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Arizona Corporation Commission
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BEFORE THE ARIZONA CORPORATION COMMISSION

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IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY FOR A HEARING TO DETERMINE THE FAIR VALUE OF THE UTILITY PROPERTY OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN, AND TO AMEND DECISION NO. 67744

IN THE MATTER OF THE INQUIRY INTO THE FREQUENCY OF UNLANNED OUTAGES DURING 2005 AT PALO VERDE NUCLEAR GENERATING STATION, THE CAUSES OF THE OUTAGES, THE PROCUREMENT OF REPLACEMENT POWER AND THE IMPACT OF THE OUTAGES ON ARIZONA PUBLIC SERVICE COMPANY'S CUSTOMERS

IN THE MATTER OF THE AUDIT OF THE FUEL AND PURCHASED POWER RACTICES AND COSTS OF THE ARIZONA PUBLIC SERVICE COMPANY.

Docket No. E-01345A-05-0816
E-01345A-05-0826
E-01345A-05-0827

WRA/SWEEP POST-HEARING BRIEF

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I. WESTERN RESOURCE ADVOCATES ("WRA")

Western Resource Advocates (WRA) addressed five issues in its testimony: green power tariffs, demand side management (DSM) to reduce the urban heat island effect, renewable energy, APS' proposed Environmental Improvement Charge, and a climate change management plan and commitment.

Green Power Tariffs

The addition of green power tariffs is in the public interest and WRA recommends adoption of a green power tariff for APS as described below. These tariffs will provide customers the option to purchase energy from renewable resources, resulting in an increase in the supply of renewable resources which emit little or no greenhouse gases or pollutants into the atmosphere. Such programs have been widely adopted throughout the country and, when effectively marketed, attract 1% or more of a utility's customers (Berry direct testimony, p. 3).

APS proposed green power tariffs in its direct testimony (DeLizio direct testimony, pp. 7-10; Fox direct testimony, pp. 20-22). In response, WRA proposed several modifications to the green power tariffs (Berry direct testimony, pp. 4-6), and APS accepted most of these proposed changes (summarized in Berry surrebuttal, pp. 4-5). APS also proposed to revise the calculation of the green power premium in a manner that is different than that recommended by WRA. APS' revised calculation of the premium would be acceptable to WRA with one additional change as explained below.

The elements of the green power tariff where APS and WRA agree are as follows:

- The initial premium should be $0.01 per kWh or $1.00 per month for each 100 kWh block (DeLizio rebuttal, p. 7).[1] In the percentage option, the premium, as applied to a customer's entire kWh consumption, would be $0.01 per kWh multiplied by the percentage of energy consumption that is to be green power (for example, at the 50% option, the rate applied to all kWh consumed would be $0.005 per kWh).

[1] WRA accepts APS' revised calculation of the initial premium in lieu of WRA's original proposal (Berry, direct testimony, p. 5), subject to the annual revisions to the premium described later in this brief.

- The minimum block size, in the block option, should be 100 kWh per month (Lockwood rebuttal, p. 7, DeLizio rebuttal, p. 7, Berry direct testimony, p. 4).

- The Environmental Portfolio Surcharge (and any successor Renewable Energy Standard charge) and the Environmental Improvement Charge do not apply to green power kWh (DeLizio rebuttal, p. 9, Berry direct testimony, p. 4).

- The resources used to serve green power customers should not be used to meet any other obligations such as the Renewable Energy Standard or contracts to sell Renewable Energy Credits (Lockwood rejoinder, p. 8, Berry surrebuttal, pp. 5-6).

- APS should provide regular reports on customer participation, sales, revenues, green power resources, and costs of the green power program as part of its annual reports to the Commission on the Renewable Energy Standard (Lockwood rebuttal, p. 6, Berry direct testimony, p. 5).

- APS should seek Green-e certification for the green power program as a means to assure customers, through independent review, that the program is delivering energy from renewable resources and that the energy from those resources is not also being used to satisfy other obligations (Lockwood rebuttal, pp. 6-7, Berry direct testimony, p. 4).

