

E-mail: rwilliamson@azcc.gov

6. An explanation of the rule, including the agency's reasons for initiating the rule:

The Commission initiated this rulemaking to promote its goals to protect the environment and increase renewable energy resources for diversity of the fuel supply, to enhance system reliability and safety in a post 9/11 era, and to mitigate against volatility in non-renewable fuel prices.

7. A reference to any study relevant to the rules that the agency reviewed and either relied on in its evaluation of or justification for the rules or did not rely on its evaluation or justification for the rules, where the public may obtain or review each study, all data underlying each study, any analysis of the study and other supporting material:

None

8. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:

Not applicable

9. The summary of the economic, small business, and consumer impact:

ECONOMIC, SMALL BUSINESS, AND CONSUMER IMPACT STATEMENT

A. Economic, small business, and consumer impact summary.

1. Final rulemaking.

Rules R14-2-1801 through R14-2-1815 require gradual increases in the amount of electricity that is produced from renewable technologies. Under the 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 rules will increase the standards established in A.A.C. R14-2-1601 and R14-2-1618.

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 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 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 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 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 rules. After

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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.

The rules will 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 W. Washington, Phoenix, AZ 85007.

- B. Economic, small business, and consumer impact statement.

1. Identification of the final rulemaking.

The rules will be a new Section under Title 14, Chapter 2—Corporation Commission Fixed Utilities. Rules R14-2-1801 through R14-2-1815 require gradual increases in the amount of electricity that is produced from renewable technologies. Under the 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 rules will increase the standards established in A.A.C. R14-2-1601 and R14-2-1618.

2. Persons who will be directly affected by, bear the costs of, or directly benefit from the final 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 final 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 rule R14-2-1808.

Probable costs to the Commission of the rules would also include the costs associated with reviewing reports, establishing working groups pursuant to R14-2-1810 and R14-2-1811, processing proposed tariffs pursuant to R14-2-1808 and R14-2-1813, processing plans filed pursuant to R14-2-1813 and R14-2-1814, 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 final 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 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 final rulemaking, including any anticipated effect on the revenues or payroll expenditure of employers who are subject to the final 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 com-

ply with the 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 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 final 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 final rulemaking on small businesses.

- a. Identification of the small businesses subject to the final rulemaking.

Businesses that are subject to the 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 final 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 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 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 R14-2-1808.

- d. Probable cost and benefit to private persons and consumers who are directly affected by the final 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 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 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 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 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 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 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 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 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 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 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 final rulemaking.
The Commission is unaware of any less intrusive or less costly methods that exist for achieving the purpose of the 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,

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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.

10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):

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 in the final RES rules wherever they appear throughout the Article. In response to comments received, some clarifying language has been incorporated in some sections of the final rules, as explained in item 11 of this Preamble, but no substantial changes to the proposed rules were made.

11. A summary of the principal comments and the agency response to them:

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 R14-2-1804(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 def-

inition 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 R14-2-1804 and R14-2-1805.

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 subsection, 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 subsection 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 subsection.

R14-2-1803. Renewable Energy Credits

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

Unisource Energy proposed that a new subsection R14-2-1803(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 subsection R14-2-1803(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, subsections R14-2-1803(C) and (D) would be re-designated as subsections R14-2-1803(D) and (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 fur-

ther recommended that the phrase “of less than 100 Tons of cooling” should be added in subsection R14-2-1803(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 subsection R14-2-1803(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 subsection 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 subsection R14-2-1814(B)(4), it is not possible to explicitly assure that “renewable electricity” has been delivered to a customer.

Western Resource Advocates (“WRA”) proposed that subsection R14-2-1803(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 R14-2-1802, because delivery of distributed resources is to Arizona consumers per subsection R14-2-1802(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 subsection R14-2-1803(D) for Affected Utilities to demonstrate that the deliverability requirement has been met. WRA proposed that these clarifications be accomplished by dividing subsection R14-2-1803(D) into three subsections 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 subsection R14-2-1803(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 subsections (E), (F), and (G) in place of the subsection renumbered as R14-2-1803(E) pursuant to the discussion regarding the new subsection R14-2-1803(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

R14-2-1804(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 per 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 30 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' generation 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 exist-

ing 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 time-frame 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 time-frame.

