavily on 30-year-old solar photovoltaic (PV) technology to comply with the Rules, especially since the Distributed Renewable Energy Requirement is a *de facto* 30 percent solar electric set-aside. Whether used in rooftop systems or in central station applications, current solar PV technology is *the most expensive* renewable technology available to the affected utilities. According to a 2005 report on solar energy by the U.S. Department of Energy, Office of Science, "Solar electricity from photovoltaics is too costly, by factors of 5–10, to compete with fossil derived electricity. . ."[4]

Manufacturers, distributors and installers of rooftop PV systems claim that the cost of PV will continue to decline to the point where it will soon be economical, if only we will invest in "incentives" to "kick-start" the market. The Office of Science indicates otherwise:

- "If the present learning curve for PV cells is followed, the projected attainment of very-low-cost PV power ($0.02/kWh) . . . would lie far in the future . . ." [5]
- "Reaching a [PV module price] of $0.40/$W_p$ sooner will require an intense effort in basic science to produce a technological revolution that leads to new, *as-yet-unknown technology.*"[6] (emphasis added)

[2] April 18, 2006, Joint comments of TEP and UNSE, Page 7.
[3] Comments of Staff Electrical Engineer Jerry Smith at the February 16, 2006 Special Open Meeting.
[4] Office of Science, U.S.D.O.E. "Basic Research Needs for Solar Energy Utilization: Report on the Basic Energy Sciences Workshop on Solar Energy Utilization." Washington, D.C. April 18-21, 2005, Page 4.
[5] Id., Page 19.

The cost of PV *has* declined, primarily because of more efficient mounting, but it does not follow that the *rate* of decline will be sufficient to render current PV technology economically self-sustaining anytime soon. In fact, solar PV prices are *increasing* because of growing demand for silicon to supply massively subsidized overseas markets. Effectively requiring 30 percent of the renewable power to come from rooftop solar panels is an extremely wasteful use of ratepayer dollars to subsidize the least economical renewable technology. The Distributed Renewable Energy Requirement is therefore contrary to the Commission's previous finding that the development of renewables should be designed to achieve maximum benefit for the money spent.[7]

Regardless of their location, intermittent resources, such as solar and wind, must be backed up with spinning reserve and baseload generation if service reliability is to be maintained. The cost of this backup infrastructure must be included in the cost of energy that is generated from intermittent resources, just as the costs of reserve power infrastructure are now charged to the power actually sold. Some of the practical constraints and cost effects of intermittent power were recently summarized by the Energy Information Administration[8] as follows:

- "When the wind is not blowing or the sun is not shinning, [wind and solar resources] cannot generate electricity. As a result, . . . additional capacity may have to be added to . . . ensure that consumers' electricity needs can be met at all times".
- "The need to add backup capacity . . . adds system costs that are not reflected in levelized costs."
- "All technologies require some investment to interconnect to the transmission grid, but these costs can be higher for . . . intermittent technologies . . . because of their lower generation."

Given the exorbitant cost of solar PV and costs associated with the intermittent character of the technologies that will be the backbone of the Renewable Energy Standard, the Commission should have considered the results of a careful analysis of the projected cost of the RES to the ratepayers. As indicated in Staff's response to question No. 6 in the NOPR, however, the need for any such study was simply dismissed as "not applicable."

While it lacks any hard data bearing on the future cost of the Rules, Staff's Economic, Small Business and Consumer Impact Statement (Appendix C) offers various estimates of monthly surcharge caps that might yield enough revenue to allow the utilities to comply during the early years of the RES. The companies also provided estimates of their compliance costs, which are dramatically higher than Staff's. This is not at all surprising considering that the utilities have practical experience in producing and buying renewable power and will be the ones to endure the consequences of noncompliance.

[6] Id., Page 20.
[7] Arizona Corporation Commission Decision No. 62506. May 4, 2000, Finding of Fact No. 38. Page 25.
[8] Gruenspecht, Howard, Statement of the Deputy Administrator of the Energy Information Administration before the Subcommittee on Select Revenue Measures, U.S. House of Representatives Committee on Ways and Means. May 24, 2005. Page 8.

Because the Rules require the utilities to annually file a tariff proposing a funding level sufficient for compliance, the Rules are in effect a blank check for the Commission to increase the subsidy, at the ratepayers' expense, to whatever amount the utilities may need to supply the required Renewable Energy Credits (RECs). Nobody knows what the Renewable Energy Standard will cost the ratepayers, but one thing is sure, it will be far more than the $1.05 per month that is given in the Sample Tariff[9] as the monthly cap for residential customers. In fact, the Commission's own economic impact statement states that by 2008, the so-called "cap" may need to increase to $1.40 per month for some companies, and up to $2.00 per month for others.[10]

The Commission had no basis for finding that the cost of subsidizing ever-increasing amounts of uneconomical energy will produce reasonable rates; the Rules are a virtual mandate for imprudence.

The Commission failed to assess the Rules' long term impact on Arizona's economy.

In its analysis of the economic impact of New Jersey's proposed Renewable Portfolio Standard (RPS), Rutgers University concluded that the RPS would have a negligible impact on the growth of the State's economy, *assuming that renewable costs will come down.*[11] However, in considering the economic effect of the proposed RPS if the technological improvements are *not* realized, the study concluded:

- "The economic and electricity price impacts of the proposed 20% RPS . . . depend substantially on whether expected technological improvements and other factors occur that reduce the cost of PV and wind power."[12]
- ". . . if additional cost reductions do not exceed the pace of those that have historically occurred . . . the proposed 20% RPS would raise electricity prices by approximately 24% in the year 2020 and have *a measurable, negative impact on the state's economy.*"[13] (emphasis added)

Unlike the New Jersey Board of Public Utilities, this Commission did not order a rigorous and impartial study of the probable impacts of the REST Rules on Arizona's economy. Absent such a study, including a scenario in which PV costs *do not* decline faster than they have in the past, the Commission's adoption of the REST Rules is in reckless disregard for Arizona's economic future.

[9] Appendix A to Appendix A of the Decision.
[10] Appendix C, Page 7.
[11] "Economic Impact of New Jersey's Proposed 20% Renewable Portfolio Standard" Center for Energy, Economic & Environmental Policy, Rutgers University. December 8, 2004. Pages 3 and 4.
[12] Id., Page 4.
[13] Ibid.

The Rules are unfair to the ratepayers.

As modeled in the Sample Tariff, the monthly surcharge caps are unfair because they benefit customers who use large amounts of electricity, while disadvantaging more conservative, often low-income, customers whose electricity expenses account for a greater proportion of their budget. As an alternative to caps, the Commission should have considered a straight per kWh surcharge without caps, or even an inverted block rate structure in which customers who use less electricity would be rewarded by paying a lower per kWh surcharge than customers who use excessive amounts of power, who would pay a higher amount per kWh to subsidize renewable power.

The Distributed Renewable Energy Requirement is unfair because millions of customers will pay a premium for electricity so that the few hundred of them who want rooftop units, and who are affluent enough to upfront the cost, can enjoy a rebate to offset the otherwise exorbitant price of this most inefficient technology. The Rules also allow ratepayer dollars to subsidize off-grid systems to benefit "customers" who themselves never paid a cent of the RES surcharge because they do not purchase electricity from the affected utilities. The Distributed Requirement is especially unfair to renters and other customers who do not own homes because they will fund the subsidy but be unable to participate in the rebate programs.

The Rules are an improper use of the State's police powers.

Requiring utilities to provide power from customer-owned distributed facilities is a misuse of the Commission's regulatory powers; no matter how large the subsidy, the utilities have no means to compel customer participation, which is essential for compliance. The Commission's Rules are binding only on the utilities and not the ratepayers. Therefore, it is an improper use of the Commission's police powers to impose rules on the utilities in an attempt to influence customer behavior to conform to the Commission's ill-conceived policy objectives.

Key Provisions of the Rules are vague or confusing.

At the October 31, 2006 open meeting, the Commission adopted an amendment that moved the waiver provision in Rule 1815[14] (as published in the NOPR), to an entirely new rule (Rule 1816). In so doing, the Commission added language, which was not in the waiver provision as published in the NOPR, to the effect that a petition for a waiver filed pursuant to [Rule 1816] "shall have priority over other matters" pending before the Commission.[15] Because of its vagueness, the new language establishing "priority over other matters" will be a source of conflict and confusion every time an Affected Utility files a petition.

[14] Appendix A, page 25, lines 7 and 8.
[15] Mundell verbal amendment to Paragraph C of Hatch-Miller Amendment No. 2, adding R14-2-1816.

The definition of "Net Metering" (1801.M) is fatally flawed because it allows the owner of customer-sited generation to be credited not only for excess electricity returned to the grid, but also for the electricity the customer generates and consumes. To correct this flaw, the definition of net metering should have been amended to conform with the definition in the Energy Policy Act of 2005, which provides credit to the distributed generator only for excess power that is returned to the grid.

"Customer" normally means a person who buys goods or services, especially on a regular basis. Thus, in the context of the Distributed Renewable Energy Requirement (Rule 1805), one could reasonably interpret "customer" to mean a person who purchases electricity from an Affected Utility, and whose residence or business must therefore be connected to the grid. The record shows, however, that in addition to its conventional meaning, "customer" in the Rules means any person who consumes electricity.[16] This includes a person who installs an off-grid distributed system whose cost is offset by a subsidy payment from an Affected Utility according to a contract providing that RECs attributable to the system go to the Utility for its use in satisfying Rule 1805. In simple terms, it is the Affected Utility who is purchasing something (RECs), and who is therefore the customer, from the off-grid generator, who is the seller. Because the meaning of "customer" as intended in the Rules is opposite the normal meaning of "customer," the Rules should have included a definition to avoid the confusion that will inevitably befall an average reader.

The Rules allow RECs from distributed systems outside Arizona.

Rule 1805, which requires the Affected Utilities to obtain RECs from Distributed Renewable Energy Resources, contains no requirement that those Resources be located within the Affected Utilities' service territory. Given 1) the absence of such a service area requirement, 2) the possibility that an Arizona "customer" may be a person who enters into a contract with an Affected Utility to supply the Utility with RECs from an off-grid system, and 3) Rule 1803.G, which exempts Distributed Resources from the Utilities' obligation to demonstrate delivery of renewable energy to their retail consumers, there is nothing in the Rules to prohibit an Affected Utility from satisfying its obligations under Rule 1805 by using ratepayer money to buy paper RECs from off-grid distributed systems anywhere in the world.

The Decision disrespects statutory rule making process.

The Decision circumvents statutes that apply to the Commission's rulemaking by 1) incorporating amendments that make substantial changes to the Rules as published in the NOPR without the required notice of supplemental rule making, and 2) by negating changes proposed by the Administrative Law Judge (ALJ) to resolve legitimate issues that were raised in public comments filed in the docket and brought forward in the public comment hearing.

[16] June 26, 2006 letter from Janice Alward to Commissioner Gleason.

Arizona Revised Statutes § 41-1025 lists three criteria that an agency must consider to determine if a change adopted after the rule was published in the NOPR is a substantial change requiring a notice of supplemental rule making under A.R.S. § 41-1022.E. In applying these criteria, it appears the Commission adopted substantial changes, without a notice of supplemental rulemaking, in at least three areas.

First, the Decision changes the wording of Rule 1803 so that it no longer requires the Affected Utilities to deliver "renewable electricity" to their customers. By incorporating the ALJ's proposed amendment, the Rule requires delivery of "energy from Eligible Renewable Energy Resources to the Affected Utility's *system*." (emphasis added). At the February 10 Open Meeting, the Commission debated the appropriateness of the term "renewable electricity" at great length,[17] and at the end of that discussion, no amendment to the language of R14-2-1803 was offered, let alone adopted. The Commission's adoption of the ALJ's amendment is a substantive change because requiring delivery of renewable electricity to the customer is not the same as requiring delivery of renewable energy to the system. Therefore, the Commission should have filed a Notice Supplemental Rulemaking, as required by A.R.S. § 41-1022.E.

Second, the Decision incorporates the ALJ's proposed amendments that changed the Annual Renewable Energy Requirement and Distributed Renewable Energy Requirement (as listed in the schedules in Rules 1804 and 1805) by pro rating the required percentages based on when the Commission approves each utility's RES funding mechanism. These are substantial changes because they change the percentages that are the core provisions of the REST Rules package. By creating a different percentage requirement for each Affected Utility, the Renewable Energy Standard is no longer standard. Further, because they delay full implementation of the required percentages according to the schedules published in the NOPR, the adopted amendments adversely affect stakeholders seeking relief from the negative effects of conventional generation. Therefore, the Commission should have filed a Notice Supplemental Rulemaking, as required by A.R.S. § 41-1022.E.

Third, under Rule 1815 as published in the NOPR, the Commission could have denied an Affected Utility the ability to recover the costs of making up any deficiency in the number of RECs it was able to obtain, after due process. By incorporating the ALJ's amendment, however, Rule 1815 now provides that an Affected Utility that fails to meet its annual REC requirements can be denied cost recovery *only if the utility did not comply with the implementation plan* under Rule 1813. Changing the circumstances under which a company can be denied cost recovery is a substantial change, as evidenced by the utilities dropping their opposition to 1815 in light of the ALJ's suggested amendment. The effect of the rule after the change is to reduce the burden on the Affected Utilities. However, the interests of other stakeholders are harmed because the Affected Utilities have less incentive to obtain the required number of RECs, thereby forestalling the purported beneficial environmental effects of the Renewable Energy Standard. Here again, the Commission should have filed a Notice Supplemental Rulemaking, as required by A.R.S. § 41-1022.E, before adopting the change.

[17] Tr. 124-141

At the October 31, 2006 Open Meeting, the Commission adopted amendments that stripped out many beneficial changes that the ALJ proposed to resolve legitimate issues that were raised in public comments filed in the docket and brought forward in the public comment hearing in response to the NOPR. Useful changes that were rejected include:

- Adding a100-year water supply requirement in the definition of an eligible "biomass electricity generator." (1802.A.2)
- Improved method for calculating Renewable Energy Credit (RECs) for solar cooling to provide incentives for more efficient systems. (1803.B and C)
- Adding language expressly allowing the utilities to obtain Commission approval for innovative distributed energy programs developed after their Uniform Credit Purchase Program is first implemented. (1810.C)
- Adding a provision that implementation plans are deemed approve if the Commission does not act on them within 180 days of filing. (1813.C)
- Adding a definition of "appropriate plan" that clearly specifies compliance requirements for the Cooperatives. (1814)

The statutes provide for a supplemental rulemaking process to incorporate substantial changes warranted by public comment, but in its haste to enact the Rules, the Commission rejected that process. By so doing, the Commission wasted the ALJ's efforts to resolve the substantial issues that came to light through public comment and negated the very purpose of the NOPR. The Commission wrongly discarded the ALJ's proposed changes *without regard for their merits.*

Similarly, this Decision rejects numerous amendments that were offered at the Open Meeting, including ones that would have:

- Corrected the definition of "net metering" (1801.M) to conform with the Energy Policy Act of 2005.
- Allowed greater flexibility in the kinds of forest thinnings that could be used by biomass electricity generators. (1802.A.2)
- More fairly distributed the cost of the RES by removing the Caps in the Sample Tariff.
- Helped to ensure that distributed resources will not consume a disproportional amount of the RES funding.
- Increased accountability by requiring certain participants to supply a performance bond.
- Enhanced monitoring by requiring a cost/benefit evaluation in five years.
- Given priority to funding renewable projects that produce firm power during peak load.

Just as it was wrong for the Commission to strip the Decision of the ALJ's proposed amendments, so was it wrong for the Commission to reject open meeting amendments with out regard for their merits and solely because they may have been substantial.

Appendix B is biased.

In my April 7, 2006 letter, I asked the parties to address the extent to which the Commission has constitutional and statutory authority to enact the Rules. In the response filed by the Commission's Legal Division,[18] Staff reviewed authorities which could be argued as supporting the Commission's authority to make the Rules, but also reviewed contrary authorities which could be used to argue that the Commission lacks the necessary authority. After reviewing both positions and the conclusions which each might support, Staff declined to offer its own conclusion about whether the Commission does or does not have sufficient authority to enact the Rules.

In summarizing Staff's response, Appendix B[19] presents only one of the two positions discussed by Staff – the one supporting the Commission's authority to enact the Rules – and conveniently omits the contrary arguments. Moreover, Appendix B misrepresents Staff's review of the arguments supporting the Commission's position as if it were Staff's *conclusion* that the Commission has the necessary authority. A comparison between the statement attributed to Staff in Appendix B,[20] and the statement actually made by Staff,[21] will show that Staff offered no conclusion.

The Commission lacks authority to make and enforce the Rules.

In Decision No. 68566, the one and only Conclusion of Law asserts that the Commission has the authority to enact the Renewable Energy Standard and Tariff rules under Article XV of the Arizona Constitution and Title 40 of the Arizona Revised Statutes.[22] There are good reasons to doubt that claim.

Article 15, Section 3 of Arizona's constitution provides that the Commission has full power to 1) set the rates charged by the regulated utilities, and 2) to make rules for the convenience, comfort, and safety, and the preservation of the health of the utilities' employees and customers.

Proponents of the REST Rules argue that the second phase gives the Commission constitutional authority to require the use of renewable energy sources for electricity generation to limit environmental impacts otherwise resulting from fossil-fuel generation. In recent years, however, the courts have determined that the Commission has no regulatory authority under Article 15, Section 3 except that connected to its ratemaking power. In so doing, the courts recognize that the Commission's power goes beyond

[18] Janice Alward, April 18, 2006. Pages 1-4.
[19] Appendix B, Page 49 and 50.
[20] Appendix B, Page 49, line 7.
[21] Janice Alward, April 18, 2006. Page 1, line 28 through page 2, line 1.
[22] Decision 68566, Page 3, lines 7 and 8.

strictly setting rates and extends to the enactment of rules and regulations that are *reasonably necessary steps to ratemaking.*

The core provisions of the REST Rules are:

> R14-2-1804, which dictates that the affected utilities must obtain RECs by supplying specific percentages of power produced using a specified set of technologies according to a specified schedule, and
>
> R14-2-1805, which dictates that, according to a specified schedule, certain percentages of the RECs required under R14-2-1804 must be from distributed generation.

Neither requiring the use of certain generation technologies at specified portfolio percentages, nor dictating the location of generation, is a reasonably necessary step to ratemaking. Thus, the Commission has no constitutional authority to enact R14-2-1804 or R14-2-1805, or any of the other the rules derived from those core provisions.

In the absence of any constitutional authority, the Commission could enact the REST Rules if it had statutory authority to do so. However, the Legislature has not enacted any statute giving the Commission authority to require the use of renewable energy, or otherwise dictate the use of specific fuels or technologies. It could be argued that A.R.S. § 40-321 provides authority for the REST Rules because the Commission has determined that the Rules are the appropriate remedy to the conclusion that the Affected Utilities' service is unjust, unsafe or improper. While this Decision reaches this conclusion in Finding of Fact No. 231, there are no data in the record to support it. Finally, in enacting the REST Rules, the Commission circumvented the Administrative Procedure Act (A.R.S. Title 41, Chapter 6), which requires an agency, including the Commission, to have specific statutory authority over the subject matter of the rules.

The REST Rules impermissibly interfere with the management prerogative of the Affected Utilities. By attempting to regulate the use of specified percentages of certain energy sources and the location or generating facilities for the sake of environmental protection, the Commission has strayed from its proper role in government to assume functions that executive branch agencies have the statutory authority and responsibility to perform.

The Conclusion of Law in Decision No. 68566 is wrong, and the fact that the Commission adopted it as Conclusion of Law No. 1 in this Decision does not make it right. If the Commission wants to impose rules on the Affected Utilities to protect the environment, it should have first gone to the Legislature to secure the requisite authority.

Lowell S. Gleason
Commissioner

Appendix A

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

CHAPTER 2. CORPORATION COMMISSION-FIXED UTILITIES

ARTICLE 18. RENEWABLE ENERGY STANDARD AND TARIFF

Section

ARTICLE 18. RENEWABLE ENERGY STANDARD AND TARIFF

R14-2-1801. Definitions

A. "Affected Utility" means a public service corporation serving retail electric load in Arizona, but excluding any Utility Distribution Company with more than half of its customers located outside of Arizona.

B. "Annual Renewable Energy Requirement" means the portion of an Affected Utility's annual retail electricity sales that must come from Eligible Renewable Energy Resources.

C. "Conventional Energy Resource" means an energy resource that is non-renewable in nature, such as natural gas, coal, oil, and uranium, or electricity that is produced with energy resources that are not Renewable Energy Resources.

D. "Customer Self-Directed Renewable Energy Option" means a Commission-approved program under which an Eligible Customer may self-direct the use of its allocation of funds collected pursuant to an Affected Utility's Tariff.

E. "Distributed Generation" means electric generation sited at a customer premises, providing electric energy to the customer load on that site or providing wholesale capacity and energy to the local Utility Distribution Company for use by multiple customers in contiguous distribution substation service areas. The generator size and transmission needs shall be such that the plant or associated transmission lines do not require a Certificate of Environmental Compatibility from the Corporation Commission.

F. "Distributed Renewable Energy Requirement" means a portion of the Annual Renewable Energy Requirement that must be met with Renewable Energy Credits derived from resources that qualify as Distributed Renewable Energy Resources pursuant to R14-2-

1802(B).

G. "Distributed Solar Electric Generator" means electric generation sited at a customer premises, providing electric energy from solar electric resources to the customer load on that site or providing wholesale capacity and energy to the local Utility Distribution Company for use by multiple customers in contiguous distribution substation service areas. The generator size and transmission needs shall be such that the plant or associated transmission lines do not require a Certificate of Environmental Compatibility from the Corporation Commission.

H. "Eligible Customer" means an entity that pays Tariff funds of at least $25,000 annually for any number of related accounts or services within an Affected Utility's service area.

I. "Extra Credit Multiplier" means a way to increase the Renewable Energy Credits attributable to specific Eligible Renewable Energy Resources in order to encourage specific renewable applications.

J. "Green Pricing" means a rate option in which a customer elects to pay a tariffed rate premium for electricity derived from Eligible Renewable Energy Resources.