There are several elements of the green power tariff where APS and WRA disagree:

- APS proposed that the green power premium be fixed until the next rate case (DeLizio rebuttal, pp. 8-9). In contrast, WRA believes that the premium should reflect the stable cost of renewable energy minus the fluctuating cost of conventional generation. Thus, in periods of high fossil fuel prices, for example, green power might be less costly than conventional generation, resulting in an effective premium that is negative.

- APS proposed that after green power resources are fully subscribed, new renewable energy resources would be acquired and a new rate would be filed for Commission review, reflecting the new resource costs and the most recent approved avoided cost filing (DeLizio rebuttal, pp. 8-9). Apparently the new green power rates would apply only to customers who had not subscribed under the initial green power tariff. The initial subscribers would continue to be served under schedules GPS-1A and GPS-2A. WRA believes that this process could lead to a proliferation of tariffs, confusing customers and adding unnecessary complexity to the program.

WRA recommends (Berry surrebuttal, pp. 5, 6) that both of these issues be resolved with a single tariff and a single set of rates by directing APS to propose revisions to the premium annually, effective on the anniversary of the effective date of the decision in this case. The revisions to the premium would take into account the costs of existing renewable resources and

any additional renewable energy resources serving green power customers and APS' currently estimated avoided costs. The premium equals renewable energy costs minus APS' avoided costs, expressed as cents per kWh, and would be calculated using the method described by Ms. Lockwood (rebuttal, pp. 5-6).

Lastly, APS' revised green power percent schedule allows residential and non-residential customers to obtain 100%, 50%, 35%, or 10% of their kWh as green power (DeLizio rebuttal, Attachment GAD-4RB, Schedule GPS-2A). APS argues that the 10% option is compatible with Green-e standards (Lockwood rejoinder, p. 9). However, WRA's reading of the Green-e standards indicates that the 10% option for residential customers conflicts with Green-e standards which require a 25% minimum.[2] The green power percent schedule should therefore be modified so as to apply the 10% option only to non-residential customers. APS noted (Lockwood rejoinder, p. 9) that any interested customer should be able to afford green power and that the 10% option helps accomplish this goal. WRA believes that residential customers who want a small portion of their consumption provided by renewable resources can use the block option which allows them to purchase a 100 kWh block each month for $1.00. The average residential customer used 13,576 kWh per year in the test year (Standard Filing Requirement Schedule E-7, page 1), so the 100 kWh block would suffice for small purchasers, amounting to about 9% of average monthly consumption. This seemingly small issue is germane because the 10% option for residential customers may cause APS' inadvertent disqualification from Green-e certification.

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[2] Green-e Renewable Electricity Certification Program, National Standard Version 1.3, Section III A, dated August 14, 2006. This section states that, for percentage-of-use products, retail electricity offerings must offset at least 25% of a residential customer's electricity usage above and beyond any state mandated Renewable Portfolio Standard (RPS) renewable amount with new renewables. If a marketer or utility offers the option to offset less than 50% of a residential customer's electricity use, they must also offer a 100% option to residential customers.

Demand Side Management to Reduce the Urban Heat Island Effect

A major contributor to APS' peak load is the urban heat island effect. Cost effective reduction in the demand for electricity due to reduction of the urban heat island effect is in the public interest and WRA recommends that the Commission direct APS to establish a heat island reduction program as described below.

WRA and APS appear to agree that a DSM program to help reduce the urban heat island effect could be beneficial and should be carried out within the existing non-residential DSM programs as a custom project (Orlick rebuttal, pp. 12-14; Berry surrebuttal, pp. 2-3). Energy savings can be obtained from shade trees, cool roofs, and indirect effects due to urban vegetation, reflective building surfaces, and cool pavements (Berry direct testimony, pp. 16 –17, and Exhibit DB-6).

The DSM Collaborative established in Decision No. 67744 should assist APS in developing the details of the heat island reduction program. WRA recommends that APS invite practitioners in urban planning and landscape architecture, a representative from the Center for Urban Forest Research at the US Forest Service's Pacific Southwest Research Station (if available), and a representative from the Heat Island Group at the Lawrence Berkeley National Laboratory (if available) to participate in Collaborative meetings on the urban heat island reduction program in addition to the researchers from Arizona State University proposed by APS (Berry surrebuttal, p. 2).