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 R14-2-1808 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 R14-2-1808.

Resolution: No change required.

Issue: Reliability

Unisource Energy proposed that this subsection 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 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 Geronio, 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 subsection, 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 subsection R14-2-1805(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 non-existent, 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 subsection 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 R14-2-1805 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 subsection specifically state that the goals are floors, not ceilings. WRA recommended that the word “satisfy” in this subsection 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 subsection: “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 subsection: “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 subsection R14-2-1804(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 subsection. 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 subsection.

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

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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 subsection: "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 subsection: "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 subsection 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 subsection R14-2-1808(A) already provides that the Tariff shall be designed to recover the reasonable and prudent cost of compliance.

Analysis: Section R14-2-1808 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 R14-2-1808.

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 subsection.

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 subsection R14-2-1808(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 subsection.

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 subsection R14-2-1808(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 subsection 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 subsection R14-2-1808(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 time-frame 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 subsection R14-2-1808(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 adjuster 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 subsection 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 subsection.”

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 subsection R14-2-1808(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 subsection R14-2-1808(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 adjuster 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 adjuster mechanism rate is approved. APS proposed that additional language be added to the end of this subsection 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 adjuster 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 subsection R14-2-1808(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 adjuster mechanism rate filed pursuant to this Section.”

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

Issue: Cap on Funds

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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 subsection R14-2-1809(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 subsection 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 subsection (C) be added to Section R14-2-1810 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 subsection, 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 subsection, and that the subsection 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 subsection, 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 subsection, and renumber the subsection 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 subsection (D) to Section R14-2-1812 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 subsection, 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 subsection 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 subsection, 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 subsection 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 subsection, 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 subsection (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.

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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 subsection R14-2-1815(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 R14-2-1813 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 subsection R14-2-1815(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 subsection (D) be deleted from this rule, that Section R14-2-1815 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 subsection (D) from Section R14-2-1815 and adding the proposed language to this Section, we find that the public interest requires deleting subsection (D) from Section R14-2-1815, renumbering Section R14-2-1815 to conform, and adding a new Section R14-2-1816 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 subsection (D) from Section R14-2-1815, renumber the Section to conform, and add a new Section R14-2-1816 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 subsection 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 R14-2-1808 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 R14-2-1808 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 40-331(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, 40-321, 40-322, 40-331, and 40-361. 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 con-

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venient 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, 40-322, 40-331, and 40-361, 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

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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 R14-2-1804 and R14-2-1805, 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 R14-2-1814, 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

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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

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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 R14-2-1804 and R14-2-1805, 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 R14-2-1814, 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

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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 R14-2-1804 and R14-2-1805, 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 R14-2-1814, 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 onsite 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

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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 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 R14-2-1804 and R14-2-1805, 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 R14-2-1814, 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 CO₂ emissions regulation compliance costs of \$10 per ton of CO₂ (assuming marginal gas generation emission of an average of 900 pounds of CO₂, marginal coal unit emissions of 2,000 pounds of CO₂ 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

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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

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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 R14-2-1804 and R14-2-1805, 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 R14-2-1814, 60 days after the effective date of the Proposed RES Rules or by December 31, 2006, whichever occurs first.

WRA

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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 subsection R14-2-1802(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 R14-2-1804 and R14-2-1805, 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 R14-2-1814, 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.

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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 subsection R14-2-1802(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 20-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

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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 R14-2-1804 and R14-2-1805, 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 R14-2-1814, 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 onsite 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 R14-2-1804 and R14-2-1805, 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 R14-2-1814, 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

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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 five-year levelized Tariff were proposed in 2006 through 2010 and about \$54 million per year if a five-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 R14-2-1804 and R14-2-1805, 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 R14-2-1814, 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 R14-2-1804 and R14-2-1805.