K. "Market Cost of Comparable Conventional Generation" means the Affected Utility's energy and capacity cost of producing or procuring the incremental electricity that would be avoided by the resources used to meet the Annual Renewable Energy Requirement, taking into account hourly, seasonal, and long-term supply and demand circumstances. Avoided costs include any avoided transmission and distribution costs and any avoided environmental compliance costs.

L. "Net Billing" means a system of billing a customer who installs an Eligible Renewable Energy Resource generator on the customer's premises for retail electricity purchased at

retail rates while crediting the customer's bill for any customer-generated electricity sold to the Affected Utility at avoided cost.

M. "Net Metering" means a system of metering electricity by which the Affected Utility credits the customer at the full retail rate for each kilowatt-hour of electricity produced by an Eligible Renewable Energy Resource system installed on the customer-generator's side of the electric meter, up to the total amount of electricity used by that customer during an annualized period, and which compensates the customer-generator at the end of the annualized period for any excess credits at a rate equal to the Affected Utility's avoided cost of wholesale power. The Affected Utility does not charge the customer-generator any additional fees or charges or impose any equipment or other requirements unless the same is imposed on customers in the same rate class that the customer-generator would qualify for if the customer-generator did not have generation equipment.

N. "Renewable Energy Credit" means the unit created to track kWh derived from an Eligible Renewable Energy Resource or kWh equivalent of Conventional Energy Resources displaced by Distributed Renewable Energy Resources.

O. "Renewable Energy Resource" means an energy resource that is replaced rapidly by a natural, ongoing process and that is not nuclear or fossil fuel.

P. "Tariff" means a Commission-approved rate designed to recover an Affected Utility's reasonable and prudent costs of complying with these rules.

Q. "Utility Distribution Company" means a public service corporation that operates, constructs, or maintains a distribution system for the delivery of power to retail customers.

R. "Wholesale Distributed Generation Component" means non-utility owners of Eligible

Renewable Energy Resources that are located within the distribution system and that do not require a transmission line over 69 kv to deliver power at wholesale to an Affected Utility to meet its Annual Renewable Energy Requirements.

R14-2-1802. Eligible Renewable Energy Resources

A. "Eligible Renewable Energy Resources" are applications of the following defined technologies that displace Conventional Energy Resources that would otherwise be used to provide electricity to an Affected Utility's Arizona customers:

1. "Biogas Electricity Generator" is a generator that produces electricity from gases that are derived from plant-derived organic matter, agricultural food and feed matter, wood wastes, aquatic plants, animal wastes, vegetative wastes, or wastewater treatment facilities using anaerobic digestion or from municipal solid waste through a digester process, an oxidation process, or other gasification process.

2. "Biomass Electricity Generator" is an electricity generator that uses any raw or processed plant-derived organic matter available on a renewable basis, including: dedicated energy crops and trees; agricultural food and feed crops; agricultural crop wastes and residues; wood wastes and residues, including landscape waste, right-of-way tree trimmings, or small diameter forest thinnings that are 12" in diameter or less; dead and downed forest products; aquatic plants; animal wastes; other vegetative waste materials; non-hazardous plant matter waste material that is segregated from other waste; forest-related resources, such as harvesting and mill residue, pre-commercial thinnings, slash, and brush; miscellaneous waste, such as waste pellets, crates, and dunnage; and recycled paper fibers that are no

longer suitable for recycled paper production, but not including painted, treated, or pressurized wood, wood contaminated with plastics or metals, tires, or recyclable post-consumer waste paper.

3. "Distributed Renewable Energy Resources" as defined in subsection (B).

4. "Eligible Hydropower Facilities" are hydropower generators that were in existence prior to 1997 and that satisfy one of the following two criteria:

   a. New Increased Capacity of Existing Hydropower Facilities: A hydropower facility that increases capacity due to improved technological or operational efficiencies or operational improvements resulting from improved or modified turbine design, improved or modified wicket gate assembly design, improved hydrological flow conditions, improved generator windings, improved electrical excitation systems, increases in transformation capacity, and improved system control and operating limit modifications. The electricity kWh that are eligible to meet the Annual Renewable Energy Requirements shall be limited to the new, incremental kWh output resulting from the capacity increase that is delivered to Arizona customers to meet the Annual Renewable Energy Requirement.

   b. Generation from pre-1997 hydropower facilities that is used to firm or regulate the output of other eligible, intermittent renewable resources: The electricity kWh that are eligible to meet the Annual Renewable Energy Requirements shall be limited to the kWh actually generated to firm or regulate the output of eligible intermittent Renewable Energy Resources and that are delivered to Arizona customers to meet the Annual

Renewable Energy Requirements.

5. "Fuel Cells that Use Only Renewable Fuels" are fuel cell electricity generators that operate on renewable fuels, such as hydrogen created from water by Eligible Renewable Energy Resources. Hydrogen created from non-Renewable Energy Resources, such as natural gas or petroleum products, is not a renewable fuel.

6. "Geothermal Generator" is an electricity generator that uses heat from within the earth's surface to produce electricity.

7. "Hybrid Wind and Solar Electric Generator" is a system in which a Wind Generator and a solar electric generator are combined to provide electricity.

8. "Landfill Gas Generator" is an electricity generator that uses methane gas obtained from landfills to produce electricity.

9. "New Hydropower Generator of 10 MW or Less" is a generator, installed after January 1, 2006, that produces 10 MW or less and is either:

   a. A low-head, micro hydro run-of-the-river system that does not require any new damming of the flow of the stream; or

   b. An existing dam that adds power generation equipment without requiring a new dam, diversion structures, or a change in water flow that will adversely impact fish, wildlife, or water quality; or

   c. Generation using canals or other irrigation systems.

10. "Solar Electricity Resources" use sunlight to produce electricity by either photovoltaic devices or solar thermal electric resources.

11. "Wind Generator" is a mechanical device that is driven by wind to produce electricity.

B. "Distributed Renewable Energy Resources" are applications of the following defined technologies that are located at a customer's premises and that displace Conventional Energy Resources that would otherwise be used to provide electricity to Arizona customers:

1. "Biogas Electricity Generator," "Biomass Electricity Generator," "Geothermal Generator," "Fuel Cells that Use Only Renewable Fuels," "New Hydropower Generator of 10 MW or Less," or "Solar Electricity Resources," as each of those terms is defined in subsections (A)(1), (A)(2), (A)(5), (A)(6), (A)(9), and (A)(10).
2. "Biomass Thermal Systems" and "Biogas Thermal Systems" are systems which use fuels as defined in subsections (A)(1) and (A)(2) to produce thermal energy and that comply with Environmental Protection Agency Certification Programs or are permitted by state, county, or local air quality authorities. For purposes of this definition "Biomass Thermal Systems" and "Biogas Thermal Systems" do not include biomass and wood stoves, furnaces, and fireplaces.
3. "Commercial Solar Pool Heaters" are devices that use solar energy to heat commercial or municipal swimming pools.
4. "Geothermal Space Heating and Process Heating Systems" are systems that use heat from within the earth's surface for space heating or for process heating.
5. "Renewable Combined Heat and Power System" is a Distributed Generation system, fueled by an Eligible Renewable Energy Resource, that produces both electricity and useful renewable process heat. Both the electricity and renewable process heat may be used to meet the Distributed Renewable Energy Requirement.

6. "Solar Daylighting" is the non-residential application of 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.

7. "Solar Heating, Ventilation, and Air Conditioning" ("HVAC") is the combination of Solar Space Cooling and Solar Space Heating as part of one system.

8. "Solar Industrial Process Heating and Cooling" is the use of solar thermal energy for industrial or commercial manufacturing or processing applications.

9. "Solar Space Cooling" is a technology that uses solar thermal energy absent the generation of electricity to drive a ~~mechanical~~ refrigeration machine that provides for space cooling in a building.

10. "Solar Space Heating" is a method whereby a mechanical system is used to collect solar energy to provide space heating for buildings.

11. "Solar Water Heater" is a device that uses solar energy rather than electricity or fossil fuel to heat water for residential, commercial, or industrial purposes.

12. "Wind Generator of 1 MW or Less" is a mechanical device, with an output of 1 MW or less, that is driven by wind to produce electricity.

C. Except as provided in subsection (A)(4), Eligible Renewable Energy Resources shall not include facilities installed before January 1, 1997.

D. The Commission may adopt pilot programs in which additional technologies are established as Eligible Renewable Energy Resources. Any such additional technologies shall be Renewable Energy Resources that produce electricity, replace electricity generated by Conventional Energy Resources, or replace the use of fossil fuels with

Renewable Energy Resources. Energy conservation products, energy management products, energy efficiency products, or products that use non-renewable fuels shall not be eligible for these pilot programs.

R14-2-1803. Renewable Energy Credits

A. One Renewable Energy Credit shall be created for each kWh derived from an Eligible Renewable Energy Resource.

B. For Distributed Renewable Energy Resources, one Renewable Energy Credit shall be created for each 3,415 British Thermal Units of heat produced by a Solar Water Heating System, a Solar Industrial Process Heating and Cooling System, Solar Space Cooling System, Biomass Thermal System, Biogas Thermal System, or a Solar Space Heating System.

C. An Affected Utility may transfer Renewable Energy Credits to another party and may acquire Renewable Energy Credits from another party. A Renewable Energy Credit is owned by the owner of the Eligible Renewable Energy Resource from which it was derived unless specifically transferred.

~~**D.** All transfers of Renewable Energy Credits shall be appropriately documented. Any sales contract of kWh by a system owner shall explicitly describe the transfer rights of both electricity and its Renewable Energy Credits. Affected Utilities must document the delivery of the renewable electricity to its customers by providing proof that the necessary transmission rights were reserved and utilized, if transmission is required, and that the appropriate control area operators scheduled the renewable electricity for delivery to the Affected Utility's customers.~~

E. All transfers of Renewable Energy Credits shall be appropriately documented to

demonstrate that the energy associated with the Renewable Energy Credits meets the provisions of R14-2-1802.

F. Any contract by an Affected Utility for purchase or sale of energy and/or Renewable Energy Credits to meet the requirements of this Rule shall explicitly describe the transfer of rights concerning both energy and Renewable Energy Credits.

G. Except in the case of Distributed Renewable Energy Resources, Affected Utilities must demonstrate the delivery of energy from Eligible Renewable Energy Resources to their retail consumers such as by providing proof that the necessary transmission rights were reserved and utilized to deliver energy from Eligible Renewable Energy Resources to the Affected Utility's system, if transmission is required, or that the appropriate control area operators scheduled the energy from Eligible Renewable Energy Resources for delivery to the Affected Utility's system.

R14-2-1804. Annual Renewable Energy Requirement

A. In order to ensure reliable electric service at reasonable rates, each Affected Utility shall be required to satisfy an Annual Renewable Energy Requirement by obtaining Renewable Energy Credits from Eligible Renewable Energy Resources.

B. An Affected Utility's Annual Renewable Energy Requirement shall be calculated each calendar year by applying the following applicable annual percentage to the retail kWh sold by the Affected Utility during that calendar year:

2006	1.25%
2007	1.50%
2008	1.75%
2009	2.00%

2010	2.50%
2011	3.00%
2012	3.50%
2013	4.00%
2014	4.50%
2015	5.00%
2016	6.00%
2017	7.00%
2018	8.00%
2019	9.00%
2020	10.00%
2021	11.00%
2022	12.00%
2023	13.00%
2024	14.00%
After 2024	15.00%

The annual increase in the annual percentage for each Affected Utility will be pro rated for the first year based on when the Affected Utility's funding mechanism is approved.

C. An Affected Utility may use Renewable Energy Credits acquired in any year to meet its Annual Renewable Energy Requirement.

D. Once a Renewable Energy Credit is used by any Affected Utility to satisfy these requirements, the credit is retired and cannot be subsequently used to satisfy these rules or any other regulatory requirement.

E. If an Affected Utility trades or sells environmental pollution reduction credits or any other environmental attributes associated with kWh produced by an Eligible Renewable Energy Resource, the Affected Utility may not apply Renewable Energy Credits derived from that same kWh to satisfy the requirements of these rules.

F. No more than 20 percent of an Affected Utility's Annual Renewable Energy Requirement may be met with Renewable Energy Credits derived pursuant to R14-2-1807.

G. An Affected Utility may ask the Commission to preapprove agreements to purchase energy or Renewable Energy Credits from Eligible Renewable Energy Resources.

R14-2-1805. Distributed Renewable Energy Requirement

A. In order to improve system reliability, each Affected Utility shall be required to satisfy a Distributed Renewable Energy Requirement by obtaining Renewable Energy Credits from Distributed Renewable Energy Resources.

B. An Affected Utility's Distributed Renewable Energy Requirement shall be calculated each calendar year by applying the following applicable annual percentage to the Affected Utility's Annual Renewable Energy Requirement:

2007	5%
2008	10%
2009	15%
2010	20%
2011	25%
After 2011	30%

The annual increase in the annual percentage for each Affected Utility will be pro rated for the first year based on when the Affected Utility's funding mechanism is approved.

C. An Affected Utility may use Renewable Energy Credits acquired in any year to meet its Distributed Renewable Energy Requirement. Once a Renewable Energy Credit is used by any Affected Utility to satisfy these requirements, the credit is retired.

D. An Affected Utility shall meet one-half of its annual Distributed Renewable Energy Requirement from residential applications and the remaining one-half from non-residential, non-utility applications.

E. An Affected Utility may satisfy no more than 10 percent of its annual Distributed Renewable Energy Requirement from Renewable Energy Credits derived from distributed Renewable Energy Resources that are non-utility owned generators that sell electricity at wholesale to Affected Utilities. This Wholesale Distributed Generation Component shall qualify for the non-residential portion of the Distributed Renewable Energy Requirement.

R14-2-1806. Extra Credit Multipliers

A. Renewable Energy Credits derived from Eligible Renewable Energy Resources installed after December 31, 2005, shall not be eligible for Extra Credit Multipliers.

B. The extra Renewable Energy Credits resulting from any applicable multiplier shall be added to the Renewable Energy Credits produced by the Eligible Renewable Energy Resource to determine the total Renewable Energy Credits that may be used to meet an Affected Utility's Annual Renewable Energy Requirement.

C. "Early Installation Extra Credit Multiplier." Affected Utilities acquiring Renewable Energy Credits from a Solar Electricity Resource, a Solar Water Heater, a Solar Space Cooling system, a Landfill Gas Generator, a Wind Generator, or a Biomass Electricity Generator that was installed and began operations between January 1, 2001, and

December 31, 2003, shall be eligible for an Early Installation Extra Credit Multiplier. Renewable Energy Credits derived from such facilities and acquired by Affected Utilities shall be eligible for five years following the facility's operational start-up. The multiplier shall vary according to the year in which the system began operating:

2001	.3
2002	.2
2003	.1

D. "In-State Power Plant Installation Extra Credit Multiplier." Affected Utilities acquiring Renewable Energy Credits from a Solar Electricity Resource that was installed in Arizona on or before December 31, 2005, shall be eligible for an In-State Power Plant Installation Extra Credit Multiplier. The Renewable Energy Credits derived from such a facility and acquired by an Affected Utility shall be multiplied by .5 annually for the life of the facility. The extra Renewable Energy Credits resulting from the multiplier shall be added to the Renewable Energy Credits produced by the Eligible Renewable Energy Resource to determine the total Renewable Energy Credits that may be used to meet an Affected Utility's Annual Renewable Energy Requirement.

E. "In-State Manufacturing and Installation Content Extra Credit Multiplier." Affected Utilities acquiring Renewable Energy Credits from a Solar Electricity Resource, a Solar Water Heater, a Solar Space Cooling system, a Landfill Gas Generator, a Wind Generator, or a Biomass Electricity Generator that was installed in Arizona on or before December 31, 2005, and that contains components manufactured in Arizona shall be eligible for an In-State Manufacturing and Installation Content Extra Credit Multiplier. The Renewable Energy Credits derived from such a facility and acquired by an Affected

Utility shall be multiplied annually for the life of the facility by a factor determined by multiplying .5 times the percent of Arizona content of the total installed plant.

F. "Distributed Solar Electric Generator and Solar Incentive Program Extra Credit Multiplier." Affected Utilities acquiring Renewable Energy Credits from a Distributed Solar Electric Generator that was installed in Arizona on or before December 31, 2005, shall be eligible for a Distributed Solar Electric Generator and Solar Incentive Program Extra Credit Multiplier if the facility meets at least two of the following criteria:

1. The facility is installed on customer premises,
2. The facility is included in any Affected Utility's approved Green Pricing program,
3. The facility is included in any Affected Utility's approved Net Metering or Net Billing program,
4. The facility is included in any Affected Utility's approved solar leasing program; or
5. The facility is owned by and located on an Affected Utility's property or customer property. The Renewable Energy Credits derived from such a facility and acquired by an Affected Utility shall be multiplied by .5 annually for the life of the facility. Meters will be attached to each solar electric generator and read at least once annually to verify solar performance.

G. All multipliers are additive, except that the maximum combined Extra Credit Multiplier shall not exceed 2.0.

R14-2-1807. Manufacturing Partial Credit

A. An Affected Utility may acquire Renewable Energy Credits to apply to the non-distributed portion of its Annual Renewable Energy Requirement if it or its affiliate owns or makes a significant investment in any solar electric manufacturing plant located in Arizona or if it or its affiliate provides incentives to a manufacturer of solar electric products to locate a manufacturing facility in Arizona.

B. The Renewable Energy Credits shall be equal to the nameplate capacity of the solar electric generators produced and sold in a calendar year times 2,190 hours, which approximates a 25 percent capacity factor.

C. Extra credit multipliers shall not apply to Renewable Energy Credits created by this Section.

R14-2-1808. Tariff

A. Within 60 days of the effective date of these rules, each Affected Utility shall file with the Commission a Tariff in substantially the same form as the Sample Tariff set forth in these rules that proposes methods for recovering the reasonable and prudent costs of complying with these rules. The specific amounts in the Sample Tariff are for illustrative purposes only and Affected Utilities may submit, with proper support, Tariff filings with alternative surcharge amounts.

B. The Affected Utility's Tariff filing shall provide the following information:

1. Financial information and supporting data sufficient to allow the Commission to determine the Affected Utility's fair value for purposes of evaluating the Affected Utility's proposed Tariff. Information submitted in the format of the Annual Report required under R14-2-212(G)(4) will be the minimum information

necessary for filing a Tariff application but Commission Staff may request additional information depending upon the type of Tariff filing that is submitted.

2. A discussion of the suitability of the Sample Tariff set forth in Appendix A for recovering the Affected Utility's reasonable and prudent costs of complying with these rules,

3. Data to support the level of costs that the Affected Utility contends will be incurred in order to comply with these rules,

4. Data to demonstrate that the Affected Utility's proposed Tariff is designed to recover only the costs in excess of the Market Cost of Comparable Conventional Generation, and

5. Any other information that the Commission believes will be relevant to the Commission's consideration of the Tariff filing.

C. The Commission will approve, modify, or deny a Tariff proposed pursuant to subsection (A) within 180 days after the Tariff has been filed. The Commission may suspend this deadline or adopt an alternative procedural schedule for good cause. The Affected Utility's Annual Renewable Energy Requirement, as set forth in R14-2-1804(B), and Distributed Renewable Energy Requirement, as set forth in R14-2-1805(B), will be effective upon Commission approval of the Tariff filed pursuant to this section.

D. If an Affected Utility has an adjustor mechanism for the recovery of costs related to Annual Renewable Energy Requirements, the Affected Utility may file a request to reset its adjustor mechanism in lieu of a Tariff pursuant to subsection (A). The Affected Utility's filing shall provide all the information required by subsection (B), except that it may omit information specifically related to the fair value determination. The Affected

Utility's Annual Renewable Energy Requirement, as set forth in R14-2-1804(B), and Distributed Renewable Energy Requirement, as set forth in R14-2-1805(B), will be effective upon Commission approval of the adjustor mechanism rate filed pursuant to this section.

E. An Affected Utility may file a rate case pursuant to *R14-2-103 in lieu of* a Tariff pursuant to subsection (A). The Affected Utility's filing shall provide all information required by subsection (B).

R14-2-1809. Customer Self-Directed Renewable Energy Option

A. By January 1, 2007, each Affected Utility shall file with Docket Control a Tariff by which an Eligible Customer may apply to an Affected Utility to receive funds to install distributed Renewable Energy Resources. The funds annually received by an Eligible Customer pursuant to this Tariff may not exceed the amount annually paid by the Eligible Customer pursuant to the Affected Utility's Tariff.

B. An Eligible Customer seeking to participate in this program shall submit to the Affected Utility a written application that describes the Renewable Energy Resources that it proposes to install and the projected cost of the project. An Eligible Customer shall provide at least half of the funding necessary to complete the project described in its application.

C. All Renewable Energy Credits derived from the project, including generation and Extra Credit Multipliers, shall be applied to satisfy the Affected Utility's Annual Renewable Energy Requirement.

R14-2-1810. Uniform Credit Purchase Program

A. The Director of the Utilities Division shall establish a Uniform Credit Purchase Program

working group, which will study issues related to implementing Distributed Renewable Energy Resources. The working group shall address the consumer participation process, budgets, incentive levels, eligible technologies, system requirements, installation requirements, and any other issues that are relevant to encouraging the implementation of Distributed Renewable Energy Resources. No later than March 1, 2007, the Director of the Utilities Division shall file a staff report with recommendations for Uniform Credit Purchase Programs.

B. No later than July 1, 2007, each Affected Utility shall file a Uniform Credit Purchase Program for Commission review and approval.

R14-2-1811. Net Metering and Interconnection Standards

The Commission Staff shall host a series of workshops addressing the issues of rate design including Net Metering and interconnection standards. Upon completion of this task, and the adoption of rules or standards, if appropriate, each Affected Utility shall file conforming Net Metering tariffs and interconnection standards in Docket Control.

R14-2-1812. Compliance Reports

A. Beginning April 1, 2007, and every April 1st thereafter, each Affected Utility shall file with Docket Control a report that describes its compliance with the requirements of these rules for the previous calendar year. The Affected Utility shall also transmit to the Director of the Utilities Division an electronic copy of this report that is suitable for posting on the Commission's website.