APS and the Collaborative should actively seek out one or more specific neighborhoods in which to geographically concentrate a large number of urban heat island reduction measures so as to capture both direct and indirect savings from shade trees, cool roofs, and cool pavements and to achieve a high level of energy savings. In this respect the urban heat island reduction program would differ from typical DSM programs in which DSM measures are applied to customers scattered around APS' service territory. Further, implementation of the urban heat

island reduction program would likely require cooperation of a municipality as street trees and pavement are program elements (Berry surrebuttal, p. 2).

APS stated (Orlick rebuttal, p. 14) that the research underway at Arizona State University's Global Institute of Sustainability should yield substantial results before proceeding down the path of developing an entire heat island effect DSM program. In contrast, WRA recommends that the Commission direct APS to begin developing a heat island reduction program as quickly as possible (Berry surrebuttal, p. 3). It is not necessary to delay several years for more research to be completed before designing a cost effective urban heat island reduction program as there has already been over a decade of research on urban heat island reduction, some of which is cited in WRA's testimony (Berry surrebuttal, p. 3, note 1).[3] Delays in developing and implementing a heat island reduction program simply mean that APS will burn expensive fuel and plan for expensive generation capacity when a cheaper alternative is readily available.

Renewable Energy

APS and its ratepayers face virtually unlimited cost exposure over the long run because of APS' heavy reliance on natural gas. Natural gas prices over the next 20 to 30 years are unpredictable, but they have been high in the past few years and are a major cause of APS' recent and proposed rate increases. It is in the public interest to cap APS' exposure to high natural gas prices with low cost, stably priced renewable energy.

WRA proposed that low cost, stably priced renewable energy be used as a hedge against the high costs of natural gas burned in power plants (Berry direct testimony, pp. 7-15). WRA's analysis in its direct testimony indicates that at recent natural gas prices, some renewable energy

[3] Ms. Orlick testified that she was unaware of the extensive research on urban heat island effects and measures to counter heat island effects. In light of the existence of significant research on heat island effects and measures to reduce the effects, APS' recommendation to delay development of a heat island program while awaiting results from Arizona State University is unsupported.

resources are less costly than conventional generation and that the renewable energy can be obtained at fixed or stable prices (Berry direct testimony, pp. 8-10, Exhibits DB-2 and DB-3). Wind energy from projects installed in 2006 or 2007 is priced at around $50 to $60 per MWh and geothermal energy contracts signed in 2005 or 2006 are priced at around $55 to $61 per MWh (Berry direct testimony, Exhibit DB-3). These prices are cost competitive with natural gas fired power production at recent prices for natural gas (Berry direct testimony, p. 10 and Exhibits DB-2 and DB-3).

Low cost, stably priced renewable energy is best viewed as a hedge against high gas prices in an uncertain world where utilities cannot use price forecasts to effectively manage gas price risk over the long run (Berry, surrebuttal, p. 8; see also Ormond direct testimony, p. 7). To implement a long term hedge against high natural gas prices, WRA recommends that the Commission direct APS to seek to acquire 1,300 GWH per year of low cost, stably priced renewable energy under long term contracts starting within the period 2008 through 2010 and continuing for at least 15 years (Berry, direct testimony, p. 10).[4] This renewable energy is in addition to that obtained in compliance with Decision No. 67744.

WRA also proposed several procedural recommendations (Berry, direct testimony, p. 11). First, APS should file for Commission review, within 4 months of the date of the Commission's decision in this case, a renewable energy acquisition plan that incorporates input from interested parties obtained via a collaborative process. Second, APS should file reports with the Commission by March 1 of 2009, 2010, and 2011 describing its progress in meeting the goals and proposing actions to make up any deficiencies in meeting the goals. The Commission may set a course of action to deal with problems and deficiencies in meeting the goal (Berry, direct testimony, p. 12).

[4] WRA's proposal is similar in magnitude and timing to that of the Interwest Energy Alliance (Ormond, direct testimony, p. 6).