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 R14-2-1804 and R14-2-1805, 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 R14-2-1814, 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 CO₂ emission regulations, one could include cost adders reflecting a range of compliance costs for those technologies which emit CO₂. 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.

12. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:

None

13. Incorporations by reference and their location to the rules:

None

14. Was this rule previously made as an emergency rule?

No

13. The full text of the rules follows:

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

**CHAPTER 2. CORPORATION COMMISSION
FIXED UTILITIES**

ARTICLE 18. ~~RESERVED~~ RENEWABLE ENERGY STANDARD AND TARIFF

Section

<u>R14-2-1801.</u>	<u>Definitions</u>
<u>R14-2-1802.</u>	<u>Eligible Renewable Energy Resources</u>
<u>R14-2-1803.</u>	<u>Renewable Energy Credits</u>
<u>R14-2-1804.</u>	<u>Annual Renewable Energy Requirement</u>
<u>R14-2-1805.</u>	<u>Distributed Renewable Energy Requirement</u>
<u>R14-2-1806.</u>	<u>Extra Credit Multipliers</u>
<u>R14-2-1807.</u>	<u>Manufacturing Partial Credit</u>
<u>R14-2-1808.</u>	<u>Tariff</u>
<u>R14-2-1809.</u>	<u>Customer Self-Directed Renewable Energy Option</u>
<u>R14-2-1810.</u>	<u>Uniform Credit Purchase Program</u>
<u>R14-2-1811.</u>	<u>Net Metering and Interconnection Standards</u>
<u>R14-2-1812.</u>	<u>Compliance Reports</u>
<u>R14-2-1813.</u>	<u>Implementation Plans</u>
<u>R14-2-1814.</u>	<u>Electric Power Cooperatives</u>
<u>R14-2-1815.</u>	<u>Enforcement and Penalties</u>
<u>R14-2-1816.</u>	<u>Waiver from the Provisions of this Article</u>
<u>Appendix A.</u>	<u>Sample Tariff</u>

ARTICLE 18. ~~RESERVED~~ 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.

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- 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.

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- 9. “Solar Space Cooling” is a technology that uses solar thermal energy absent the generation of electricity to drive a 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 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 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.

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:

<u>2006</u>	<u>1.25%</u>
<u>2007</u>	<u>1.50%</u>
<u>2008</u>	<u>1.75%</u>
<u>2009</u>	<u>2.00%</u>
<u>2010</u>	<u>2.50%</u>
<u>2011</u>	<u>3.00%</u>
<u>2012</u>	<u>3.50%</u>
<u>2013</u>	<u>4.00%</u>
<u>2014</u>	<u>4.50%</u>
<u>2015</u>	<u>5.00%</u>
<u>2016</u>	<u>6.00%</u>
<u>2017</u>	<u>7.00%</u>
<u>2018</u>	<u>8.00%</u>
<u>2019</u>	<u>9.00%</u>
<u>2020</u>	<u>10.00%</u>
<u>2021</u>	<u>11.00%</u>

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<u>2022</u>	<u>12.00%</u>
<u>2023</u>	<u>13.00%</u>
<u>2024</u>	<u>14.00%</u>
<u>After 2024</u>	<u>15.00%</u>

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:

<u>2007</u>	<u>5%</u>
<u>2008</u>	<u>10%</u>
<u>2009</u>	<u>15%</u>
<u>2010</u>	<u>20%</u>
<u>2011</u>	<u>25%</u>
<u>After 2011</u>	<u>30%</u>

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:

<u>2001</u>	<u>.3</u>
<u>2002</u>	<u>.2</u>
<u>2003</u>	<u>.1</u>

- 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

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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).

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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 web site.
- 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 web site 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

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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 web site 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 web site 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. 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.