B. The compliance report shall include the following information:

1. The actual kWh of energy or equivalent obtained from Eligible Renewable Energy Resources;

2. The kWh of energy or equivalent obtained from Eligible Renewable Energy Resources normalized to reflect a full year's production;

3. The kW of generation capacity, disaggregated by technology type;

4. Cost information regarding cents per actual kWh of energy obtained from Eligible Renewable Energy Resources and cents per kW of generation capacity, disaggregated by technology type;

5. A breakdown of the Renewable Energy Credits used to satisfy both the Annual Renewable Energy Requirement and the Distributed Renewable Energy Requirement and appropriate documentation of the Affected Utility's receipt of those Renewable Energy Credits; and

6. A description of the Affected Utility's procedures for choosing Eligible Renewable Energy Resources and a certification from an independent auditor that those procedures are fair and unbiased and have been appropriately applied.

C. The Commission may hold a hearing to determine whether an Affected Utility's compliance report satisfies the requirements of these rules.

R14-2-1813 Implementation Plans

A. Beginning July 1, 2007, and every July 1st thereafter, each Affected Utility shall file with Docket Control for Commission review and approval a plan that describes how it intends to comply with these rules for the next calendar year. The Affected Utility shall also transmit an electronic copy of this plan that is suitable for posting on the Commission's website to the Director of the Utilities Division.

B. The implementation plan shall include the following information:

1. A description of the Eligible Renewable Energy Resources, identified by

technology, proposed to be added by year for the next five years and a description of the kW and kWh to be obtained from each of those resources;

2. The estimated cost of each Eligible Renewable Energy Resource proposed to be added, including cost per kWh and total cost per year;

3. A description of the method by which each Eligible Renewable Energy Resource is to be obtained, such as self-build, customer installation, or request for proposals;

4. A proposal that evaluates whether the Affected Utility's existing rates allow for the ongoing recovery of the reasonable and prudent costs of complying with these rules, including a Tariff application that meets the requirements of R14-2-1808 and addresses the Sample Tariff set forth in Appendix A if necessary; and

5. A line item budget that allocates specific funding for Distributed Renewable Energy Resources, for the Customer Self-Directed Renewable Energy Option, for power purchase agreements, for utility-owned systems, and for each Eligible Renewable Energy Resource described in the Affected Utility's implementation plan.

C. The Commission may hold a hearing to determine whether an Affected Utility's implementation plan satisfies the requirements of these rules.

R14-2-1814. Electric Power Cooperatives

A. Within 60 days of the effective date of these rules, every electric cooperative that is an Affected Utility shall file with Docket Control an appropriate plan for acquiring Renewable Energy Credits from Eligible Renewable Energy Resources for the next calendar year and a Tariff that proposes methods for recovering the reasonable and

prudent costs of complying with its proposed plan and addresses the Sample Tariff set forth in Appendix A. The cooperative shall also transmit electronic copies of these filings that are suitable for posting on the Commission's website to the Director of the Utilities Division. Upon Commission approval of this plan, its provisions shall substitute for the requirements of R14-2-1804 and R14-2-1805 for the electric power cooperative proposing the plan.

B. Beginning July 1, 2007, and every July 1st thereafter, every electric cooperative that is an Affected Utility shall file with Docket Control an appropriate plan for acquiring Renewable Energy Credits from Eligible Renewable Energy Resources for the next calendar year. The cooperative shall also transmit an electronic copy of this plan that is suitable for posting on the Commission's website to the Director of the Utilities Division.

R14-2-1815. Enforcement and Penalties

A. If an Affected Utility fails to meet the annual requirements set forth in R14-2-1804 and R14-2-1805, it shall include with its annual compliance report a notice of noncompliance.

B. The notice of noncompliance shall provide the following information:

1. A computation of the difference between the Renewable Energy Credits required by R14-2-1804 and R14-2-1805 and the amount actually obtained,
2. A plan describing how the Affected Utility intends to meet the shortfall from the previous calendar year in the current calendar year, and
3. An estimate of the costs of meeting the shortfall.

C. ~~An Affected Utility shall not recover the costs of meeting the shortfall described in subsection (B) in rates unless otherwise ordered by the Commission after affording the Affected Utility notice and an opportunity to be heard.~~ If the Commission finds after

affording an Affected Utility notice and an opportunity to be heard that the Affected Utility has failed to comply with its implementation plan approved by the Commission as set forth in R14-2-1813, the Commission may find that the Affected Utility shall not recover the costs of meeting the shortfall described in R14-2-1815(B) in rates.

D. Nothing herein is intended to limit the actions the Commission may take or the penalties the Commission may impose pursuant to Arizona Revised Statutes, Chapter 2, Article 9. An Affected Utility is entitled to notice and an opportunity to be heard prior to Commission action or imposition of penalties.

R14-2-1816. Waiver from the Provisions of this Article

A. The Commission may waive compliance with any provision of this Article for good cause.

B. Any Affected Utility may petition the Commission to waive its compliance with any provision of this Article for good cause.

C. A petition filed pursuant to these rules shall have priority over other matters filed at the Commission.

Appendix A. Sample Tariff

Unless otherwise ordered by the Commission, the renewable energy standard surcharge shall be assessed monthly to every retail electric service. This monthly assessment will be the lesser of $0.004988 per kWh or:

1. For residential customers, $1.05 per service;
2. For non-residential customers, $39.00 per service;
3. For non-residential customers whose metered demand is 3,000 kW or more for three consecutive months, $117.00 per service;

4. For non-metered services, the lesser of the load profile or otherwise estimated kWh required to provide the service in question, or the service's contract kWh shall be used in the calculation of the surcharge.

Appendix B

SUMMARY OF THE COMMENTS MADE REGARDING THE RULE AND THE AGENCY RESPONSE TO THEM

ARTICLE 18. RENEWABLE ENERGY STANDARD AND TARIFF

Comments Received on Proposed RES Rules by Section

R14-2-1801. Definitions

R14-2-1801.B "Annual Renewable Energy Requirement"

Issue:

TEP and UNS Electric, Inc. (collectively, "Unisource Energy") proposed that "must" be changed to "should" in conjunction with its proposed changes to section 1804.A, discussed below.

Staff stated that it disagrees with Unisource Energy's proposal, as it would change a requirement to a suggestion, and would not support the entire RES effort.

Analysis: We agree with Staff.

Resolution: No change required.

R14-2-1801.M "Net Metering"

Issue: Customer Compensation for Generation Supplied to the Grid

Unisource Energy proposed that the words "and which compensates the customer-generator at the end of the annualized period for any excess credits at a rate equal to the Affected Utility's avoided cost of wholesale power" be deleted. Unisource Energy stated that customer-sited generation incentives should be provided to support generation to meet the customer's annual electricity energy needs, but should not support production beyond that level. Unisource Energy stated that to do so unnecessarily increases the cost of managing supply side uncertainty, costs which

will be paid through the RES funding sources by customers who do not benefit from Net Metering.

Arizona Public Service Company ("APS") proposed deletion of the language requiring that the customer be credited for each kilowatt-hour of electricity produced by an Eligible Renewable Energy Resource system installed on the customer-generator's side of the electric meter be accomplished "at the full retail rate." APS also proposed deleting language requiring Affected Utilities to compensate the customer for excess credits at a rate equal to the Affected Utility's avoided cost of wholesale power, and deleting language requiring that no additional fees be charged to a Distributed Generation customer unless the same fees are imposed on customers in the same rate class the customer-generator would qualify for if the customer-generator did not have generation equipment. APS stated that the definition in the Proposed RES Rules goes beyond what is necessary to define the term, and proposes that these policy and pricing issues be addressed in Distributed Generation workshops. APS asserted that under the proposed definition, Net Metering would result in Distributed Generation customers not paying their proportionate share of fixed costs associated with providing electric service that are non-bypassable costs recovered through APS' current rate schedules on a metered kWh basis including generation, transmission and ancillary services, delivery, system benefits charges, environmental benefits surcharges, competition rules compliance surcharges, and regulatory assessment charges. APS stated that while it recognizes that Distributed Generation may benefit the system to some degree, the Company cannot currently monetize those benefits.

The Vote Solar Initiative ("VSI") responded to Unisource Energy's comments, stating that given the fairly predictable performance of distributed generation systems, and the fact that economics of customer-sited distributed generation systems do not suggest that customers will regularly over-size their systems in order to be annual net generators, Unisource Energy's stated concern regarding the cost of managing supply side uncertainty does not appear to be warranted. VSI

stated that for customer-sited distributed generation using PV technologies, which are expected to be a major contributor to the distributed generation component of the RES, most of the electricity fed into the grid under a Net Metering arrangement would almost certainly be during peak periods, and whatever Unisource Energy's "cost of managing supply side uncertainty" might be, it will surely be made up by the differential between avoided costs and the high value of the on-peak electricity provided.

In its response comments, Unisource Energy stated that it supports APS' proposed revision to this definition. Unisource Energy stated that while it is appropriate for the customer to not pay for energy they are not using, the customer will still need to have power available "24/7;" that costs are associated with having such power ready; that the customer will still need transmission service, distribution service, and metering service; and that the current definition will result in cost-shifting to customers who cannot afford to purchase facilities to produce their own renewable power.

VSI also responded to APS' objections to the concept of Net Metering in its entirety, based on the reasoning that Net Metering reduces the amount of money collected to pay the utility's fixed costs, and thereby shifts some costs to other customers. VSI stated that while this is true, the argument only tells part of the story, and does not accurately describe Net Metering's impact on ratepayers. VSI stated that in the case of solar PV systems, which are expected to contribute a large part of the distributed generation component, Net Metering's impact on utility revenues and other ratepayers are categorically the same as energy efficiency measures, and should be treated similarly. VSI stated that a Net Metered PV system does reduce consumption, but that the same is true of a solar energy customer who installs batteries to store excess solar production for later usage, or a utility customer who reduces load through conservation or installing energy efficiency technologies. VSI stated that in neither of the latter two scenarios would a utility be expected to be paid for the lost revenue – and for good reason: reduced consumption is universally accepted as beneficial for all

ratepayers, and these benefits outweigh the loss of revenue. VSI stated that as the impacts on the utility and other ratepayers are the same, Net Metered solar PV system owners should not be treated differently. VSI stated that the Net Metered customer is providing high value, peak kWh onto the grid at the low voltage distribution level (thereby reducing pressure on the overall transmission and distribution system) in exchange for low value peak credits, and this arrangement is a benefit to the grid and other ratepayers. VSI stated that any consideration or valuation of Net Metering costs must also consider the benefits, and that APS' claim that it cannot monetize the benefits does not justify ignoring the benefit side of the ledger. VSI stated that in the case of PV, every solar panel installed provides economic benefits for all utility customers by reducing the overall cost of producing and delivering electricity, which benefits are magnified by the fact that PVs produce the most electricity during peak demand periods.

VSI stated that studies in other states have established high values for distributed generation solar systems, such as a study of California's system finding the value of on-peak solar to be between $.0231-$0.352/kWh; a study in the New York City area finding that the avoided generation capacity benefits alone of PV was worth 9.1 cents/kWh, and that when avoided transmission capacity and line losses were accounted for, the benefits rose to 16.6 cents/kWh. VSI stated that these values are significantly greater than retail power costs, meaning the solar energy system owner may be cross subsidizing other utility customers. VSI stated that in considering Net Metering, the Commission should consider the benefits of distributed generation solar in Arizona, with particular attention paid to peak demand reductions, avoided generation fuel cost, avoided transmission and distribution upgrade costs, avoided transmission and distribution line losses, fuel diversification, avoided water use costs, and environmental benefits.

VSI stated that Net Metering is an important piece of the regulatory infrastructure for distributed generation, and that all of the states that are serious about renewable distributed generation have robust Net Metering policies. VSI stated that New Jersey, which just increased the solar requirement of its Renewable Portfolio Standard to 1,500 MW, provides Net Metering for

systems sized up to 2 MW (with no cap on overall enrollment); and that Colorado and Pennsylvania both recently adopted renewable portfolio standards with sizeable solar energy components, and both have undergone rulemaking to establish Net Metering policies at the 2 MW level. VSI stated that it would be illogical and contradictory for the Commission to require distributed generation as part of the RES without at the same time considering the enabling regulatory infrastructure.

A comment letter was filed by Sally R. Day, a participant in TEP's SunShare PV program in Tucson, commenting that credits should not be zeroed out at the end of the year, but that the sale of the extra grid-tied energy should be rated at 70-80 percent of the cost TEP would typically charge for the electricity to pay the PV customer back in order to save the utility money on fuel costs and incent customers to install PV systems.

Staff stated that it disagrees with the contention that distributed generation customers are not paying their share of the costs to provide electric service. Staff stated that distributed generators that produce their own electricity help reduce the costs that the customer creates for the system by not contributing to overloading of transmission lines, overheating of distribution lines, wear and stress on substations and transformers, and the need to procure or generate the most expensive peaking power. Staff stated that a distributed generator has, in effect, contributed a mini-power plant to the utility generation mix at no cost to the utility shareholders and no carrying costs to the ratepayers; that through Net Metering, the utility can use the resulting kWh to meet its RES portfolio requirement without having to pay for the capital cost of the mini power plant; and that in years where customer retail rates are lower than the cost to produce renewable power, the utility can experience a savings due to the use of Net Metering. Staff stated that it disagrees with Unisource Energy's proposed deletion of language, because it would not be cost effective for the utility to forego the purchase of excess credits at the avoided cost of wholesale power, because it would have to then obtain Renewable Energy Credits from some other source, very likely at a higher price than the avoided cost

of wholesale power.

Analysis: We agree with Staff that customers who pay capital costs to install distributed generation, benefit not only themselves, but the system by not contributing to overloading of transmission lines, overheating of distribution lines, wear and stress on substations and transformers, and the need for utilities to procure or generate the most expensive peaking power during peak load times, and utility customers who do not install distributed generation will therefore receive a benefit from distributed generation. We agree with the VSI statement that Net Metering is an important piece of the regulatory infrastructure for distributed generation, and disagree with APS' assertion the terms of the definition go beyond what is necessary to define the term. We see no reason to delete language requiring Affected Utilities to pay for power it receives from customer-generators, and find that it is preferable to have the definition of Net Metering set forth at this time in order to provide certainty for the Distributed Generation Working Group, which can then move forward with other important interconnection issues. We note that the definition of Net Metering adopted herein does not allow for the "zeroing out" of credits at the end of the year, as the SunShare customer stated currently occurs in her comments, but requires that the customer-generator receive compensation for credits at the end of the annualized period.

Resolution: No change required.

R14-2-1802. Eligible Renewable Energy Resources

Issue: Biomass

Mark Harrington, Chairman, Board of Directors of the Eastern Arizona Counties Organization, filed comments requesting that biomass energy use be more strongly articulated to facilitate the more affordable removal of excess forest and woodland fuels on private and public lands.

Analysis: Biomass Electricity Generator is defined as an Eligible Renewable Energy Resource and

is therefore eligible for a Renewable Energy Credit required under sections 1804 and 1805.

Resolution: No change required.

R14-2-1802.A.2 Definition of Biomass Electricity Generator

Issue: Water Use

Unisource Energy proposed that the words "where a minimum 100 year water supply is assured for all regional area water users, as determined by the Arizona Department of Water Resources" be added after the words "dedicated energy crops and trees". Unisource Energy stated that some dedicated energy crops and trees are very water use intensive and should not be developed where water is needed for other societal pursuits if they reduce long term water supply for those other purposes, and that all agree that water is a critical factor to Arizona's future.

Staff disagrees with Unisource Energy, stating that conventional utility power plants use tremendous amounts of water in their cooling towers, yet there is no similar requirement on power plants to assure a 100 year water supply for all regional area water users, and that it is not appropriate to place such a restriction on energy sources that compete with the utilities' conventional power plants.

Analysis: After considering the arguments presented in support of changing the language of this section, we find that a change in the language is not in the public interest.

Resolution: No change required.

R14-2-1802.B.9 Definition of Solar Space Cooling

Issue: Non-mechanical processes

Unisource Energy proposed that the word "mechanical" be removed as non-mechanical processes are available to derive chilling from heat, and that language in this section may incorrectly prevent some solar heat-derived chilling processes from qualifying for RES program funding.

Staff stated that it agrees.

Analysis: Solar heat-derived chilling processes should not be prevented from qualifying for RES

program funding.

Resolution: Remove the word "mechanical" from this section.

R14-2-1803. Renewable Energy Credits

Issue: Solar Industrial Process Cooling System and Solar Space Cooling Systems

Unisource Energy proposed that a new section 1803.C be created which says "For Distributed Renewable Energy Resources, one Renewable Energy Credit shall be created for each 1.33 metered Ton-Hours of chilling produced by a Solar Industrial Process Heating and Cooling System or Solar Space Cooling System." Unisource Energy additionally proposed that references to Solar Industrial Process Cooling System and Solar Space Cooling Systems be removed from this section. Unisource Energy stated that section 1803.B rewards inefficient heat driven chiller systems by providing the same amount of credits as a very efficient chilling system would receive given the same heat input, although the efficient process provides more useful cooling and ejects less heat to the environment. Unisource Energy stated that its proposed definition will provide proper incentive signals for installation of cost effective efficient chilling systems, and that if the proposed change is adopted, sections 1803.C and 1803.D would be re-designated as sections 1803.D and 1803.E respectively.

Staff stated that it agrees in principle with Unisource Energy's suggestion, but that to apply the suggested change to all size systems may severely disadvantage smaller systems and present a roadblock to the widespread use of solar cooling in a variety of small applications. Staff recommended that the wording suggested by Unisource Energy be incorporated with the words "100-Ton or larger" added after "1.33 Ton-Hours of chilling produced by a". Staff further recommended that the phrase "of less than 100 Tons of cooling" should be added in section 1803.B after both "Solar Industrial Process Heating and Cooling System" and "Solar Space Cooling System".

Unisource Energy made a subsequent filing in which it proposed this additional sentence to be added to the end of its new proposed section 1803.C: "For a Solar Industrial Process Cooling System or Solar Space Cooling System of less than 100 Ton Capacity, one Renewable Energy Credit shall be created for each 1.00 metered Ton-Hours of chilling produced."

Analysis: After considering the arguments presented in support of changing the language of this section, we find that a change in the language is not in the public interest.

Resolution: No change required.

R14-2-1803.D

Issue: *Documentation of* Renewable Energy Credits

APS proposed that the words "renewable electricity" in this section be changed to "electricity." APS stated that while it agrees that careful documentation of energy delivery must accompany the transfer of Renewable Energy Credits as required by section 1814.B.4, it is not possible to explicitly assure that "renewable electricity" has been delivered to a customer.

Western Resource Advocates ("WRA") proposed that section 1803.D be clarified to specify the purpose of the required documentation; that it applies to Affected Utilities and not to sellers of energy who may be independent power producers; to reflect the distinctions between distributed and non-distributed resources made in section 1802, because delivery of distributed resources is to Arizona consumers per section 1802.B; that delivery should be to the Affected Utility's system that serves retail customers; and that there may be additional ways beyond those specified in the current section 1803.D for Affected Utilities to demonstrate that the deliverability requirement has been met. WRA proposed that these clarifications be accomplished by dividing section 1803.D into three sections as follows:

> "D. All transfers of Renewable Energy Credits shall be appropriately documented to demonstrate that the energy associated with the Renewable Energy Credits meets the provisions of R14-2-1802.
>
> E. Any contract by an Affected Utility for purchase or sale of energy and/or Renewable Energy Credits to meet the requirements of this Rule shall explicitly describe the transfer of rights concerning both energy and Renewable Energy Credits.

F. Except in the case of Distributed Renewable Energy Resources, Affected Utilities must demonstrate the delivery of energy from Eligible Renewable Energy Resources to their retail consumers such as by providing proof that the necessary transmission rights were reserved and utilized to deliver energy from Eligible Renewable Energy Resources to the Affected Utility's system, if transmission is required, or that the appropriate control area operators scheduled the energy from Eligible Renewable Energy Resources for delivery to the Affected Utility's system."

Unisource Energy responded that it has no objections to WRA's proposed wording revisions, although it does not believe they improve the meaning of the current language.

Staff stated that it agrees with WRA's proposed restructuring and rewording of section 1803.D, and disagrees with APS' proposal to remove the word "renewable". Staff stated that without a requirement that Affected Utilities document the delivery of the renewable electricity to its customers by providing proof that necessary transmission rights were reserved and utilized, and that control area operators actually scheduled the renewable electricity for delivery to the Affected Utility's customers, Arizona ratepayers would pay a renewable electricity premium for renewable electricity and may not receive the benefits from use of renewable resources.

Analysis: We find that the wording changes suggested by WRA add clarity. While we agree with APS that due to the nature of electricity delivery, it is not possible to explicitly assure that "renewable electricity" has actually been delivered to the customer, the wording changes suggested by WRA address the issue while helping to ensure that renewable electricity was actually delivered to the grid.

Resolution: Add the following three sections E, F, and G in place of the section renumbered as 1803.E pursuant to the discussion regarding the new section 1803.C above:

"E. All transfers of Renewable Energy Credits shall be appropriately documented to

demonstrate that the energy associated with the Renewable Energy Credits meets the provisions of R14-2-1802.

F. Any contract by an Affected Utility for purchase or sale of energy and/or Renewable Energy Credits to meet the requirements of this Rule shall explicitly describe the transfer of rights concerning both energy and Renewable Energy Credits.

G. Except in the case of Distributed Renewable Energy Resources, Affected Utilities must demonstrate the delivery of energy from Eligible Renewable Energy Resources to their retail consumers such as by providing proof that the necessary transmission rights were reserved and utilized to deliver energy from Eligible Renewable Energy Resources to the Affected Utility's system, if transmission is required, or that the appropriate control area operators scheduled the energy from Eligible Renewable Energy Resources for delivery to the Affected Utility's system."