WRA disagrees with APS' contention that the Renewable Energy Standard (RES) docket is the only proper venue in which to consider renewable energy (Lockwood rebuttal, p. 9). It is appropriate to consider additional renewable energy in this rate case. Much of the cost increase that APS proposes to recover through rates is due to higher fuel costs. To the extent that APS caps its exposure to high fossil fuel costs through use of renewable energy, future rate increases can be limited.

The Commission has authority to direct APS to seek to obtain additional renewable energy as a hedge against high natural gas prices under A.R.S. § 40-321(A) which provides that:

> "When the Commission finds that the equipment, appliances, facilities or service of any public service corporation, or the methods of manufacture, distribution, transmission, storage or supply employed by it are unjust, unreasonable, unsafe, improper, inadequate or insufficient, the Commission shall determine what is just, reasonable, safe, proper, adequate or sufficient, and shall enforce its determination by order or regulation."

Moreover, A.R.S. § 40-331(A) provides that

> "When the commission finds that additions or improvements to or changes in the existing plant or physical properties of a public service corporation ought reasonably to be made, or that a new structure or structures should be erected, to promote the security or convenience of its employees or the public, the commission shall make and serve an order directing that such changes be made or such structure be erected in the manner and within the time specified in the order. If the commission orders erection of a new structure, it may also fix the site thereof."

The acquisition of renewable energy resources falls squarely within the terms of these statutes.

Further, the RES rules alone are not adequate to provide a significant hedge against high natural gas prices over the long run for two reasons. First, the RES itself is not a settled matter. At this time, the outcome of the Attorney General's review of the RES is not known and the outcome of any possible lawsuit over the RES cannot be predicted with certainty. If the Commission directed APS to obtain the additional renewable energy proposed by WRA through its order in this rate case it may avoid these risks.

Second, the evidence presented by WRA in this case indicates that the quantities of renewable energy to be obtained under the RES do not provide an adequate hedge against high natural gas prices (Berry, direct testimony, p. 12). Under the RES, by 2010, for example, APS would be required to obtain 2.5% of its energy from eligible renewable resources, of which 80% would come from non-distributed resources, amounting to 2% of energy from low cost non-distributed resources. Yet APS expects that about 26% of its own-load generation in 2006 would come from gas-fired power plants (Ewen workpaper PME_WP3, p. 3). More renewable energy than that required by the RES is needed to effectively hedge against high gas prices over the long run. WRA's proposal, when combined with the renewable energy obtained pursuant to Decision No. 67744, would result in APS obtaining 6% to 7% of its energy from renewable resources over the period 2010 to 2016 (Berry, direct testimony, p. 12 and Exhibit DB-4). This greater quantity of renewable energy is a more effective hedge, as it will displace about a quarter of APS' gas-fired generation (Berry, direct testimony, p. 12) instead of just 8% under the RES (non-distributed RES requirement of 2% divided by 26% of generation from gas-fired power plants).

Renewable energy will also reduce APS' emissions of carbon dioxide from combustion of fossil fuels. As a result, APS will be able to reduce the cost of meeting future greenhouse gas regulations (Berry, direct testimony, p. 15).

No party, including APS, testified against using renewable energy as a hedge against high natural gas prices. APS did, however, state concerns that renewable energy may not be a cost effective hedge against high natural gas prices for APS because renewable energy might cost more than conventional generation in that particular case (Dinkel rebuttal, p. 2). WRA believes that APS' inference about higher costs for renewable energy compared to the costs of natural gas fired generation cannot be supported over the long run because of the enormous uncertainty over future gas prices. It is not possible to reliably forecast the price of natural gas (Berry surrebuttal, p. 8) and the uncertainty over future gas prices means that neither the Commission nor APS can

ever be sure that renewable energy will be more costly than gas-fired generation at any particular time over the next 20 to 30 years. In general, a more diverse generation portfolio is more resilient to the effects of high fossil fuel prices than a portfolio with a small amount of renewable resources and a large amount of gas-fired generation.

WRA offered several strategies for obtaining the lowest cost renewable energy as possible (Berry, surrebuttal, p. 8):

1. **Seek proposals not only from developer-owned projects, but also for projects that would be owned by APS**. If APS owned the facilities it may be able to lower the cost. Utility ownership of renewable energy resources is becoming more common.