R14-2-1804. Annual Renewable Energy Requirement

1804.A Annual Renewable Energy Requirement

Issue: Public Support

Arizona Public Interest Research Group ("Arizona PIRG") filed comments stating that a statewide poll conducted by Behavior Research Center in July 2005 found 80 percent of those asked stated they would pay up to an extra $2 month to cover the cost of using more renewable energy, and reiterating the large number of letters written to the Commission and e-mails sent to the Commission by individuals in support of increasing Arizona's RES to at least 15 percent by 2025 and stating that clean energy investment is worth a few extra dollars on their electricity bills. Arizona PIRG also reiterated the public comment letters in support of increasing the RES to at least 15 percent by 2025 filed by numerous constituency groups and small businesses. Attached to the Arizona PIRG comments was a list of over 5,500 Arizona citizens from across the state who signed online petitions

in favor of the Proposed RES Rules. Arizona PIRG stated that in large part the online signatures were gathered through efforts of the Arizona League of Conservation Voters, Arizona PIRG, MoveOn.Org, Renewable Energy Access, Union of Concerned Scientists, and Vote Solar.

The Associated Students of Arizona State University at the West Campus filed a comment letter including signatures of 240 individuals obtained by the Campus Climate Challenge Campaign on cards stating "I am signing this public comment to demonstrate that as a citizen of Arizona, I would like the Arizona Corporation Commission to commit to adopting policies that would increase our sources of clean and renewable energy by 15 percent by the year 2025."

Twelve e-mail comments to the Commission in favor of the Proposed RES Rules from members of the Arizona League of Conservation Voters were filed. Additional letters in favor of the RES Rules were filed by Virginia Duncan; Megan Hartman, Founder/Owner, Fourth Dimension Fuels; Nichole Trushell, Executive Director, Highlands Center for Natural History; Keith A. Johnson, P.E., Branch Manager, Bryan A. Stirrat & Associates; Complete Fulfillment & Distribution, LLC; Karen A. Timian, CFO, IMC Magnetics, Inc.; Patricia J. Spott, President, CEO, PS Appraisals & Consulting, Inc.; Suzanne Miller Cook; Muriel Haverland, President, The Mentor Dynamic, Inc.; Carol S. Mansfield, Mansfield Planning Consultants; Joel Wolfson, Owner, Joel Wolfson Photographer, LLC; Lola Boan; Bruce Plenk; Mary Manross, Mayor of the City of Scottsdale; Tina Beattie, Arizona Coordinator of Republicans for Environmental Protection; Richard Potts; Sandra Almasy, President of Creative Costumes & Formal Wear; John Pamperin; Sonja Macys, Executive Director, Tucson Audubon Society; Gabriel Diaz; Sonya Norman; Janice and Michael Dowling; and Debra Kay Huffman.

Chad Kirkpatrick and Tom Jenney, Chairman and Executive Director of Arizona Federation of Taxpayers filed a letter in opposition to the Proposed RES Rules stating that alternative fuels are uneconomical with existing technology, and that without a technology breakthrough, ratepayers could

be subsidizing inefficient energy sources for generations to come.

Analysis: Comments received from the general public have been overwhelmingly in support of the Proposed RES Rules. Comments the Commission has received from the public in opposition to the Proposed RES Rules have been based primarily on economic and reliability concerns. The Proposed RES Rules require Commission approval of Tariffs and annual implementation plans filed by the Affected Utilities so that the Commission can ensure the economical and efficient use of ratepayer funds in order to meet the goals of the Proposed RES Rules.

Resolution: No change required.

Issue: Benefits of the Annual Renewable Energy Requirement

The Annan Group commented that the Proposed RES Rules will build on benefits of the existing Environmental Portfolio Standard Rules ("EPS Rules"), partially quantified in the June 2003 Cost Evaluation Working Group Report, including fuel diversity, increased utility expertise, encouragement of distributed generation, and economic and environmental paybacks, and previously recognized by the Commission at $.03 kWh in Decision No. 66798 (February 19, 2004). The comments included a chart comparing the relative costs of four in-State energy resource options: an estimate of the cost of natural gas systems cost for APS and SRP tied to rising natural gas costs (just under $.10 kWh, at $10 MMBTU), the cost of TEP's large-field Springerville Generating Station's solar electric project (just below $.10 kWh), the cost of APS residential solar electric projects (just over $.11 kWh), and the cost of APS commercial solar electric projects ($.12 kWh, not including the accelerated depreciation available for solar projects on a case-by-case basis, which could lower the cost to the residential level). The comments stated that with the rising cost of natural gas used in APS' dispatching model as appears in direct testimony filed January 31, 2006, on behalf of APS in Commission Docket No. E- 01345A-05-0816, and with the $.03 kWh benefit recognized in Decision

No. 66798, the costs of solar fall below the natural gas $.10 kWh price, and are locked in for thirty years. The comments stated that solar energy offers a degree of certainty, together with economic and environmental benefits in an uncertain energy market, and that solar costs are on the decline, with 30 year levelized energy costs targeted by the recently announced President's Solar America Photovoltaic Initiative, without incentives, at $.08-.10 kWh for residential, $.06-.08 kWh commercial, and $.05-.07 kWh for utility scale projects by the year 2015.

WRA commented that renewable energy is an important resource in western states; compliance with the Proposed RES will increase Arizona utilities' use of renewable energy, but at a moderate pace; low cost, stable priced renewable energy serves as a hedge against high fossil fuel prices; the effects of intermittent wind generation on system reliability are manageable; and greater reliance on renewable energy will reduce the environmental impacts of power generation. WRA stated that the Proposed RES will enable the Commission to better control costs and rates over the long run by diversifying Arizona utilities' portfolios; displacing expensive gas-fired generation with low-cost, stably priced renewable energy over the next quarter century; and reducing compliance costs associated with potential regulation of greenhouse gas emissions.

The Bar-T-Bar Ranch commented that approval of the Proposed RES will allow Arizona family ranches to develop their renewable [wind] resources, protect remaining rangelands, and continue to provide open space for the benefit of all Arizonans. Foresight Wind Energy, LLC stated that the Proposed RES is an important step to diversify Arizona's fuel supply, enhance system reliability and security, mitigate against volatility in non-renewable fuel prices, conserve water resources, and protect air quality. Foresight Wind Energy, LLC also commented that the Proposed RES is fundamental to developing Arizona's renewable resources and bringing clean, reliable and cost-competitive energy to market, and that reasonable integration of intermittent resources and acknowledgment of the externalities from fossil fuel generation are important to its implementation.

The Interwest Energy Alliance commented that wind energy is clean, inexhaustible and cost-stable, and that it offers a cost hedge against the fluctuations in electricity generated from natural gas. The Interwest Energy Alliance also commented that wind energy development creates new local jobs and capital influx, and that the National Renewable Energy Laboratory ("NREL") estimates that for each 100 MW of wind energy constructed, the local community will see tax revenues of approximately $1 million per year in addition to land lease payments to landowners of $2,500 - $4,000 per MW per year.

Unisource Energy responded to the Annan Group comments, stating that in citing the $.03 EPS Rules benefits, the Annan Group did not mention that 69 percent of the benefit was from the Tucson Los Reales landfill to energy project that produces renewable energy at the cost of conventional generation because it uses a conventional coal fired generator and displaces use of coal at the price of coal. Unisource Energy also stated that when the annual production of Tucson solar is given a value at the wholesale rate of spot market energy at Palo Verde and compared to the annual round the clock value of wholesale spot market energy at Palo Verde, the difference in value represents a premium over conventional generation for the annual production of solar energy of 8.6 percent in 2004 and 8.5 percent in 2005. Unisource Energy stated that while there is a value premium for solar produced energy at peak load times, the value to the utility when measured against the wholesale price of non-firm electricity has been less than 10 percent in the past two years.

Unisource Energy stated that it questions the economic benefit estimates from the NREL study noted in Interwest Energy Alliance's comments. Unisource Energy stated that it believes the estimates were once valid, but believes they are based on stale data and generally overstate the current day benefits from wind generation on a local economy.

Unisource Energy stated that it disagreed with Foresight Wind Energy's statement that the Proposed RES is an important step to mitigate against volatility in non-renewable fuel prices because

intermittent resources such as wind must be backed up with fast-responding peaking-type resources, which are typically natural gas and the RES may actually increase exposure to volatile natural gas prices.

Unisource Energy responded to WRA's comments, stating that WRA underestimates the amount of wind resources and associated transmission will be needed and underestimates the costs of integrating wind generation due to its intermittency and the costs of transmission required to bring wind energy to the largest Arizona load centers. Unisource Energy stated that in order to fully quantify the need for future wind related transmission in Arizona, it supports additional study to quantify Arizona's most economical wind resource locations and to then develop a master transmission plan to support the most economical development of those resources. Unisource Energy stated that WRA's claim of low cost renewable energy as compared to conventional generation is unsupported, especially in TEP's case due to TEP's primary reliance on lower cost coal instead of gas fired generation. Unisource Energy also stated that the speculative future benefit of the RES in reducing costs related to greenhouse gas emissions regulations must be measured against the immediate and future increasing costs of the RES.

Analysis: As is evident from the comments summarized here, exact quantification of the future benefits of the adding renewable energy resources to the portfolios of Arizona's Affected Utilities is not possible at this time. However, it is clear that renewable energy sources are not subject to the same price fluctuations and transportation disruptions as conventional fossil fuel energy sources, and renewable energy sources are less polluting than conventional energy sources. As Arizona's load growth continues to increase, continued reliance on fossil fuel generation resources without the addition of renewable generation resources is inadequate and insufficient to promote and safeguard the security, convenience, health and safety of the Affected Utilities' customers and the public in Arizona, and is therefore unjust, unreasonable, unsafe, and improper. The Affected Utilities'

generaton portfolios are not currently adequate or sufficient to meet the minimum requirements of the Proposed RES Rules, which will result in reduced exposure to price fluctuations, transportation disruptions, and air pollution emissions associated with conventional fossil fuel energy sources, and will diversify Arizona's generation resources. It is therefore just, reasonable, proper, and necessary to require the Affected Utilities to include the minimum amount of renewable resources in their generation portfolios required by the Proposed RES Rules and to make additions, improvements or changes to their existing generation portfolios in order to meet the requirements of the Proposed RES Rules, in order to build a diverse fuel supply for Arizona's electricity needs, and to reduce reliance on fossil fuel energy sources in Arizona in order to reduce air pollution emissions and their associated external costs, all in order to promote and safeguard the security, convenience, health and safety of the Affected Utilities' customers and the public in Arizona. The minimum amount of renewable energy resources required in the timeframe covered by the Proposed RES Rules is just, reasonable, and proper at this time, in light of the expected growth in demand for electricity over that timeframe.

Resolution: No change required.

Issue: Achievability

Unisource Energy stated that the requirements are "simply not achievable" and proposed that the requirements be decreased. Unisource Energy stated that the significant gap between the Sample Tariff and the proposed renewable energy requirements leads to a strong concern about cost recovery, and that either the Sample Tariff must be increased or the requirements must be decreased.

The Residential Utility Consumer Office ("RUCO") stated that it is concerned that the costs of compliance with the Proposed RES are not fully known, and it is not clear whether the revenues expected through the Sample Tariff will provide sufficient resources to achieve compliance with the percentage goals. RUCO recommended that prior to adoption of the Proposed RES, that the

Commission assure itself that the expected Tariff revenues will yield a genuine opportunity to achieve the goals without creating unreasonable bill impacts on consumers. In its response comments, RUCO stated that it does not believe it is necessary to demonstrate a present-day ability to accomplish the future years' RES goals before proceeding, and stated that the bar should be set intentionally high to elicit the strongest compliance efforts by the utility project managers. RUCO also stated that it believes that it is in the public interest and in the interest of the ratepayers, now and in the future, that the Commission set challenging goals and objectives for greater development of renewable energy both within Arizona and in the region.

Staff stated that it disagrees with Unisource Energy that the requirements are not achievable, and that of all the Affected Utilities, Unisource Energy should be poised to do well in meeting its requirements. Staff stated that Unisource Energy's landfill gas facility and PV resources should provide a significant contribution to meeting the Annual Renewable Energy Requirement.

Analysis: Section 1808 requires the Affected Utilities to make filings that propose methods of recovering "the reasonable and prudent costs of complying with these rules," not of recovering the amounts appearing in the Sample Tariff. Affected Utilities will have an opportunity to raise this issue based on available facts when they make the filings required by section 1808.

Resolution: No change required.

Issue: Reliability

Unisource Energy proposed that this section be replaced with the following: "In order to promote environmental objectives, each Affected Utility is strongly encouraged to meet an Annual Renewable Energy Requirement by obtaining Renewable Energy Credits from Eligible Renewable Energy Resources." Unisource Energy stated that these changes would shift the RES to a cooperative model where the Commission and Affected Utilities work together to find ways to meet the goals set

by the Commission. Unisource Energy stated that the phrase "reliable electric service at reasonable rates" has little connection to the requirements imposed, as customers will bear the significant cost of the RES, and stated that there has been no Arizona-specific data or analysis presented to this proceeding which supports the premise that Arizona grid reliability will be improved through use of time variable renewable resources in place of firm dispatchable traditional generation resources. Unisource Energy stated that an Arizona-specific study summary attached to its comments demonstrates that the existing renewable facilities studied provided no improvement to reliability. Unisource Energy also stated that reports using data in regions where large amounts of wind energy have been installed demonstrate that the amount of planning capacity from wind generation is a small fraction of the capacity value, capacity credit or capacity factor associated with the resources. Unisource Energy cited to a report published in 2005 concluding that at a 99 percent reliability level, the planning capacity of wind generation in Germany is 6 percent of installed nameplate wind generation capacity; to a report published in 2005 report from E.On Netz on wind integration in Germany concluding that sufficient dispatchable generation resources must be kept on line at all times to provide grid reliability which represent 90 percent of the nameplate wind generation capacity and that planning capacity of 4 percent of nameplate wind generation capacity is available in 2020 when wind generation is expected to provide 15 percent of annual grid energy consumed. Unisource Energy also cited to a study published in 2004 commissioned by Xcel Energy and the Minnesota Department of Commerce finding that integration of wind generation to the grid added a measurable amount of cost of around $4.60/MWh of wind generation from new grid management expenses.

WRA responded that reliability encompasses multiple factors, that the Proposed RES Rules will enhance reliability, and that reliable deployment of renewable energy on a far larger scale than that contemplated by the RES is possible. WRA stated that natural gas and coal for conventional generation are subject to supply disruptions, and renewable energy offers additional resources that

provide electricity during such disruptions; that outages on transmission lines from remote conventional generation resources due to forest fires affect reliability, and distributed generation may be available during transmission service disruptions; and that substation outages such as the outage due to the 2004 Westwing Substation fire may affect reliability, and distributed generation may be available during substation outage service disruptions. WRA also responded that intermittent wind and solar resources typically have capacity value in the power supply system, and that by properly accounting for capacity value, utilities will be able to avoid some investment in new conventional generation capacity while maintaining a reliable system. WRA stated that in regard to the E.On Netz study Unisource Energy cited, E.ON Netz, a transmission provider in Germany, has identified practical problems that need to be resolved to increase wind generation in Germany to 48,000 MW by 2020, and plans to integrate wind power into the supply grid reliably. WRA stated that there are an increasing number of studies that have estimated the capacity value of intermittent renewable energy resources, and cited the following capacity value findings: a capacity credit of about 27 percent of nameplate capacity for prospective wind plants in Minnesota; an average capacity credit of 20 percent of nameplate capacity for prospective wind locations analyzed by PacifiCorp; a preliminary estimate of the capacity credit for wind generation at Altamont, San Gorgonio, and Tehachapi in California at between 22 percent and 26 percent of nameplate capacity (citing to 2004 and 2005 NREL studies); and an APS study published in 1994 finding that for up to 100 MW of PV generation, one and two axis tracking systems contribute about 80 percent capacity value to the system while fixed position systems contribute about 60 percent, that capacity value decreases as PVs on the system increase, and that a fixed position 300 MW PV plant would reduce peak load by about 122 MW. WRA stated that integration costs to maintain system reliability are small, given the amount of wind generation that will serve Arizona customers under the RES, and that NREL studies published in 2004 indicate that the costs range from about $1.47 to $5.50 per MWh, taking into

account unit commitment, load following, and regulation on systems with up to over 20 percent of peak load in wind resources. WRA also cited to a Colorado study completed on May 1, 2006 showing the cost of integrating wind generation into the Public Service Company of Colorado system, including gas supply system impacts, to be $3.51 per MWh when wind penetration is 10 percent and $4.77 per MWh when wind penetration is 15 percent.

Staff stated that it disagrees with Unisource Energy's proposal to change the wording in this section, as it would change a requirement to a suggestion, and would not support the entire RES effort.

Analysis: Comments the Commission has received from the public in opposition to the Proposed RES Rules have been based primarily on economic and reliability concerns. Unisource Energy's comments regarding the phrase "reliable electric service at reasonable rates" stated that customers will bear the costs of the RES, but do not address the costs customers may bear in the absence of the addition of renewable resources to Affected Utilities' energy portfolios. For the reasons given by WRA in response to Unisource Energy set forth above and in the discussion of comments on section 1805.A below, and based on the lack of any Arizona-specific data or analysis presented to this proceeding to support the premise that Arizona grid reliability will be harmed by the addition of renewable resources at the gradual rate required by the RES, we do not believe at this time that the RES will harm system reliability. Based on comments received from the public, it is reasonable to require Staff to continue to host and oversee the workshop process for the development of interconnection standards, and to ensure that the workshop process adequately addresses any reliability concerns related to interconnection of new renewable energy resources with the existing distribution and transmission system. Because the energy costs of renewable resources are very low to nonexistent, and the RES requirements are crafted to increase slowly in conjunction with expected faster load growth, we believe that the RES will result in reliable electric service at reasonable rates.

We agree with Staff that it is inappropriate to change the language in this section from a requirement to a suggestion.

Resolution: No change required.

Issue: Use of in-state/out-of-state resources to satisfy the annual renewable energy requirement.

Mark Harrington, Chairman, Board of Directors of the Eastern Arizona Counties Organization, filed comments requesting that out-of-state energy not be allowed to satisfy renewable energy requirements to ensure that focus remains on utilizing wind energy generated in Arizona and biomass removed from Arizona forest and woodland areas. Matt Ryan, Chairman, and Carl Taylor, a Coconino County Supervisor, each filed comments stating support for the Proposed RES Rules, and stating a hope that much of the energy procured by the Affected Utilities under the new RES will come from Arizona projects, so that rural counties benefit from increased tax revenues and preservation of ranch lands. Supervisor Taylor stated that without a market for wind and other large-scale renewable energy projects, Coconino County and other counties lose a powerful tool for rural economic development and rangeland protection, and that with rising energy costs, it makes sense to diversify Arizona's energy portfolio and offset volatile fossil fuel prices with renewable energy resources.

The Bar-T-Bar Ranch commented that it is hopeful that much of the electricity utilities procure to meet the new RES will come from Arizona projects.

Southwest Windpower filed comments in support of the Proposed RES Rules, and specifically the 30 percent requirement for distributed generation.

Stephanie McKinney, President/CEO of the Greater Flagstaff Economic Council, Inc. commented that she hopes much of the electricity procured by Affected Utilities under the Proposed RES would come from Arizona projects, so that northern Arizona communities and the Tribes realize

the rural economic development and clean energy benefits.

Analysis: The Distributed Renewable Energy Requirement in section 1805 will ensure that a percentage of the Annual Renewable Energy Requirement will come from Arizona resources.

Resolution: No change required.

Issue: Minimum Percentage Requirement

The Interwest Energy Alliance commented that Arizona is surrounded by states that have even more aggressive renewable energy targets than those in the Proposed RES, and proposed that this section specifically state that the goals are floors, not ceilings. WRA recommended that the word "satisfy" in this section be replaced by the words "at least meet" to ensure that the percentages are not misconstrued as a cap on the use of renewable energy or as suggesting that a disallowance could apply to utilities that exceed the requirements.

In response to Interwest Energy Alliance's comment regarding the renewable targets set by surrounding states, Unisource Energy stated that the California, Nevada, and New Mexico goals are not comparable to the RES because California allows "old" renewables, including some large hydro facilities, to meet its 20 percent by 2020 goal; Nevada has good quality, low cost, dispatchable geothermal resources and high capacity factor wind resources to use in meeting its renewable needs, and can use DSM and heat recovery sources and in some cases a multiplier factor for solar to meet its renewable energy goals, but has still not yet met the interim goals on its way to the 2015 20 percent goal; and that New Mexico's requirement is likewise not directly comparable because of its excellent native wind resources and multipliers for certain renewable technologies, and the fact that Public Service Company of New Mexico's solar and biomass resource offerings were priced above the level where cost recovery would be allowed under New Mexico's renewable rules.

Staff stated that it agrees that the Proposed RES Rules should not be perceived as a ceiling on

the use of renewable energy resources, but disagrees that the wording in the current rules has that effect. Staff stated that it is clear from the Proposed RES Rules as a whole that they are not a limitation on an Affected Utility's reliance on electricity from renewable energy resources.

Analysis: We agree with Staff that it is clear from the Proposed RES Rules as a whole that they are not a limitation on an Affected Utility's reliance on electricity from renewable energy resources.

Resolution: No change required.

R14-2-1804.B

Issue: First Year's Requirement

APS proposed that the following language be added to this section: "The annual percentage for each Affected Utility will be pro rated for the first year based on when the utility's funding mechanism is approved."

Staff stated that it agrees with APS regarding pro rating the requirements in the first year, but that since there is already a 1.05 percent renewable requirement in 2006, the appropriate amount to prorate would be the "increase" in that year. Staff recommended inclusion of the following language in this section: "The annual increase in the annual percentage for each Affected Utility will be pro rated for the first year based on when the Affected Utility's funding mechanism is approved."

Analysis: We agree with APS regarding pro rating the requirements in the first year, and find that Staff's recommended language best accomplishes this goal.

Resolution: Add the sentence "The annual increase in the annual percentage for each Affected Utility will be pro rated for the first year based on when the Affected Utility's funding mechanism is approved." after "15.00%".

R14-2-1805. Distributed Renewable Energy Requirement

R14-2-1805.A

Issue: Requirement vs. Suggestion

Unisource Energy proposed that the phrase "shall be required to" be changed to "is strongly encouraged to" for the reasons noted in its comments to section 1804.A.

Staff stated that it disagrees with Unisource Energy, as the wording modification would change a clearly defined requirement into a weak, unenforceable suggestion, defeating the intent of this section. Staff noted that the Affected Utilities accomplished very few distributed applications under the EPS Rules, which "encouraged" and provided incentives for Distributed Renewable Energy Resources.

Analysis: We agree with Staff that the wording modification proposed by Unisource Energy would change a clearly defined requirement into a weak, unenforceable suggestion, defeating the intent of this section.

Resolution: No change required.

Issue: Distributed Generation Impacts on System Reliability

Unisource Energy stated that the phrase "[i]n order to improve system reliability" should be deleted, based on an undated Japanese report on grid-connected clustered PV systems.

WRA responded that system reliability issues associated with clusters of distributed generation are manageable, and that the Commission's working group on interconnection rules for distributed generation is developing processes for utility review of proposed projects to address reliability concerns. WRA stated that one element of this review is a screening rule that may require an impact study for a proposed project if the aggregate distributed generation on a radial circuit exceeds 15 percent of the annual peak load on that circuit, such that potential reliability problems

associated with clustered projects would be addressed before they occurred.

VSI also weighed in on this issue, stating that under the interconnection procedures being developed to address this potential issue, if the impact study showed a stability issue, the generator would have to pay for remedial action.

Analysis: Any reliability concerns associated with distributed generation applications should be addressed by the interconnection procedures being developed by the Distributed Generation Working Group.

Resolution: No change required.

R14-2-1805.B

Issue: First Year's Requirement

APS proposed that the following language be added to this section: "The annual percentage for each Affected Utility will be pro rated for the first year based on when the utility's funding mechanism is approved."

Staff stated that it agrees with APS regarding pro rating the requirements in the first year, but that since there is already a 1.05 percent renewable requirement in 2006, the appropriate amount to prorate would be the "increase" in that year. Staff recommended inclusion of the following language in this section: "The annual increase in the annual percentage for each Affected Utility will be pro rated for the first year based on when the Affected Utility's funding mechanism is approved."

Analysis: We agree with APS regarding pro rating the requirements in the first year, and find that Staff's recommended language best accomplishes this goal.

Resolution: Add the sentence "The annual increase in the annual percentage for each Affected Utility will be pro rated for the first year based on when the Affected Utility's funding mechanism is

approved." after "30%".

R14-2-1808. Tariff

R14-2-1808.A

Issue: Cost recovery for compliance

Unisource Energy proposed that the following sentence be added to the beginning of this section in order to clarify the Commission's intentions regarding cost recovery: "The Commission will allow an Affected Utility to recover all reasonable and prudent costs of complying with these rules."

Staff stated that it does not agree that the wording proposed by Unisource Energy is needed, because section 1808.A already provides that the Tariff shall be designed to recover the reasonable and prudent cost of compliance.

Analysis: Section 1808 requires the Affected Utilities to make filings that propose methods of recovering "the reasonable and prudent costs of complying with these rules," not of recovering the amounts appearing in the Sample Tariff. TEP and UNSE will have an opportunity to raise this issue based on available facts when they make the filings required by section 1808.

Resolution: No change required.

Issue: Form of Tariff

APS proposed adding "in substantially the same form as the Sample Tariff set forth in these rules" after "Tariff" in this section.

Staff stated that it agrees with APS' proposed language addition. Staff also proposed, in order to clarify the purpose of the Sample Tariff, the addition of the following sentence to the end of section 1808.A: "The specific amounts in the Sample Tariff are for illustrative purposes only and Affected Utilities may submit, with proper support, Tariff filings with alternative surcharge amounts."

Analysis: We agree that the language proposed by APS and by Staff clarifies the requirement of this section.

Resolution: Add "in substantially the same form as the Sample Tariff set forth in these rules" after "Tariff" in this section. Also add the following sentence to the end of section 1808.A: "The specific amounts in the Sample Tariff are for illustrative purposes only and Affected Utilities may submit, with proper support, Tariff filings with alternative surcharge amounts."

R14-2-1808.B.1

Issue: Information to Accompany Tariff

Unisource Energy proposed that the following language be added at the end of this section in order to specify the level of detail or format for fair value information that should be provided: "Information submitted in the format of an Annual Report required under A.A.C. R14-2-212.G.4 will be sufficient to satisfy this requirement." Unisource Energy stated that it would be impractical to provide the level of fair value information required for a rate case.

Staff stated that it believes Unisource Energy's recommendation presumes that the information in an Annual Report format will be sufficient in every case, whereas Staff believes that the information in the format of the Annual Report should be the bare minimum that should be filed, and that more information may be required. Staff recommended that Unisource Energy's proposed wording be modified as follows: "Information submitted in the format of the Annual Report required under A.A.C. R14-2-212.G.4 will be the minimum information necessary for filing a Tariff application but Staff may request additional information depending upon the type of Tariff filing that is submitted."

Analysis: We agree with Unisource Energy that it is helpful to provide clarification on the type of information necessary to satisfy this requirement, and find that Staff's recommended language provides the proper level of clarity.

Resolution: Add the following language to the end of section 1808.B.1: "Information submitted in the format of the Annual Report required under R14-2-212(G)(4) will be the minimum information necessary for filing a Tariff application but Commission Staff may request additional information depending upon the type of Tariff filing that is submitted."

R14-2-1808.C

Issue: Effective Date of Requirement

Unisource Energy stated that given the 180 day timeframe for Commission consideration of a proposed Tariff, during which time the utility will not be recovering its costs, the Annual Renewable Energy Requirement should not go into effect for an Affected Utility until its Tariff is approved. Unisource Energy proposed the following language be added as a new section 1808.F: "The requirements of R14-2-1804 and R14-2-1805 shall not apply to an Affected Utility until (1) the Affected Utility's Tariff is approved under R14-2-1808(C); (2) the Affected Utility's adjustor is reset under R14-2-1808(D); or (3) the rate case contemplated by R14-2-1808(E) is concluded."

APS agreed that the Annual Renewable Energy Requirement should not go into effect for an Affected Utility until its Tariff is approved. APS proposed that additional language be added to the end of this section as follows: "The Affected Utility's Annual Renewable Energy Requirement, as set forth in R14-2-1804.B, and Distributed Renewable Energy Requirement, as set forth in R14-2-1805.B, will be effective upon Commission approval of the Tariff filed pursuant to this section."

Staff stated that it agrees with APS and Unisource Energy, and recommended inclusion of the APS proposed wording.

Analysis: The clarification proposed by Unisource Energy and APS is appropriate, and the wording proposed by APS best accomplishes the clarification.

Resolution: Add the following language to the end of section 1808.C: "The Affected Utility's

Annual Renewable Energy Requirement, as set forth in R14-2-1804(B), and Distributed Renewable Energy Requirement, as set forth in R14-2-1805(B), will be effective upon Commission approval of the Tariff filed pursuant to this Section."

R14-2-1808.D

Issue: Effective Date of Requirement

Unisource Energy proposed the following language be added as a new section 1808.F: "The requirements of R14-2-1804 and R14-2-1805 shall not apply to an Affected Utility until (1) the Affected Utility's Tariff is approved under R14-2-1808(C); (2) the Affected Utility's adjustor is reset under R14-2-1808(D); or (3) the rate case contemplated by R14-2-1808(E) is concluded."

APS agreed that the Annual Renewable Energy Requirement should not go into effect for an Affected Utility until its adjustor mechanism rate is approved. APS proposed that additional language be added to the end of this section as follows: "The Affected Utility's Annual Renewable Energy Requirement, as set forth in R14-2-1804.B, and Distributed Renewable Energy Requirement, as set forth in R14-2-1805.B, will be effective upon Commission approval of the adjustor mechanism rate filed pursuant to this section."

Staff stated that it agrees with APS and Unisource Energy, and recommended inclusion of the APS proposed wording.

Analysis: The clarification proposed by Unisource Energy and APS is appropriate. The wording proposed by APS best accomplishes the clarification.

Resolution: Add the following language the end of section 1808.D: "The Affected Utility's Annual Renewable Energy Requirement, as set forth in R14-2-1804(B), and Distributed Renewable ~~Energy Requirement, as set forth in R14-2-1805(B),~~ will be effective upon Commission approval of the adjustor mechanism rate filed pursuant to this Section."

R14-2-1809. Customer Self-Directed Renewable Energy Option

Issue: Cap on Funds

Unisource Energy stated that is concerned that if the Tariff required to provide full RES program expense reimbursement is set at a level above the Sample Tariff, additional customers will qualify to apply for the Customer Self Directed Renewable Energy Option to create a further draw on funding which Unisource Energy believes would undermine funds expected to be available for other RES program elements, resulting in a need for additional increases in Tariffs in following years. Unisource Energy proposed that a new section 1809.D be added as follows: "In no case will the funds provided annually for the Customer Self Directed Renewable Energy Option exceed 2.5 % of the total RES program funding for that year."

Staff noted that the program has not yet been tried by any utility, and stated that it disagrees with Unisource Energy's proposed limitation of funds for the Customer Self-Directed Renewable Energy Option. Staff proposed instead that the Commission review at least two years of actual program results before making a determination to limit the funds.

Analysis: We agree with Staff that since this is a new program, it is reasonable to monitor whether Unisource Energy's concern materializes and to consider changes in the event that it does.

Resolution: No change required.

R14-2-1809.C

Issue: Application of Renewable Energy Credits

APS stated that as a result of the size and performance variability of systems qualifying under the Customer Self-Directed Option category, it is more effective to account for the installed system's performance by deducting the Eligible Customer's energy from APS' annual retail kWh used to calculate the Affected Utility's annual RES requirement than to apply all Renewable Energy Credits derived from the project to satisfy the annual RES requirement. APS proposed replacing this section

with the following: "For each Eligible Customer that participates in this option, the Affected Utility shall deduct the Eligible Customer's annual kWh load that is supplied by the Affected Utility from the Affected Utility's retained kWh for purposes of calculating its Annual Renewable Energy Requirement pursuant to R14-2-1804.B."

Staff stated that it disagrees with the APS proposal to remove Self-Directed customers from the calculation of kWh requirements, because although purchases will be less after the Self-Directed project is completed, Self-Directed customers will still buy electricity at retail from the Affected Utility.

Analysis: Because Self-Directed customers will still buy electricity at retail from the Affected Utility, their annual kWh load should not be deducted from the Affected Utility's retained kWh for purposes of calculating its Annual Renewable Energy Requirement pursuant to R14-2-1804.B.

Resolution: No change required.

R14-2-1810. Uniform Credit Purchase Program

Issue: Additional Programs

Unisource Energy proposed that a new section C be added to section 1810 as follows: "Affected Utility implementation of a Uniform Credit Purchase Program will not prevent an Affected Utility from requesting and receiving Commission approval of additional customer distributed renewable energy incentive programs in order to meet the requirements of these rules." Unisource Energy wishes to retain the flexibility to develop other programs if the Uniform Credit Purchase Program does not create sufficient customer investment to meet the Distributed Renewable Energy Requirements for all Affected Utilities.

Staff stated that it agrees with Unisource Energy's proposed language.

Analysis: After considering the arguments presented in support of changing the language of this section, we find that a change in the language is not in the public interest.

Resolution: No change required.

R14-2-1812. **Compliance Reports**

R14-2-1812.B

Issue: **Cost Information for Compliance Reports**

It was proposed that the following new language be inserted in this section, and that the section be renumbered to conform, as follows: "4. Cost information regarding cents per actual kWh of energy obtained from Eligible Renewable Energy Resources and cents per kW of generation capacity, disaggregated by technology type."

Analysis: After considering the arguments presented in support of adding the proposed language to this section, we find that the public interest requires the addition of the following language:

"4. Cost information regarding cents per actual kWh of energy obtained from Eligible Renewable Energy Resources and cents per kW of generation capacity, disaggregated by technology type."

Resolution: Insert the following language in this section, and renumber the section to conform:

"4. Cost information regarding cents per actual kWh of energy obtained from Eligible Renewable Energy Resources and cents per kW of generation capacity, disaggregated by technology type."

R14-2-1812.D

Issue: Consolidation of Reporting Requirements

Unisource Energy noted that it has numerous reporting requirements related to renewable programs, and believes it will be more beneficial to the Commission, Staff and interested parties if all relevant reported information is located in one place, and proposed the addition of a new section D to section 1812 as follows: "The compliance report required herein shall also include all information which an Affected Utility is required to submit to the Commission concerning renewable programs or green pricing programs under other reporting requirements established by the Commission. All such other reporting requirements shall be satisfied by providing the combined report described herein."

Staff stated that it agrees with Unisource Energy's recommendation.

Analysis: After considering the arguments presented in support of changing the language of this section, we find that a change in the language is not in the public interest.

Resolution: No change required.

R14-2-1813. Implementation Plans

R14-2-1813.A

Issue: Commission Review and Approval

APS proposed that the beginning of this section be changed to read as follows: "Within 60 days of the effective date of these rules, each Affected Utility shall file with Docket Control for Commission review and approval a plan that describes how it intends to comply with these rules through 2007. Then beginning July 1, 2007, and every July 1st thereafter, each Affected Utility shall file with Docket Control for Commission review and approval a plan that describes how it intends to comply with these rules for the next calendar year."

Staff stated that it does not disagree with APS' recommendations.

Analysis: After considering the arguments presented in support of changing the language of this section, we find that a change in the language is not in the public interest.

Resolution: No change required.

R14-2-1813.C

Issue: Timing of Commission Review and Approval of Implementation Plan

APS proposed that this section be changed to read as follows: "The Commission shall determine within 120 days of filing whether an Affected Utility's implementation plan satisfies the requirements of these rules."

Analysis: After considering the arguments presented in support of changing the language of this section, we find that a change in the language is not in the public interest.

Resolution: No change required.

R14-2-1814. Electric Power Cooperatives

Issue: Appropriate Plan

Grand Canyon State Electric Cooperative Association, Inc. ("GCSECA") commented that this section recognizes the unique challenges faced by the Cooperatives in implementing and funding renewable programs by allowing the Cooperatives to file plans similar to the EPS Rules plan currently in effect.

The Arizona Municipal Power Users' Association commented that it believes this section is clear and will accomplish the desired goal and objective while allowing for discretion in assessing the impact on customers, and that it codifies the procedures followed since adoption of the EPS Rules.

Unisource Energy commented that the term "appropriate plan" is not defined and offers no guidance as to what such a plan should include, and proposed the addition of a new section C as follows: "For the purposes of this rule, an "appropriate plan" is defined as a plan which provides (1) a full cost-benefit analysis of any proposed deviations from these rules; (2) a comprehensive analysis of why compliance with these rules is impracticable; (3) a report showing the environmental effects of allowing the proposed deviations from these rules; and (4) a summary of all efforts made to comply with these rules, and why those efforts have not been successful."

The Arizona Municipal Power Users' Association and GCSECA both responded to Unisource Energy's proposed language addition, and recommended that it be rejected, stating that the cost benefit analysis, environmental effects report and other suggested requirements ignore the economic nature of the Cooperatives' situation, would cause unnecessary and extraordinary expense, and would complicate the process which is now working well.

Staff stated that it agrees with Unisource Energy's proposed language and recommended that it be added.

Analysis: After considering the arguments presented in support of changing the language of this section, we find that a change in the language is not in the public interest.

Resolution: No change required.

R14-2-1815. Enforcement and Penalties

R14-2-1815.C

Issue: Penalties

VSI stated that the interests of the ratepayers are best served by including enforcement and penalty provisions because the history of compliance with the EPS Rules indicates that penalty provisions are necessary to secure compliance; that most states with similar renewable energy requirements include enforcement and penalty provisions; and that it should not be forgotten that the RES Rules cover investor-owned utilities with primary fiduciary responsibility to the financial interests of shareholders, so that when it comes to compliance, strict penalties are necessary in order to strengthen well-meaning management's hand against shareholders focused on short-term personal gain.

APS stated that this penalty provision would be strengthened by clarifying that so long as an Affected Utility complies with an implementation plan approved by the Commission, it will not be subject to penalties for failure to meet the Annual Renewable Energy Requirement or the Distributed Renewable Energy Requirement. APS proposed that section 1815.C be changed to read as follows: "If the Commission finds after affording an Affected Utility notice and an opportunity to be heard that the Affected Utility has failed to comply with its implementation plan approved by the Commission as set forth in R14-2-1813, the Commission may find that the Affected Utility shall not recover the costs of meeting the shortfall described in R14-2-1815.B in rates." In conjunction with this proposed language, APS proposed that the Commission approve Affected Utilities' annual implementation plans pursuant to section 1813 within 120 days of filing.

Unisource Energy proposed that the penalty section be deleted, arguing that there are many

factors that could cause a shortfall, including the uncertainty and risk associated with renewable projects, and that the Commission should determine any ratemaking disallowance based on prudence. In response comments, Unisource Energy stated that it believes APS' proposal that the penalty rule not apply in cases where the utility has complied with the implementation plan approved by the Commission is a sound proposal that essentially creates a "safe harbor" for the utility that will ensure that unforeseen events beyond a utility's control do not cause penalties.

Staff stated that it disagrees with both APS and Unisource Energy. Staff stated that this section is not punitive and the Commission has always had the authority to enforce its regulations.

Analysis: We agree with VSI that the history of compliance with the EPS Rules indicates that penalty provisions are necessary to secure compliance, and disagree with Unisource Energy's proposal to delete this section. We agree with APS, however, that this penalty provision would be strengthened by clarifying that so long as an Affected Utility complies with an implementation plan approved by the Commission, it will not be subject to penalties for failure to meet the Annual Renewable Energy Requirement or the Distributed Renewable Energy Requirement.

Resolution: Change section 1815.C to read as follows: "If the Commission finds after affording an Affected Utility notice and an opportunity to be heard that the Affected Utility has failed to comply with its implementation plan approved by the Commission as set forth in R14-2-1813, the Commission may find that the Affected Utility shall not recover the costs of meeting the shortfall described in R14-2-1815 (B) in rates."

R14-2-1815.D

Issue: Clarification of the Waiver Provision

It was proposed that section D be deleted from this rule, that section 1815 be renumbered to conform, and that a new Section R-14-2-1816 be inserted as follows:

"R-14-2-1816 Waiver from the Provisions of this Article

A. The Commission may waive compliance with any provision of this Article for good cause.

B. Any Affected Utility may petition the Commission to waive its compliance with any provision of this Article for good cause.

C. A petition filed pursuant to these rules shall have priority over other matters filed at the Commission."

Analysis: After considering the arguments presented in support of deleting section D from section 1815 and adding the proposed language to this section, we find that the public interest requires deleting section D from section 1815, renumbering section 1815 to conform, and adding a new section 1816 as follows:

"**R-14-2-1816 Waiver from the Provisions of this Article**

A. The Commission may waive compliance with any provision of this Article for good cause.

B. Any Affected Utility may petition the Commission to waive its compliance with any provision of this Article for good cause.

C. A petition filed pursuant to these rules shall have priority over other matters filed at the Commission."

Resolution: Delete section D from section 1815, renumber the section to conform, and add a new section 1816 as follows:

"**R-14-2-1816 Waiver from the Provisions of this Article**

A. The Commission may waive compliance with any provision of this Article for good cause.

B. Any Affected Utility may petition the Commission to waive its compliance with any provision of this Article for good cause.

C. A petition filed pursuant to these rules shall have priority over other matters filed at the Commission."

R14-2-1815.E

Issue: Standard for Penalties

Unisource Energy proposed that this section be deleted, stating that the RES should be based on a cooperative model, and that the Commission should determine any ratemaking disallowance by applying the prudence standard based on the facts and circumstances of each case.

Staff disagreed with Unisource Energy's proposal, stating that the Commission always has the authority to enforce its rules and does so with due process.

Analysis: We agree with Staff that the Commission always has the authority to enforce its rules and does so with due process.

Resolution: No change required.

Appendix A. Sample Tariff

Issue: Sample Monthly Assessments

APS proposed that the sample monthly assessments per kWh that appear in the Sample Tariff should be left blank, or that it should be better clarified that the amounts are included only for demonstration purposes and will be separately determined for each Affected Utility. APS stated that the Sample Tariff implies that the amounts included in the Sample Tariff will be adequate for all Affected Utilities when that likely will not be accurate, and that the Sample Tariff should not be presented as anything more than a Sample Tariff to be adopted by each Affected Utility to reflect its unique circumstances.

Unisource Energy stated that Staff's statement in its April 18, 2006 response to Commissioner Gleason's April 7, 2006 letter that "proposed surcharge levels should be sufficient for at least the first three or four years" is an acknowledgement that the Sample Tariff will be inadequate after three or four years. Unisource Energy stated that the gap will only widen as the Sample Tariff remains

unchanged while renewable requirements escalate yearly.

Staff stated that it does not believe the specific amounts currently included in the Sample Tariff should be removed, and proposed instead that language be added to section 1808 clarifying that the specific amounts in the Sample Tariff are for illustrative purposes only and that Affected Utilities may submit, with proper support, tariff filings with alternative surcharge amounts.

Analysis: The addition to section 1808 of the clarifying language recommended by Staff has addressed the issues raised by Unisource Energy and APS.

Resolution: No change to the Sample Tariff is required.

Responses to Commissioner Gleason's April 7, 2006 Letter

On April 7, 2006, Commissioner Gleason filed a letter in the Commission's rulemaking docket requesting that the record address the Commission's constitutional and statutory authority to promulgate each of the proposed Renewable Energy Standard and Tariff Rules ("Proposed RES Rules"), and the extent to which relevant case law would limit the authority to enforce the Proposed RES Rules. The letter also requested that the record address answers to questions related to yearly retail demand through the year 2030; the amount of electricity required under the Proposed RES Rules for each of those years and how much of it will be above the Market Cost of Comparable Conventional Generation; the projected Market Cost of Comparable Conventional Generation for each of those years; a breakdown of distributed and non-distributed requirements for each year, with the amount produced from each allowed technology and the cost above the Market Cost of Comparable Conventional Generation; the projected cost of the infrastructure required to meet the RES; the Affected Utilities' total cost to comply with the RES, whether the revenue produced by implementing the sample tariff will be sufficient for compliance, and if not, what the yearly cost per kWh will be to the ratepayer; the percent of the cost of RES-eligible kWh or equivalent credits that would be subsidized with public money under current State and Federal law, and including the

Proposed RES Rules; and what methodology will be used to determine the market cost of comparable conventional generation, including the specific method that will be used to calculate avoided costs. Commissioner Gleason requested in his letter that parties file responses to his questions by April 18, 2006. On April 20, 2006, Commissioner Gleason docketed a copy of a letter to the Commission's Utilities Division Staff ("Staff") requesting an addendum to Staff's April 18, 2006 to specifically address the extent to which the Commission's statutory authority for each of the Proposed RES Rules satisfies all applicable provisions of the Arizona Administrative Procedure Act, including A.R.S. § 41-1001.01(A)(8) and § 41-1030(C), and requesting that the addendum address A.R.S. § 40-207 in its evaluation.

A summary of responses received to the April 7, 2006 and April 20, 2006 letters is set forth below.

Issue: Constitutional and statutory authority to promulgate each of the Proposed RES Rules and the extent to which relevant case law would limit the authority to enforce the Proposed RES Rules

Unisource Energy

Unisource Energy responded that a rule authorizing a surcharge to recover costs incurred in RES programs may fall within the Commission's constitutional ratemaking authority, but that imposition of a renewable energy requirement regulates conduct, not rates. Unisource Energy stated that no statute mentions the promotion of renewable energy, or allows the Commission to proscribe the sources of energy used to serve the public. Unisource Energy also stated that it could be argued that the RES would run afoul of the management interference doctrine. In summarizing its response to Commissioner Gleason's question regarding authority for the Proposed Rules, Unisource Energy stated that "neither the constitution nor any statute grants the Commission the authority to adopt the current draft of the RES."

Unisource Energy responded that a rule authorizing a surcharge to recover costs incurred in

RES programs, but which does not mandate specific levels of renewable energy, may fall within the Commission's constitutional ratemaking authority. Unisource Energy stated that, in contrast, a rule that imposes an "Annual Renewable Energy Requirement" does not fall within the Commission's ratemaking power because such a rule regulates conduct, not rates.

APS

APS stated that whether or not the Commission has authority to promulgate the Proposed RES Rules is an unresolved issue of law as there are no cases on point. APS stated that it is undisputed that the Commission has broad constitutional authority, particularly in the area of ratemaking, to proscribe just and reasonable classifications, rates and charges to be made and collected by public service corporations, which authority extends to the promulgation and enforcement of reasonable rules, regulations and orders to serve the convenience, comfort, health and safety of the employees and patrons of such public service corporations. APS stated that Arizona courts have found that rules promulgated by the Commission may be invalid if they impermissibly interfere with the management of a public service corporation. APS stated that the penalty provisions in the Proposed RES Rules may exceed the Commission's constitutional and statutory authority, and that should the Commission elect to incorporate the penalty provision, APS' proposed changes, set forth in its comments on the Proposed RES Rules, should be adopted.

GCSECA

GCSECA submitted its response on behalf of Arizona Electric Power Cooperative, Inc.; Duncan Valley Electric Cooperative, Inc.; Graham County Electric Cooperative, Inc.; Mohave Electric Cooperative, Inc.; Sulphur Springs Electric Cooperative, Inc.; and Trico Electric Cooperative, Inc. (collectively "Cooperatives"). GSECA stated that two recent decisions of the Arizona Court of Appeals rejected arguments that several provisions of the Commission's

Competitive Telecommunications Rules and Electric Competition Rules related to the Commission's constitutional ratemaking power; that no statutes authorize the Commission to adopt regulations mandating a particular mix or type of generation resource; and that the Arizona Supreme Court has found that the Commission does not have the authority to interfere with the general power of management incident to ownership of a utility.

WRA

WRA stated that given that one objective of the Proposed RES Rules is to mitigate against volatile fuel prices and that higher rates they cause, and that fuel prices have a direct impact on rates, promulgation of the Proposed RES Rules is a clear exercise of the Commission's constitutional ratemaking authority. WRA stated that while the Commission's constitutional authority is sufficient to support promulgation of the Proposed RES Rules, statutory authority also exists in A.R.S. §§ 40-321(A) and 331(A). WRA also stated that because the Proposed RES Rules constitute a single regulatory scheme, they cannot reasonably be separated for analysis. WRA stated that the Commission also possesses constitutional and statutory enforcement powers sufficient to enforce the Proposed RES Rules.

Staff

Staff stated that the Commission's constitutional ratemaking authority is not limited to setting actual rates, but extends to matters determined by the Commission as necessary to the ratemaking process. Staff stated that the Proposed RES Rules as a whole are necessary steps in ratemaking because, as set forth in Commission Decision No. 68566 (March 14, 2006), they promote the Commission's goals to protect the environment, increase renewable energy resources for diversity of fuel supply, enhance system reliability and safety in a post 9/11 era, and mitigate against volatility in non-renewable fuel prices. Staff stated that even if the Proposed RES Rules were found not to be

ratemaking or necessary steps to ratemaking, it could be asserted that statutory support for the Proposed RES Rules, taken as a whole as well as individually, may be found in A.R.S. §§ 40-202, 321, -322, -331, and -361. Staff stated that A.R.S. § 40-202.A provides in relevant part that the Commission may supervise and regulate public service corporations and do all things (whether or not specifically provided for by statute) that are necessary and convenient in the Commission's exercise of its power and jurisdiction; that A.R.S. § 40-321 grants the Commission statutory authority to adopt rules to ensure "just, reasonable, safe, proper, adequate, or sufficient" electric service; that A.R.S. § 40-322 grants the Commission authority to adopt rules to set "just and reasonable standards, classifications, regulations, practices, measurements or service" by electric public service corporations; and that the Commission has statutory authority to "order additions, improvements or changes in plant of public service corporations" pursuant to A.R.S. § 40-331.

In its addendum requested by Commissioner Gleason, Staff stated that under Arizona's Administrative Procedure Act, which creates procedural rights, an agency may not make a rule under a specific grant of rulemaking authority that exceeds the subject matter areas listed in the specific statute, and may not make a rule under a general grant of authority to supplement a more specific grant of rulemaking authority. Staff stated that the Administrative Procedures Act appears to govern statutory construction of specific grants of rulemaking authority, but does not appear, on its face, to provide rules of statutory construction for broad grants of rulemaking authority. Staff also addressed A.R.S. § 40-207 and the Proposed RES Rules, stating that there is no case on point that interprets this statute in the context of the Commission's authority to adopt rules like the Proposed RES Rules. Staff stated that it is not clear from the terms of this statute taken as a whole in the context of its adoption by Laws 1998 that it is intended to do more than provide for certification and monitoring of electricity suppliers in the context of the legislature's attempt to encourage electric competition, and that it is unlikely that the statute removes the Commission's authority under other statutes, such as

A.R.S. §§ 40-321, -322, -331, and -361, because the terms of § 40-207 do not effect such a result, and repeal by implication is not favored by the law.

Issue: Yearly total retail demand through the year 2030 for electricity in Arizona in kWh

Unisource Energy

Unisource Energy stated that its responses are for TEP only for years 2006 through 2045, rather than through 2030 as requested. Unisource Energy stated that the expected RES programs will result in contracts entered into in 2025 with a term of 20 years and Production Incentive Payment agreements with a term of 20 years entered into in 2025, creating a payment obligation through 2045. Unisource Energy stated that to look at program expenses only through 2030 would not capture the full scope of program revenues which must be reimbursed. However, the table attached to Unisource Energy's response, to which it referred for the answer to this question included only the years 2006 through 2015.

2006	9,212,000 kWh
2007	9,442,300 kWh
2008	9,678,358 kWh
2009	9,920,316 kWh
2010	10,168,324 kWh
2011	10,422,532 kWh
2012	10,683,096 kWh
2013	10,950,173 kWh
2014	11,223,927 kWh
2015	11,504,526 kWh

APS

APS stated that its responses are for APS alone, and that the following retail sales estimates assume an annual growth rate of 3.0 percent:

2007	28,740 GWh

2008	29,602 GWh
2009	30,490 GWh
2010	31,405 GWh
2011	32,347 GWh
2012	33,317 GWh
2013	34,317 GWh
2014	35,346 GWh
2015	36,407 GWh
2016	37,499 GWh
2017	38,624 GWh
2018	39,782 GWh
2019	40,976 GWh
2020	42,205 GWh
2021	43,471 GWh
2022	44,776 GWh
2023	46,119 GWh
2024	47,502 GWh
2025	48,927 GWh
2026	50,395 GWh
2027	51,907 GWh
2028	53,464 GWh
2029	55,068 GWh
2030	56,720 GWh

GCSECA

GCSECA stated that the Cooperatives have not estimated or quantified the cost of compliance with sections 1804 and 1805, but that they are currently performing an analysis to determine the amount of RES funds that will be available as well as the RES projects for the future, and that this information will be reviewed by the Commission as a part of the Cooperatives' revised RES plan that will be filed pursuant to section 1814, 60 days after the effective date of the Proposed RES Rules or by December 31, 2006, whichever occurs first.

WRA

WRA estimated a steady increase from over 40,000 GWH in 2006 to 105,000 GWH in 2030 with an assumed growth rate of 3.9 percent per year applied to the Affected Utilities.

Staff

Staff stated that the general assumptions behind its estimates are as follows: 1) renewable energy systems installed to meet the RES requirements have a life of 20 years or more; 2) funds used to purchase RES kWh or install renewable systems will be used to pay for the costs in excess of the Market Cost of Comparable Conventional Generation; 3) the remainder of the costs of renewable kWh purchases (equal to the Market Cost of Comparable Conventional Generation) will be paid for with utility power purchase funds, just as the utility currently purchases conventional kWh from gas generators, coal plants, etc. For utility-owned renewable installations, the utility would use shareholder funds to finance the Market Cost of Comparable Conventional Generation portion of total installed cost; 4) Distributed Resources (that do not generate electricity) installed in any year will reduce electricity demand for the next 20 years. (This slows the annual increase in retail electricity demand.); and 4) the estimates reflect the requirements of the Proposed RES Rules, and any changes to the rule wording or assumptions used to reach the estimates may change the estimates.

2006	39,658,893,931 kWh
2007	40,825,683,377 kWh
2008	41,993,685,766 kWh
2009	43,151,309,954 kWh
2010	44,285,844,195 kWh
2011	45,348,335,407 kWh
2012	46,316,431,671 kWh
2013	47,238,406,560 kWh
2014	48,110,616,499 kWh
2015	48,924,308,525 kWh
2016	49,678,150,579 kWh
2017	50,298,630,680 kWh
2018	50,776,891,239 kWh

2019	51,107,753,462 kWh
2020	51,290,744,774 kWh
2021	51,316,623,286 kWh
2022	51,191,154,142 kWh
2023	50,904,647,490 kWh
2024	50,459,977,214 kWh
2025	49,859,093,498 kWh

Issue: Number of RES-eligible kWh the Affected Utilities will be required to supply in each year through 2030 to meet the RES

Unisource Energy

Unisource Energy stated that its responses are for TEP only for years 2006 through 2045, rather than through 2030 as requested. Unisource Energy stated that the expected RES programs will result in contracts entered into in 2025 with a term of 20 years and Production Incentive Payment agreements with a term of 20 years entered into in 2025, creating a payment obligation through 2045. Unisource Energy stated that to look at program expenses only through 2030 would not capture the full scope of program revenues which must be reimbursed. However, the table attached to Unisource Energy's response, to which it referred for the answer to this question included only the years 2006 through 2015.

2006	115,150 MWh
2007	141,635 MWh
2008	169,371 MWh
2009	198,406 MWh
2010	254,208 MWh
2011	312,676 MWh
2012	373,908 MWh
2013	438,007 MWh
2014	505,077 MWh
2015	575,226 MWh

APS

APS stated that its responses are for APS alone, and that the following APS RES target estimates are based on its retail sales estimates:

2007	431 GWh
2008	518 GWh
2009	610 GWh
2010	785 GWh
2011	970 GWh
2012	1,166 GWh
2013	1,373 GWh
2014	1,591 GWh
2015	1,820 GWh
2016	2,250 GWh
2017	2,704 GWh
2018	3,183 GWh
2019	3,688 GWh
2020	4,221 GWh
2021	4,782 GWh
2022	5,373 GWh
2023	5,995 GWh
2024	6,650 GWh
2025	7,339 GWh
2026	7,559 GWh
2027	7,786 GWh
2028	8,020 GWh
2029	8,260 GWh
2030	8,508 GWh

GCSECA

GCSECA stated that the Cooperatives have not estimated or quantified the cost of compliance with sections 1804 and 1805, but that they are currently performing an analysis to determine the amount of RES funds that will be available as well as the RES projects for the future, and that this

information will be reviewed by the Commission as a part of the Cooperatives' revised RES plan that will be filed pursuant to section 1814, 60 days after the effective date of the Proposed RES Rules or by December 31, 2006, whichever occurs first.

WRA

WRA provided a graph attached to its response showing its estimates ranging from 500 GWH in 2006 increasing to 16,000 GWH in 2030, assuming the Cooperatives will meet the same standards as the investor owned utilities.

Staff

Staff stated that the general assumptions behind its estimates are as follows: 1) renewable energy systems installed to meet the RES requirements have a life of 20 years or more; 2) funds used to purchase RES kWh or install renewable systems will be used to pay for the costs in excess of the Market Cost of Comparable Conventional Generation; 3) the remainder of the costs of renewable kWh purchases (equal to the Market Cost of Comparable Conventional Generation) will be paid for with utility power purchase funds, just as the utility currently purchases conventional kWh from gas generators, coal plants, etc. For utility-owned renewable installations, the utility would use shareholder funds to finance the Market Cost of Comparable Conventional Generation portion of total installed cost; 4) Distributed Resources (that do not generate electricity) installed in any year will reduce electricity demand for the next 20 years. (This slows the annual increase in retail electricity demand.); and 4) the estimates reflect the requirements of the Proposed RES Rules, and any changes to the rule wording or assumptions used to reach the estimates may change the estimates.

2006	495,736,174 kWh
2007	612,385,251 kWh
2008	734,889,501 kWh
2009	863,026,199 kWh
2010	1,107,146,105 kWh

2011	1,360,450,062 kWh
2012	1,621,075,108 kWh
2013	1,889,536,262 kWh
2014	2,164,977,742 kWh
2015	2,446,215,426 kWh
2016	2,980,689,035 kWh
2017	3,520,904,148 kWh
2018	4,062,151,299 kWh
2019	4,599,697,812 kWh
2020	5,129,074,477 kWh
2021	5,644,828,561 kWh
2022	6,142,938,497 kWh
2023	6,617,604,174 kWh
2024	7,064,396,810 kWh
2025	7,478,864,025 kWh

Issue: Of the RES-eligible kWh needed to meet the RES, the number of kWhs that will be above the Market Cost of Comparable Conventional Generation

Unisource Energy

Unisource Energy stated that its responses are for TEP only for years 2006 through 2045, rather than through 2030 as requested. Unisource Energy stated that the expected RES programs will result in contracts entered into in 2025 with a term of 20 years and Production Incentive Payment agreements with a term of 20 years entered into in 2025, creating a payment obligation through 2045. Unisource Energy stated that to look at program expenses only through 2030 would not capture the full scope of program revenues which must be reimbursed. However, the table attached to Unisource Energy's response, to which it referred for the answer to this question included only the years 2006 through 2015.

2006	115,150 MWh

2007	141,635 MWh
2008	169,371 MWh
2009	198,406 MWh
2010	254,208 MWh
2011	312,676 MWh
2012	373,908 MWh
2013	438,007 MWh
2014	505,077 MWh
2015	575,226 MWh

APS

APS stated that in the near term, it is likely that most of the RES-eligible kWh acquired to meet the RES targets will come at costs greater than the Market Cost of Comparable Conventional Generation. APS stated that it does not feel that it can reliably predict the availability or costs of renewable power for purchase beyond 2010. APS noted that the relative cost of renewables is highly dependent on natural gas prices, and the Proposed RES Rules introduce several new technologies that, if approved, have the potential to compete favorably with the current Market Cost of Comparable Conventional Generation. APS stated that based on APS' current experience with RES-eligible renewable resources, it appears that select resources available as non-distributed applications have the greatest likelihood of approaching the Market Cost of Comparable Conventional Generation some time in the future.

GCSECA

GCSECA stated that the Cooperatives have not estimated or quantified the cost of compliance with sections 1804 and 1805, but that they are currently performing an analysis to determine the amount of RES funds that will be available as well as the RES projects for the future, and that this information will be reviewed by the Commission as a part of the Cooperatives' revised RES plan that will be filed pursuant to section 1814, 60 days after the effective date of the Proposed RES Rules or

by December 31, 2006, whichever occurs first.

WRA

WRA stated that one of the benefits of the Proposed RES Rules is that the rule better allows the Commission to control rates by controlling costs. WRA stated that it expects that over the next 25 years, wind, some geothermal, and some biomass projects will be less costly than the conventional generation that would be displaced by renewable resources. WRA stated that Navigant Consulting projected that by 2013, most renewable energy technologies are expected to be competitive with grid power without incentives, that wind and geothermal energy are competitive today with existing incentives, and the on-site use of biomass can be competitive with grid power today without incentives (Lisa Frantis, *Overview of Renewable Energy in the United States*, Presentation to the Renewable Energy Finance Forum – Wall Street, June 23, 2004, Navigant Consulting, pp. 7-8). WRA stated that because natural gas prices are highly volatile, there may be some years in which gas fired generation would be cheaper, but considering the general upward trend in gas prices, low cost and stably priced renewable energy such as wind energy will be cheaper in most years.

Staff

Staff stated that this is difficult to know at this time, because it will depend upon the cost of conventional energy resources. Staff stated that if the cost of natural gas stays above $7.00 per million BTU, there may be a number of technologies that will produce kWh at less than the Market Cost of Conventional Generation. Staff stated that if the cost of natural gas reaches the $10-15 per million BTU range again, as it did in late 2005 and early 2006, many, if not most, of the RES kWh could be below the Market Cost of Conventional Generation.

Issue: The projected Market Cost of Comparable Conventional Generation for each year through 2030

Unisource Energy

Unisource Energy stated that its responses are for TEP only for years 2006 through 2045, rather than through 2030 as requested. Unisource Energy provided a response to this question only for 2007, stating that it will be approximately $0.027 per kWh in 2007.

APS

APS stated that the Market Cost of Comparable Conventional Generation is determined by calculating avoided energy costs and avoided capacity costs. APS stated that avoided energy costs are based on the hourly marginal cost of generation, generally from natural gas generating units; and that that avoided capacity costs are estimated based upon the cost of a new simple-cycle gas turbine. APS further stated that calculations of avoided energy costs must be looked at on an hourly basis to capture the variability of the costs. APS stated that on a per unit basis ($/MWh), the total of the avoided energy and avoided capacity costs varies widely for different projects due to the number of MWhs produced and the timing of when the energy is produced, such that using a single number for all projects is overly simplified and misleading.

GCSECA

GCSECA stated that the Cooperatives have not estimated or quantified the cost of compliance with sections 1804 and 1805, but that they are currently performing an analysis to determine the amount of RES funds that will be available as well as the RES projects for the future, and that this information will be reviewed by the Commission as a part of the Cooperatives' revised RES plan that will be filed pursuant to section 1814, 60 days after the effective date of the Proposed RES Rules or by December 31, 2006, whichever occurs first.

WRA

WRA stated that market costs of generation include both energy costs and capacity costs. With regard to energy costs, WRA stated that looking over a 24 year time horizon, it is not possible

to forecast the price of natural gas or even coal with any expectation of reliability, and the track record of public and private sector gas price forecasts is very poor. WRA stated that the cost of obtaining natural gas is high and the timing and magnitude of natural gas price changes in response to demand is uncertain; that coal costs are affected by transportation related costs and differences in sulfur content; and that fossil fueled generation imposes additional energy-related costs associated with the risk of complying with future regulation of greenhouse gas emissions. With regard to capacity costs, WRA stated that conventional power plants are becoming more expensive to build, and consideration of costs should also include transmission and distribution costs. WRA provided an approximation of the current market cost of conventional generation of $0.058 per kWh, assuming gas costs of $7.00 per MMBtu, coal costs of $1.53 per MMBtu, and CO_2 emissions regulation compliance costs of $10 per ton of CO_2 (assuming marginal gas generation emission of an average of 900 pounds of CO_2, marginal coal unit emissions of 2,000 pounds of CO_2 per MWh; an average heat rate of marginal gas fired units of 8,400 Btu/kWh; heat rate of marginal coal units of 10,000 Btu/kWh; and variable O&M costs).

Staff

Staff stated that the Market Cost of Comparable Conventional Generation will vary by hour and will vary depending on the operating schedules of the renewables that will provide the RES kWh. Staff stated that it has developed an average "proxy" for the Market Cost of Comparable Conventional Generation as follows:

2006	$34,891,949
2007	$40,791,391
2008	$46,008,774
2009	$51,138,435
2010	$43,755,777
2011	$55,050,903
2012	$65,997,155

2013	$77,272,523
2014	$96,244,487
2015	$109,040,802
2016	$133,359,351
2017	$170,088,303
2018	$196,609,414
2019	$222,949,193
2020	$248,888,649
2021	$274,160,600
2022	$298,567,986
2023	$321,826,605
2024	$343,719,444
2025	$364,028,337

Issue: Of the kWh required from RES-eligible resources, the number of kWh or equivalent credits Affected Utilities will be required to provide from Distributed Renewable Energy Resources and non-Distributed Renewable Energy Resources

Unisource Energy

Unisource Energy stated that its responses are for TEP only for years 2006 through 2045, rather than through 2030 as requested. Unisource Energy stated that the expected RES programs will result in contracts entered into in 2025 with a term of 20 years and Production Incentive Payment agreements with a term of 20 years entered into in 2025, creating a payment obligation through 2045. Unisource Energy stated that to look at program expenses only through 2030 would not capture the full scope of program revenues which must be reimbursed. However, the table attached to Unisource Energy's response, to which it referred for the answer to this question included only the years 2006 through 2015.

Distributed:

2006	0 kWh
2007	7,082 kWh
2008	16,937 kWh
2009	29,761 kWh
2010	50,842 kWh
2011	78,169 kWh
2012	112,173 kWh
2013	131,402 kWh
2014	151,523 kWh
2015	172,568 kWh

Non-Distributed:

2006	115,150 kWh
2007	134,553 kWh
2008	152,434 kWh
2009	168,645 kWh
2010	203,366 kWh
2011	234,507 kWh
2012	261,735 kWh
2013	306,605 kWh
2014	353,554 kWh
2015	402,658 kWh

APS

APS stated that its responses are for APS alone, and that the following APS RES distributed and non-distributed targets are based on its retail sales estimates:

Distributed:

2007	22 GWh
2008	52 GWh
2009	91 GWh
2010	157 GWh

2011	243 GWh
2012	350 GWh
2013	412 GWh
2014	477 GWh
2015	546 GWh
2016	675 GWh
2017	811 GWh
2018	955 GWh
2019	1,106 GWh
2020	1,266 GWh
2021	1,435 GWh
2022	1,612 GWh
2023	1,799 GWh
2024	1,995 GWh
2025	2,202 GWh
2026	2,268 GWh
2027	2,336 GWh
2028	2,406 GWh
2029	2,478 GWh
2030	2,552 GWh

Non-Distributed:

2007	410 GWh
2008	466 GWh
2009	518 GWh
2010	628 GWh
2011	728 GWh
2012	816 GWh
2013	961 GWh
2014	1,113 GWh
2015	1,274 GWh
2016	1,575 GWh
2017	1,893 GWh
2018	2,228 GWh
2019	2,581 GWh

2020	2,954 GWh
2021	3,347 GWh
2022	3,761 GWh
2023	4,197 GWh
2024	4,655 GWh
2025	5,137 GWh
2026	5,292 GWh
2027	5,450 GWh
2028	5,614 GWh
2029	5,782 GWh
2030	5,956 GWh

GCSECA

GCSECA stated that the Cooperatives have not estimated or quantified the cost of compliance with sections 1804 and 1805, but that they are currently performing an analysis to determine the amount of RES funds that will be available as well as the RES projects for the future, and that this information will be reviewed by the Commission as a part of the Cooperatives' revised RES plan that will be filed pursuant to section 1814, 60 days after the effective date of the Proposed RES Rules or by December 31, 2006, whichever occurs first.

WRA

WRA provided a graph attached to its response showing an increase in Distributed Renewable Energy Resources from 0 GWH in 2006 to 5,000 GWH in 2030, and an increase in non-Distributed Renewable Energy Resources from 500 GWH in 2006 to 16,000 GWH in 2030.

Staff

Distributed:

2006	24,786,809 kWh
2007	61,238,525 kWh

2008	110,233,425 kWh
2009	172,605,240 kWh
2010	276,786,526 kWh
2011	408,135,019 kWh
2012	486,322,533 kWh
2013	566,860,879 kWh
2014	649,493,323 kWh
2015	733,864,628 kWh
2016	894,206,710 kWh
2017	1,056,271,244 kWh
2018	1,218,645,390 kWh
2019	1,379,909,343 kWh
2020	1,538,722,343 kWh
2021	1,693,448,568 kWh
2022	1,842,881,549 kWh
2023	1,985,281,252 kWh
2024	2,119,319,043 kWh
2025	2,243,659,207 kWh

Non-Distributed:

2006	470,949,365 kWh
2007	551,146,726 kWh
2008	624,656,076 kWh
2009	690,420,959 kWh
2010	830,359,579 kWh
2011	952,315,044 kWh
2012	1,134,752,576 kWh
2013	1,322,675,384 kWh
2014	1,515,484,420 kWh
2015	1,712,350,798 kWh
2016	2,086,482,324 kWh
2017	2,464,632,903 kWh
2018	2,843,505,909 kWh
2019	3,219,788,468 kWh
2020	3,590,352,134 kWh

2021	3,951,379,993 kWh
2022	4,300,056,948 kWh
2023	4,632,322,922 kWh
2024	4,945,077,767 kWh
2025	5,235,204,817 kWh

Issue: Of the kWh or equivalent credits that must come from Distributed Renewable Energy Resources, the number that will be produced from each of the technologies allowed under section 1802.B, and the yearly cost of those kWh or credits above the Market Cost of Comparable Conventional Generation through 2030

Unisource Energy

Unisource Energy stated that its responses are for TEP only for years 2006 through 2045, rather than through 2030 as requested. Unisource Energy stated that the expected RES programs will result in contracts entered into in 2025 with a term of 20 years and Production Incentive Payment agreements with a term of 20 years entered into in 2025, creating a payment obligation through 2045. Unisource Energy stated that to look at program expenses only through 2030 would not capture the full scope of program revenues which must be reimbursed. However, Unisource Energy's response to this question referred only to the first 10 years of the RES.

Unisource Energy stated that 60 percent of residential distributed generation energy will be provided by solar electric resources and the remaining 40 percent will be provided by solar hot water heating, solar space heating and wind technologies.

Unisource Energy stated that 25 percent of commercial distributed generation energy will be provided by solar electric generation resources and the other 75 percent will be provided by all other qualified renewable energy options including daylighting, solar hot water heating, solar space heating, biomass heating, biomass electricity production and wind technologies.

Unisource Energy responded that in the first 10 years of the RES, the Distributed Generation programs are expected to require around 80 percent of the total RES funding, or around $30 million.

APS

APS stated that in the near term, it anticipates a high percentage of the kWh will be from photovoltaic ("PV") installations, and that to date, about 80 percent of the energy from APS' Credit Purchase Program installations has been from PV systems, with the remaining 20 percent of equivalent kWh from domestic hot water systems. APS stated that if PV continues to play a significant role in the Distributed Renewable Energy Requirement, APS generally estimates cost of compliance to average between $50 million and $60 million per year through 2015 for the entire distributed renewable energy requirement (both residential and non-residential). APS further stated that it is hopeful that several new cost-competitive technologies will become available to meet the Distributed Renewable Energy Requirement through the Uniform Credit Purchase Program, but that it does not yet know how cost effective or successful such alternatives will be for APS customers.

GCSECA

GCSECA stated that the Cooperatives have not estimated or quantified the cost of compliance with sections 1804 and 1805, but that they are currently performing an analysis to determine the amount of RES funds that will be available as well as the RES projects for the future, and that this information will be reviewed by the Commission as a part of the Cooperatives' revised RES plan that will be filed pursuant to section 1814, 60 days after the effective date of the Proposed RES Rules or by December 31, 2006, whichever occurs first.

WRA

WRA stated that it expects photovoltaics to be an important resource as the technology can be widely deployed and make use of readily available sunshine; that it expects distributed biomass and biogas projects to be widely deployed because the technology is readily available and can be installed

at a variety of non-residential establishments; that geothermal resources used for heat have a large potential for agriculture in Arizona; non-residential solar daylighting may also play an important role; and solar hot water for residential and non-residential applications is also likely to be a major component of distributed resources. WRA stated that the cost to ratepayers of distributed generation would be the value of subsidies provided to encourage project installation (over and above the Market Cost of Comparable Conventional Generation). WRA stated that the values of the subsidies have not yet been determined via the Uniform Credit Purchase Program, and that the WRA expects that the incentives would vary by technology type and would change over time to reflect changing market conditions.

Staff

Staff estimated the mixture of technologies from Distributed Renewable Energy Resources as follows: 60 percent of residential Distributed Renewable Energy Resources is generation and 40 percent is non-generation. Of residential generation, 90 percent is PV, 5 percent is wind, and 5 percent is other. Of residential non-generation, 85 percent is solar water heating, 5 percent is solar space heating, and 10 percent is other. 50 percent of non-residential Distributed Renewable Energy Resources is generation and 50 percent is non-generation. Of non-residential generation, 60 percent is PV, 25 percent is biomass and biogas, 5 percent is wind, 5 percent is hydro, and 5 percent is renewable fuel cell. Of non-residential non-generation, 60 percent is solar water heating, 20 percent is industrial solar process heat, 10 percent is solar daylighting, and 10 percent is solar space heating and other. Up to 20 percent of the non-residential may be third-party (non-utility) distributed generation for sale at wholesale (maximum 3 percent of RES). In the early years of the RES, 3 percent will be third-party Distributed Generation, and will decline as a percentage over time.

Staff estimated the yearly costs of Distributed Renewable Energy Resources above the Market Cost of Comparable Conventional Generation through 2025 as follows:

2006	$16,737,760
2007	$29,411,959
2008	$35,265,883
2009	$39,935,070
2010	$64,163,831
2011	$66,454,459
2012	$27,551,079
2013	$27,138,605
2014	$28,004,582
2015	$28,096,700
2016	$61,246,591
2017	$60,384,987
2018	$59,022,764
2019	$56,224,789
2020	$54,806,917
2021	$50,902,448
2022	$49,337,911
2023	$46,830,192
2024	$44,224,452
2025	$41,250,042

Issue: Of the kWh that must come from non-Distributed Renewable Energy Resources, the number that will be produced from each of the technologies allowed under section 1802.A, *and the yearly cost of those* kWh above the Market Cost of Comparable Conventional Generation through 2030

Unisource Energy

Unisource Energy stated that its responses are for TEP only for years 2006 through 2045, rather than through 2030 as requested. Unisource Energy stated that the expected RES programs will result in contracts entered into in 2025 with a term of 20 years and Production Incentive Payment agreements with a term of 20 years entered into in 2025, creating a payment obligation through 2045. Unisource Energy stated that to look at program expenses only through 2030 would not capture the full scope of program revenues which must be reimbursed.

Unisource Energy stated that in the first 10 years of the RES, the Non-Distributed Generation programs are expected to require around 20 percent of the total RES funding, or around $85 million. Unisource Energy also stated that the delivered above market cost of avoided conventional generation is assumed to be $.05 in 2006 and 2007, reducing by $0.005 per kWh every two years to $0.04 per kWh in 2010 and 2011. Unisource Energy stated that in and after 2012, it is assumed transmission will be needed for additional Non-Distributed renewable generation, expected at that time to be nearly 100 percent incremental wind generation at an assumed delivered above market cost of avoided conventional generation in 2012 and 2013 of $0.07 per kWh. Unisource Energy stated that it is assumed the renewable energy developer will incur the cost of new transmission and pass that cost through in the Purchased Power Agreement price, which is assumed to be reduced by $0.005 per kWh every two years to $0.00 per kWh in 2040 and future years. Unisource Energy stated that twenty year term PPAs will be developed in the years of the RES through 2025 which will require payments in years through 2044. Unisource Energy stated that its price estimates are based on renewable energy bids received in 2005 and past discussions with renewable energy developers, and that the over-time reduction in the above-market cost of these renewable energy PPAs is not based on reduced cost of renewable generation sources, but on assumed fuel cost of conventional generation cost inflation of over 10 percent per year on average, given the current mix of TEP generation fuel sources, and that if fuel cost inflation is below that level, revenue requirements to be recovered through the Tariff will be higher.

APS

APS stated that it believes the market for non-distributed renewable energy in Arizona and surrounding states is in its early stages of development and that it therefore is difficult to predict the percentage of each technology that will participate in the RES much beyond 2010. APS stated that

based on its recent procurement activities, APS expects both geothermal and wind technologies to play a significant role in the early years and biomass, biogas and solar to play less significant roles. APS stated that competition from utilities in both Arizona and surrounding states will also impact the technologies that ultimately are incorporated into the RES. APS stated that through 2010, APS predicts that geothermal and wind technologies collectively will produce around 80 percent of the total RES-eligible non-distributed kWhs, biomass and biogas will collectively produce around 15 percent, and solar will produce less than 5 percent. APS further stated that the premium for each of these technologies is subject to many variables beyond the early years, but in the early years APS anticipates wind, geothermal, biogas and biomass to be between $10/MWh and $30/MWh above the Market Cost of Comparable Conventional Generation, and solar to be more than $100/MWh above the Market Cost of Comparable Conventional Generation. APS stated that it estimates the cost of compliance with the non-distributed portion of the RES to be between approximately $10 million and $15 million through 2010.

GCSECA

GCSECA stated that the Cooperatives have not estimated or quantified the cost of compliance with sections 1804 and 1805, but that they are currently performing an analysis to determine the amount of RES funds that will be available as well as the RES projects for the future, and that this information will be reviewed by the Commission as a part of the Cooperatives' revised RES plan that will be filed pursuant to section 1814, 60 days after the effective date of the Proposed RES Rules or by December 31, 2006, whichever occurs first.

WRA

WRA stated that one of the benefits of the Proposed RES Rules is that the rule better allows the Commission to control rates by controlling costs. WRA stated that it expects that over the next

25 years, wind, some geothermal, and some biomass projects will be less costly than the conventional generation that would be displaced by renewable resources. WRA stated that Navigant Consulting projected that by 2013, most renewable energy technologies are expected to be competitive with grid power without incentives, that wind and geothermal energy are competitive today with existing incentives, and the on-site use of biomass can be competitive with grid power today without incentives (Lisa Frantis, *Overview of Renewable Energy in the United States*, Presentation to the Renewable Energy Finance Forum – Wall Street, June 23, 2004, Navigant Consulting, pp. 7-8). WRA stated that because natural gas prices are highly volatile, there may be some years in which gas fired generation would be cheaper, but considering the general upward trend in gas prices, low cost and stably priced renewable energy such as wind energy will be cheaper in most years.

Staff

Staff estimated the yearly costs of non-Distributed Renewable Energy Resources above the Market Cost of Comparable Conventional Generation through 2025 as follows:

2006	$13,084,481
2007	$14,974,055
2008	$13,565,690
2009	$15,079,282
2010	$17,502,311
2011	$15,597,756
2012	$17,599,241
2013	$20,606,006
2014	$14,806,844
2015	$16,775,508
2016	$18,465,141
2017	$9,719,332

2018	$11,234,824
2019	$12,739,954
2020	$14,222,209
2021	$15,666,320
2022	$17,061,028
2023	$18,390,092
2024	$19,641,111
2025	$20,801,619

Issue: The projected cost of the infrastructure needed to supply the renewable energy required to meet the RES for each year through 2030

Unisource Energy

Unisource Energy stated that its responses are for TEP only for years 2006 through 2045, rather than through 2030 as requested. Unisource Energy stated that the expected RES programs will result in contracts entered into in 2025 with a term of 20 years and Production Incentive Payment agreements with a term of 20 years entered into in 2025, creating a payment obligation through 2045. Unisource Energy stated that to look at program expenses only through 2030 would not capture the full scope of program revenues which must be reimbursed. However, Unisource Energy's response is only for the years 2006 through 2015.

Unisource Energy stated that the assumptions used for the RES program costs assume that TEP will not build any renewable energy generation, and that the total cost of the RES program is as listed in prior responses, $435 million, with the exception of amounts paid by customers for distributed renewable energy resource development. Unisource Energy stated that although difficult to approximate, TEP estimates with a very low level of confidence that if 50 percent of the distributed generation equipment costs were to be paid by customers, the amount would be around $80 million for the period of 2006 through 2015.

APS

APS stated that with respect to the necessary infrastructure, APS believes that expansion of transmission resources represents the most significant cost, and that expansion of transmission will likely be required for all renewable energy projects required to meet the RES. APS stated, however, that because only a limited number of RES-eligible projects have been identified and project specifics are necessary to evaluate transmission costs, APS has not planned transmission projects specifically to address the need, and does not believe it is possible to evaluate the costs of addressing transmission expansion necessary to meet the RES at this early stage.

GCSECA

GCSECA stated that the Cooperatives have not estimated or quantified the cost of compliance with sections 1804 and 1805, but that they are currently performing an analysis to determine the amount of RES funds that will be available as well as the RES projects for the future, and that this information will be reviewed by the Commission as a part of the Cooperatives' revised RES plan that will be filed pursuant to section 1814, 60 days after the effective date of the Proposed RES Rules or by December 31, 2006, whichever occurs first.

WRA

WRA stated that distributed resources will decrease the need for transmission and distribution investments, and that non-distributed resources, over the long run, are likely to require transmission upgrades, but so will conventional alternatives, as Arizona is facing a growing demand for electricity. WRA stated that based on information available from APS, a single circuit 200 mile transmission line would cost roughly between $260 million and $440 million excluding line siting and right-of-way acquisition costs, and that a substation would cost roughly between $3.4 million and $8.8 million, excluding siting and land cost; and that whether transmission costs are higher or lower for a portfolio including renewable energy relative to a portfolio without renewable energy depends on specific

resource plans. WRA stated that based on National Renewable Energy Laboratory's ("NREL") review of studies of several utilities, the costs of wind integration to maintain system reliability are small, ranging from about $1.47 to $5.50 per MWh, taking into account unit commitment, load following, and regulation on systems with up to 20 percent of generation capacity in wind resources.

Staff

Staff stated that this is unknown, and will depend upon the mixture and location of new RES resources. Staff stated that if a majority of the resources are distributed within the various utility distribution systems, the cost will be minimal. Staff stated that because the Arizona electricity load is growing by 3 percent annually, there will be a substantial infrastructure cost to meet customer needs, but that since the annual RES requirement under the Proposed RES Rules never increases by more than 1 percent each year, the infrastructure needs for the RES resources will be no more than one third of the total new infrastructure costs and could be less if Distributed Resources become a large part of the portfolio. Staff stated that this means that two thirds or more of new infrastructure costs will be for new conventional (non-renewable) resources.

Issue: The Affected Utilities' total cost to comply with the RES, whether the revenue produced by implementing the Sample Tariff will be sufficient for compliance, and if not, what the yearly cost per kWh will be to the ratepayer

Unisource Energy

Unisource Energy stated that its responses are for TEP only for years 2006 through 2045, rather than through 2030 as requested. Unisource Energy stated that the expected RES programs will result in contracts entered into in 2025 with a term of 20 years and Production Incentive Payment agreements with a term of 20 years entered into in 2025, creating a payment obligation through 2045. Unisource Energy stated that to look at program expenses only through 2030 would not capture the full scope of program revenues which must be reimbursed.

Unisource Energy stated that the range of possible programs to meet RES annual renewable

energy requirements evaluated by TEP result in total program costs through 2045 between $4.5 billion and $7.0 billion. Unisource Energy stated that the Sample Tariff would not provide sufficient funding to meet the RES requirements in any year after 2006 under any sets of assumptions that were analyzed. Unisource Energy stated that the Sample Tariff is expected to generate about $9.1 million in 2006 and increase at a rate of about 2.5 percent per year. Unisource Energy estimated that the RES program would require about $33 million per year to operate if a 5-year levelized Tariff were proposed in 2006 through 2010 and about $54 million per year if a 5-year levelized Tariff were proposed in 2011 through 2015.

APS

APS stated that it believes the revenue provided by the Sample Tariff will not be sufficient to fully support the RES except in the very near term, and that the funding necessary to support the Distributed Renewable Energy Requirement alone will likely exceed the Sample Tariff revenues after 2007. APS stated that if current technologies continue to play a significant role in meeting the Distributed Renewable Energy Requirement, APS generally estimates cost of compliance to average between $50 million and $60 million per year through 2015 for the entire distributed renewable energy requirement (both residential and non-residential). APS stated that it also estimates the cost of compliance with the non-distributed portion of the RES to be between approximately $10 million and $15 million through 2010, and that through 2010, the revenues generated by the Sample Tariff would average about $37 million. APS stated that although 2007 will be lower, it estimates the total cost of compliance with the RES to average between about $60 million and $75 million per year through 2010, and that through 2010, the revenues generated by the Sample Tariff would average about $37 million.

GCSECA

GCSECA stated that the Cooperatives have not estimated or quantified the cost of compliance with sections 1804 and 1805, but that they are currently performing an analysis to determine the amount of RES funds that will be available as well as the RES projects for the future, and that this information will be reviewed by the Commission as a part of the Cooperatives' revised RES plan that will be filed pursuant to section 1814, 60 days after the effective date of the Proposed RES Rules or by December 31, 2006, whichever occurs first. GSECA stated that based on the Cooperatives' 2005 RES annual report, they believe the RES surcharge will be inadequate for them to meet the requirements of sections 1804 and 1805.

WRA

WRA stated that it expects many non-distributed renewable energy projects to cost less than the conventional generation they replace over the long run, in which case the total long run cost to comply with the RES for those resources is negative, relative to continued reliance on gas and coal-fired generation at the margin, and the Commission can thus use the RES to control utility costs and rates.

Staff

Staff estimated the yearly compliance costs through the year 2025 as follows:

2006	$29,822,241
2007	$44,386,014
2008	$48,832,573
2009	$55,014,352
2010	$81,665,141
2011	$82,052,215
2012	$45,150,320
2013	$47,744,611
2014	$42,811,427
2015	$44,872,208
2016	$79,711,732

2017	$70,104,319
2018	$70,257,587
2019	$68,964,743
2020	$69,029,125
2021	$66,568,768
2022	$66,398,939
2023	$65,220,284
2024	$63,865,563
2025	$62,051,662

Staff stated that its estimates of the surcharge revenues under the Sample Tariff indicate that the proposed surcharge levels should be sufficient for compliance for at least the first three or four years of the program, and that the annual compliance reports that will be filed in 2007 and 2008 will give an indication whether the surcharge is sufficient for future years.

Issue: Under current State and Federal law, and including the Proposed RES Rules, the percentage of the cost of RES-eligible kWh or equivalent credits would be subsidized with public money

Unisource Energy

Unisource Energy stated that this is difficult to evaluate as the tax rules and other incentives/subsidies are changing annually, but that assuming all current Federal and State renewable energy tax incentive programs remain in their current forms through 2015, and only addressing through 2015, Unisource Energy estimated that on average, 20 percent of non-distributed renewable energy cost would be provided by Federal tax incentives; 40 percent of non-distributed renewable energy cost would be provided by RES funds; 15 percent of distributed renewable energy cost would be provided by Federal tax incentives; and 50 percent of distributed renewable energy cost would be provided by RES funds.

APS

APS stated that Federal and State incentives historically have varied by both the duration of the incentive's availability and by the amount of incentive offered, and that it is reasonable to expect the amount and structure of present incentives to change over the next 25 years. APS further stated that many of the incentives vary by the technologies to which they can be applied, and that APS does not believe it is possible to quantify the amount of public incentives used to meet the costs of the Proposed RES Rules over the next 25 years. APS attached an exhibit to its response titled "Select Commonly Referenced Federal Renewable Energy Incentives" which listed and provided a description for the following Federal incentives: Modified Accelerated Cost-Recovery System, Business Energy Tax Credit, Renewable Energy Production Tax Credit, USDA Renewable Energy Systems and Energy Efficiency Improvements Program, Renewable Energy Production Incentive, and Residential Solar and Fuel Cell Tax Credit.

GCSECA

GCSECA stated that the Cooperatives have not estimated or quantified the cost of compliance with sections 1804 and 1805, but that they are currently performing an analysis to determine the amount of RES funds that will be available as well as the RES projects for the future, and that this information will be reviewed by the Commission as a part of the Cooperatives' revised RES plan that will be filed pursuant to section 1814, 60 days after the effective date of the Proposed RES Rules or by December 31, 2006, whichever occurs first.

WRA

WRA stated that Navigant Consulting identified various Federal and State incentives and

estimate the effect of these incentives on wind projects to reduce the price by roughly 30 to 40 percent (Lisa Frantis, *Overview of Renewable Energy in the United States*, Presentation to the Renewable Energy Finance Forum – Wall Street, June 23, 2004, Navigant Consulting, pp. 5, 7). WRA stated that on the other side, there are numerous subsidies to conventional generation such as various tax credits, property taxes which favor technologies with low capital costs (such as natural gas generation), protection against liability associated with nuclear power generation, and the ability to emit pollutants and greenhouse gases into the atmosphere burdening others with the environmental costs of conventional generation.

Staff

Staff stated that this is unknown, and that since Federal and State incentives often vary by technology, the answer will depend upon which technologies the customers and utilities select. Staff stated that it will also depend upon how State and Federal incentives change over the next 25 years.

Issue: The methodology that will be used to determine the Market Cost of Comparable Conventional Generation, including the specific method that will be used to calculate avoided costs

Unisource Energy

Unisource Energy stated that the great bulk of the RES program expenses are expected to be from procurement of renewable energy generation sources, both customer-sited distributed generation and remote utility scale sources through Purchased Power Agreements, and that there may be some internal renewable generation production sources built if the cost of purchased renewable energy is higher than self-built options. Unisource Energy stated that the recovery of all those expenses through the Tariff revenues will, to a very large degree, be affected by the methodology used to derive the Market Cost of Comparable Conventional Generation figure, expected to be an annual number. TEP stated that it proposes to define that methodology for Purchased Power or for internally owned renewable generation resources, and stated that it may also be used as a comparison point for

customer-sited distributed renewable generation resource recovery. Unisource Energy's proposed method assumes that an annual revenue requirement will be built up as an annual sum from a series of 8,760 (8,784 in a leap year) hourly figures comparing actual renewable generation resource costs for each renewable energy resource purchased or self produced in each hour of the year against the Market Cost of Comparable Conventional Generation in those same hours. Unisource Energy stated that the comparable hourly Market Cost of Comparable Conventional Generation will be different for different renewable sources, taking into account the firmness of the renewable generation resource, the curtailability of the renewable generation resource and whether native load requirements were met by internally owned or contracted generation resources or if market purchases were required to meet native load requirements. Unisource Energy provided a proposed evaluation matrix of Market Cost of Comparable Conventional Generation as an exhibit to its response, and stated that this method of cost determination is very data intensive and will require that automated hourly and rollup calculation procedures be built into the existing energy management system/energy accounting system.

APS

APS stated that avoided costs consist of the sum of avoided energy costs and avoided capacity costs. APS stated that the avoided energy cost is calculated through the use of production cost modeling, with the resultant avoided hourly energy costs divided into monthly on-peak/off-peak values ($/MWh), which are multiplied by the renewable resource generation profile (MWh) to determine the total avoided energy costs ($). APS stated that the APS avoided capacity cost ($kW-yr) is based on the long-run marginal cost of new gas-fired combustion turbines, which is multiplied by a capacity value attributable to the renewable resource which is based on the probability that the generator will be available at the time to the APS system peak load. APS provided the following capacity values for different central station generation applications: wind (25-40 percent); solar (60-

70 percent); biomass/biogas (100 percent); geothermal (100 percent); and small hydropower (100 percent).

GCSECA

GCSECA stated that the Cooperatives have not performed an analysis to determine the Market Cost of Comparable Conventional Generation including the specific method that will be used to calculate avoided costs.

WRA

WRA stated that in general, the Market Cost of Comparable Conventional Generation is determined from running a production cost model of the utility assuming the conventional resources are used to meet demand and taking into account uncertainties using, for example, decision analysis techniques. WRA stated that the Market Cost of Comparable Conventional Generation which can be avoided by utilizing renewable energy will be the variable cost of the most expensive conventional resource that would otherwise be running in each hour of the year when renewable energy is generated, plus capacity costs which are discussed below. WRA stated that the specific steps a utility or Staff might take are as follows:

1. Characterize the renewable resource kW output by hour of the day, month or season. A solar facility would typically generate most power during the middle of the day. Wind resources would generate electricity based upon the wind regime where the facility is located. Geothermal and biomass resources may generate constant kW over time.

2. Include the renewable resource or resource mix in the production cost model as "must run" units at their contract (or self-build) costs per kWh. It may be more accurate to break renewable resources into sub-resources to reflect such features as no solar generation at night, or wind generation at less than full output as well as at full output. Also, one should include in the production cost model forced outage rates to reflect typical capacity factors of various types of resources. To capture the effect of potential CO_2 emission regulations, one could include cost adders reflecting a

range of compliance costs for those technologies which emit CO_2. The effects of other emission regulations would likely be included in operating costs.

3. Run the production cost model with and without the renewable resources. The cost of the most expensive unit in each hour in the analysis without renewable resources is the market cost of conventional generation in that hour (energy only – capacity cost is discussed below). In the model run with renewable resources, the renewable resources will displace conventional resources that would otherwise have been run. The annual difference in cost between the two computations provides an estimate of the incremental cost of the renewable energy relative to the Market Cost of Comparable Conventional Generation (except for capacity costs as described below). The cost difference could be positive or negative. To capture uncertainties in future fossil fuel prices and other variables, one could analyze a range of cost levels and incorporate probabilities of various events occurring using decision analysis.

4. For capacity costs, one could use the production cost model to set the same level of reliability (as measured by loss of load probability or energy not served) with and without the renewable resources by adding conventional generating capacity in the renewable resource case. The additional capacity needed (if any) to maintain a given level of reliability could be priced at the annualized cost of a new combustion turbine ($/kW/year). Transmission and distribution costs would be added or subtracted under the various scenarios to reflect differences in facility needs as explained in response to question B.8.

Staff

Staff stated that the methodology will be selected and implemented by each utility.

Issue: Along with its reply comments on the Proposed RES Rules, Unisource Energy filed a reply to the response filed by Staff to Commissioner Gleason's April 7, 2006 letter. This reply is summarized here.

Unisource Energy's Reply to Staff's Response to Commissioner Gleason's April 7, 2006 letter

Unisource Energy stated that some of Staff's starting point assumptions are not realistic, including its Market Cost of Comparable Conventional Generation proxy of $0.05 per kWh,

increasing to $0.07 per kWh in 2016 and remaining at that level through 2025. Unisource Energy states that TEP's forecast 2007 Market Cost of Comparable Conventional Generation was $0.027 per kWh, and application of Unisource Energy's cost model assumptions to the Staff forecast would result in a significant increase in the total projected RES program costs. Unisource Energy stated that it believes Staff's wind assumptions are too optimistic, and that its solar assumptions cover only 56 percent of Unisource Energy's likely need for solar resources to meet residential and non-residential Distributed Renewable Energy Requirements. Unisource Energy stated that planning capacity evaluation of representative Arizona solar and wind resources applied to TEP's native load profiles has shown there to be zero planning capacity from solar and wind resources, and there will be very little reduction in future requirements for conventional generation resources from implementation of the RES and no consequent RES program cost reductions. Unisource Energy also stated that the Staff forecast does not capture those cost commitments incurred prior to 2026 in performance based incentives and long term purchased power agreements with payments required after 2025, which can represent more than half of the total RES program costs.

APPENDIX C

ECONOMIC, SMALL BUSINESS, AND CONSUMER IMPACT STATEMENT

A. Economic, small business, and consumer impact summary.

1. Proposed rulemaking.

Proposed permanent rules R14-2-1801 through -1815 require gradual increases in the amount of electricity that is produced from renewable technologies. Under the proposed requirements, each Arizona public service corporation will be required to provide a certain percentage of its retail kWh from renewable resources, beginning with 1.25 percent in 2006 and gradually increasing to 15 percent after 2024. The proposed rules will increase the standards established in A.A.C. R14-2-1601 and -1618.

2. Brief summary of the economic impact statement.

The public at large would benefit from a renewable energy standard that requires a larger portion of the electricity sold in Arizona to be produced from renewable energy resources. Producing electricity from renewable energy resources has fewer adverse impacts on air, land, and water than producing electricity from conventional energy sources. In addition, most renewable resources rely on either free energy (such as the sun, wind and geothermal heat) or very low-cost energy (such as landfill gas and biomass) which are available locally in Arizona and are not subject to supply disruptions, manipulation of market prices, or wild unanticipated fluctuations in price. These features contribute to the reliability of the energy supply that Arizonans will depend upon to meet future energy needs.

With a major emphasis in the proposed Renewable Energy Standard and Tariff Rules on Distributed Resources, the reliability of service to areas with Distributed Resources will increase. Similarly, an increased reliance on local free energy resources will avoid the negative impacts of energy cost run-ups as were experienced in 2005 due to the impacts of Katrina and other hurricanes. The effect of including renewable resources in utilities' portfolios will contribute to the provision of reasonable rates over the long run, avoiding energy price fluctuations that can damage the Arizona economy.

The exact costs to Affected Utilities to meet the requirements of the proposed rules will vary over time. The factors that will impact these costs include the annual step increases in renewable kWh requirements, the types and costs of the various technologies that are used to meet the rules' requirements, the level of up-front incentives versus performance-based incentives that are requested and/or provided, the changes in the costs of conventional energy resources, and the market penetration of the eligible renewable energy resources.

Affected Utilities will be required, as stated in proposed R14-2-1808, to file a tariff that "proposes methods for recovering the reasonable and prudent costs of

complying with these rules." Affected Utilities will therefore submit tariffs that are designed to recover the costs of complying with the requirements of the proposed rules.

The cost to consumers will also vary over time and will directly follow the costs to the Affected Utilities. Although Staff cannot predict the exact costs that consumers will experience, Staff has developed a sample tariff based on likely costs of compliance in the years 2006-2008. The sample tariff is an attempt to approximate the costs that consumers will experience in roughly 2006-08. The costs to consumers suggested by the sample tariff are $0.004988 per kWh of retail electricity used by the consumer with caps of $1.05 per service per month for residential customers, $39.00 per service per month for non-residential consumers whose demand is less than 3,000 kW per month, and $117.00 per service per month for non-residential consumers whose demand is 3,000 kW or more per month.

In 2006 and 2007, depending upon the approval date for each Affected Utility's tariff, the cost to consumers is likely to be similar to the rates shown in the sample tariff, which is included as Appendix A to the proposed rules. After 2007, costs to consumers are likely to increase. The magnitude of the resulting increases will depend upon a variety of factors, such as:

- How well Affected Utilities are able to meet their Renewable Energy Standard requirements with the least-cost renewable energy resources.
- How much of a renewable energy base Affected Utilities were able to acquire during the years of the Environmental Portfolio Standard (2001-2006).
- How much of a market share the various renewable technologies are able to capture in the renewable energy marketplace.
- The change in prices, over the years, in the costs to purchase and install renewable energy systems.
- The changes in the costs of conventional energy over the upcoming years.

Adoption of the proposed rules would increase the portion of electricity sold in Arizona that is produced from renewable resources.

3. Name and address of agency employees to contact regarding this statement.

Ray T. Williamson, Utilities Engineer, or Janet Wagner, Senior Staff Counsel, at the Arizona Corporation Commission, 1200 West Washington, Phoenix, Arizona 85007.

B. Economic, small business, and consumer impact statement.

1. Identification of the proposed rulemaking.

The proposed rules will be a new section under Title 14, Chapter 2—Corporation Commission Fixed Utilities. Proposed permanent rules R14-2-1801 through -1815 require gradual increases in the amount of electricity that is produced from renewable technologies. Under the proposed requirements, each Arizona public service corporation will be required to provide a certain percentage of its retail kWh from renewable resources, beginning with 1.25 percent in 2006 and gradually increasing to 15 percent after 2024. The proposed rules will increase the standards established in A.A.C. R14-2-1601 and -1618.

2. Persons who will be directly affected by, bear the costs of, or directly benefit from the proposed rulemaking.

a. the public at large
b. consumers of electric service in Arizona
c. electric public service corporations
d. Arizona Corporation Commission
e. manufacturers and installers of renewable electric power plants in Arizona
f. manufacturers and distributors of solar water heaters, solar air conditioning systems, and other renewable energy systems
g. employees of manufacturers and installers of renewable electric power plants in Arizona
h. employees of manufacturers and distributors of solar water heaters, solar air conditioning systems, and other renewable energy systems
i. public entities, such as schools, cities, counties, or state agencies.

3. Cost-benefit analysis.

a. Probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the proposed rulemaking.

To the extent that the implementing agency and other agencies are customers of Affected Utilities, probable costs would include additional rates paid to Affected Utilities pursuant to tariffs filed pursuant to proposed rule R14-2-1808.

Probable costs to the Commission of the proposed rules would also include the costs associated with reviewing reports, establishing working groups pursuant to proposed R14-2-1810 and -1811, processing proposed tariffs pursuant to proposed R14-2-1808 and -1813, processing plans filed pursuant to proposed R14-2-1813 and -1814, and general overview and enforcement of the rules as a whole.

b. Probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the proposed rulemaking.

To the extent that political subdivisions are customers of Affected Utilities, probable costs would include additional rates paid to Affected Utilities pursuant to tariffs filed pursuant to proposed rule R14-2-1808.

Local governments may benefit from increased property tax revenues resulting from renewable power plants being installed in Arizona. Local governments may also benefit from an increase in employment in the renewable energy industry.

c. Probable costs and benefits to businesses directly affected by the proposed rulemaking, including any anticipated effect on the revenues or payroll expenditure of employers who are subject to the proposed rulemaking.

A cost to an Affected Utility would be any costs of complying with the rules that are not recovered through the Affected Utility's rates to customers. Other costs may include penalties that may be imposed for failing to comply with the proposed rules. The anticipated effect on revenues or payroll expenditures of Affected Utilities would likely be minimal.

To the extent that businesses are customers of Affected Utilities, probable costs would include additional rates paid to Affected Utilities pursuant to tariffs filed pursuant to proposed rule R14-2-1808.

4. Probable impact on private and public employment in businesses, agencies, and political subdivisions of this state directly affected by the proposed rulemaking.

Manufacturers and installers of renewable electric power plants and other renewable energy systems in Arizona may hire additional employees. Manufacturers and distributors of solar water heaters, solar air conditioning systems, and other renewable energy systems may also hire additional employees. The impact on public employment would be minimal.

5. Probable impact of the proposed rulemaking on small businesses.

a. Identification of the small businesses subject to the proposed rulemaking.

Businesses that are subject to the proposed rules are "Affected Utilities," which are public service corporations that serve retail electric load in Arizona, but excluding any utility distribution company with more than half of its customers located outside of Arizona. Some of these businesses are small, but some are large regional businesses.

b. Administrative and other costs required for compliance with the proposed rulemaking.

A cost to small Affected Utilities would be any costs of complying with the rules that are not recovered through the Affected Utility's rates to customers. Other costs may include penalties that may be imposed for failing to comply with the proposed rules.

As for other small businesses that are not Affected Utilities but that are customers of Affected Utilities, probable costs would include additional rates paid to Affected Utilities pursuant to tariffs filed pursuant to proposed rule R14-2-1808.

c. A description of the methods that the agency may use to reduce the impact on small businesses.

The Commission could consider specific rate designs for small businesses when setting rates pursuant to proposed R14-2-1808.

d. Probable cost and benefit to private persons and consumers who are directly affected by the proposed rules.

The public at large would benefit from a renewable energy standard that requires a larger portion of the electricity sold in Arizona to be produced from renewable energy resources. Producing electricity from renewable energy resources has fewer adverse impacts on air, land, and water than producing electricity from conventional energy sources. In addition, most renewable resources rely on either free energy (such as the sun, wind and geothermal heat) or very low-cost energy (such as landfill gas and biomass) which are available locally in Arizona and are not subject to supply disruptions, manipulation of market prices, or wild unanticipated fluctuations in price. These features contribute to the reliability of the energy supply that Arizonans will depend upon to meet future energy needs.

With a major emphasis in the proposed Renewable Energy Standard and Tariff Rules on Distributed Resources, the reliability of service to areas with Distributed Resources will increase. Similarly, an increased reliance on local free energy resources will avoid the negative impacts of energy cost run-ups as were experienced in 2005 due to the impacts of Katrina and other hurricanes. The effect of including renewable resources in utilities' portfolios will contribute to the provision of reasonable rates over the long run, avoiding energy price fluctuations that can damage the Arizona economy.

The exact costs to Affected Utilities to meet the requirements of the proposed rules will vary over time. The factors that will impact these costs include the annual step increases in renewable kWh requirements, the types and costs of the various technologies that are used to meet the rules' requirements, the level of up-front incentives versus performance-based incentives that are requested and/or provided, the changes in the costs

of conventional energy resources, and the market penetration of the eligible renewable energy resources.

Affected Utilities will be required, as stated in proposed R14-2-1808, to file a tariff that "proposes methods for recovering the reasonable and prudent costs of complying with these rules." Affected Utilities will therefore submit tariffs that are designed to allow them to recover the costs of complying with the requirements of the proposed rules.

The cost to consumers will also vary over time and will directly follow the costs to the Affected Utilities. Although Staff cannot predict the exact costs that consumers will experience, Staff has developed a sample tariff based on likely costs of compliance in the years 2006-2008. The sample tariff is an attempt to approximate the costs that consumers will experience in roughly 2006-08. The costs to consumers suggested by the sample tariff are $0.004988 per kWh of retail electricity used by the consumer with caps of $1.05 per service per month for residential customers, $39.00 per service per month for non-residential consumers whose demand is less than 3,000 kW per month, and $117.00 per service per month for non-residential consumers whose demand is 3,000 kW or more per month.

In 2006 and 2007, depending upon the approval date for each Affected Utility's tariff, the cost to consumers is likely to be similar to the rates shown in the sample tariff, which is included as Appendix A to the proposed rules. After 2007, costs to consumers are likely to increase. The magnitude of the resulting increases will depend upon a variety of factors, such as:

- How well Affected Utilities are able to meet their Renewable Energy Standard requirements with the least-cost renewable energy resources.
- How much of a renewable energy base Affected Utilities were able to acquire during the years of the Environmental Portfolio Standard (2001-2006).
- How much of a market share the various renewable technologies are able to capture in the renewable energy marketplace.
- The change in prices, over the years, in the costs to purchase and install renewable energy systems.
- The changes in the costs of conventional energy over the upcoming years.

Based on reported results from the Environmental Portfolio Standard ("EPS") from 2001-2005 and reasonable assumptions about how the renewable energy marketplace will respond to the proposed rules, Commission staff has developed estimates of the costs to consumers after 2007. These costs will vary for each utility.

Some utilities performed well under the 2001-2005 EPS requirements and have built a base of renewable resources that will provide the foundation for meeting the requirements of the proposed rules. Others, by contrast, struggled to meet the 2001-2005 EPS requirements. The utilities that struggled with EPS compliance will probably find it more difficult to meet the requirements of the proposed rules. However, for both sets of utilities—those that performed well under the EPS requirements and those that failed to perform well—the rates set forth in the sample tariff will approximate the rates necessary in order to cover the costs of compliance with the proposed rules until approximately 2008. Thereafter, there may be substantial differences in compliance costs, depending upon how each Affected Utility proposes to meet its renewable requirements.

For utilities that performed well under the EPS requirements, the rates set forth in the sample tariff will approximate the rates necessary in order to cover the costs of compliance until approximately 2008. In 2008-2009, the caps may need to increase to approximately $1.40 per service per month for residential customers, $52.00 per service per month for non-residential customers whose demand is less than 3,000 kW per month, and $156.00 per service per month for non-residential customers whose demand is 3,000 kW or more per month, although the basic kWh charge could remain the same ($0.004988). In 2010-2011 and thereafter, the caps may need to increase to approximately $2.00 per service per month for residential customers, $75.00 per service per month for non-residential customers whose demand is less than 3,000 kW per month, and $222.00 per service per month for non-residential customers whose demand is 3,000 kW or more per month, although the basic kWh charge could continue to remain the same ($0.004988).

For utilities that did not perform well under the EPS requirements, the rates set forth in the sample tariff will approximate the rates necessary in order to cover the costs of compliance until approximately 2008. In 2008-2009, the caps may need to increase to approximately $2.00 per service per month for residential customers, $75.00 per service per month for non-residential customers whose demand is less than 3,000 kW per month, and $222.00 per service per month for non-residential customers whose demand is 3,000 kW or more per month, although the basic kWh charge could remain the same ($0.004988).

6. Probable effect on state revenues.

There may be a slight increase in state revenues resulting from increases in sales taxes on tariffs filed pursuant to proposed R14-2-1808. There may also be increases in income taxes resulting from an increase in Arizona manufacturing of renewable technologies.

7. Less intrusive or less costly alternative methods of achieving the purpose of the proposed rulemaking.

The Commission is unaware of any less intrusive or less costly methods that exist for achieving the purpose of the proposed rulemaking.

8. If for any reason adequate data are not reasonably available to comply with the requirements of subsection B of this section the agency shall explain the limitations of the data and the methods that were employed in the attempt to obtain the data and shall characterize the probable impacts in qualitative terms.

The data used to compile the information set forth in subsection B are reasonably adequate for these purposes. Some of this data are based upon projections. In addition, the analysis of the data uses an industry-wide approach, instead of a utility-specific approach.

The costs to Affected Utilities to meet the renewable requirements, for example, will vary by Affected Utilities, depending upon the approach each one takes in meeting its renewable requirements. In particular, an Affected Utility's ability to meet the new Renewable Energy Standard will be impacted by how well that utility performed in 2001-2006 under the Environmental Portfolio Standard.

The impacts on consumers will be determined by the Tariffs that are filed for Commission approval under R14-2-1808. It is these costs that are described in Subsection B of this Section.