2. **Get better information on wind integration costs**. These costs are likely to be smaller than the costs APS used in its evaluation of the 2005 renewable energy acquisition (Berry, direct testimony, pp. 14-15; Ormond direct testimony, pp. 2-5). APS' forthcoming wind integration study (Mr. Dinkel rebuttal, pp. 4-6) should address this need.

3. **Assign only the incremental costs of transmission to renewable energy**. If APS obtains renewable energy from a geothermal resource, for example, it will need transmission service to deliver the energy to the APS system. However, it will also need less transmission service somewhere else because it does not have to transmit power from another (conventional) resource to its customers. The proper cost to assign to renewable energy is not the cost of transmission from the illustrative geothermal project, but the difference in transmission cost between that needed for the geothermal project and the transmission cost avoided by the geothermal project.

APS should recover the costs of the recommended additions of renewable energy through the power supply adjustor (Berry, direct testimony, p. 13). To the extent that these resources qualify under the RES, they could be counted toward APS' RES goal.

Finally, no party testified that increasing the amount of renewable energy would compromise system reliability. Numerous detailed studies of other systems indicate that renewable energy in quantities greater than that proposed by WRA does not degrade system reliability and imposes only small integration costs in the case of intermittent resources (Berry, direct testimony, pp. 13-15).

Environmental Improvement Charge (EIC)

It is in the public interest to reduce the environmental impacts of power generation and to encourage utilities, including APS, to be willing partners in reducing those environmental impacts. Electric utilities account for the following shares of human-caused air emissions in the United States which have a wide range of deleterious effects on human health, visibility, and the environment in general (Berry, direct testimony, pp. 18-19, and Berry surrebuttal, p. 9):

- 33% of greenhouse gas emissions which are a cause of climate change
- 67% of sulfur dioxide emissions
- 22% of nitrogen oxides
- 43% of mercury emissions.

APS proposes an EIC to overcome regulatory lag in recovering substantial costs associated with environmental expenditures (Fox direct testimony, p. 9, DeLizio direct testimony, p. 3). The costs to be recovered through the EIC are investments and expenses associated with installation and maintenance of the environmental upgrades at APS' generation facilities.[5] The proposed tariff (Schedule EIC) indicates that costs would be associated with environmental improvements implemented on or after January 1, 2004 for which costs have not been fully recovered, ongoing environmental improvement projects, or prospective environmental improvement projects designed to comply with environmental standards required by federal, state, tribal, or local laws or regulations, including water, waste, and air standards. The air standards include limits for SO_2, NOx, particulate matter, volatile organic compounds, and mercury.

WRA supports the concept of the EIC. It is reasonable to assume that APS will comply with environmental laws and regulations and would normally recover the costs of such

[5] Costs to be entered into the EIC account are return on capital, depreciation, operation and maintenance expenses, property taxes, and associated income taxes (DeLizio direct testimony, p. 4 and Schedule EIC). At the time of a rate case, unrecovered costs could be put into base rates and the EIC would be reduced commensurately (DeLizio direct testimony, pp. 6-7).

compliance. The benefit of the EIC is that it encourages APS to either accelerate programs to comply with existing or anticipated environmental standards early or undertake voluntary environmental improvements that are not required by law by making cost recovery more timely and more certain. These actions would benefit Arizona and the Arizona environment, and may reduce APS' exposure to potential compliance costs in the future. No party to this case has argued that the environment is too clean and that proactive environmental programs are not in the public interest, *per se*.

Both Staff and RUCO recommended against approval of the EIC. However, RUCO (Diaz Cortez, direct testimony, p. 37) did not consider the benefits of accelerated or voluntary environmental improvements or reasons why APS would pursue accelerated or voluntary actions, but only considered mandated improvements in making its recommendation. Staff (Rowell, direct testimony, p. 14) raised the concern that the environmental benefits of the EIC are unknown. However, WRA believes that those benefits should be set forth in specific applications by APS to the Commission for changes in the charge and cannot be quantified in the abstract. For example, if APS proposed reducing sulfur dioxide emissions below mandated levels, it could explain the benefits at the time the proposal is made. APS did provide estimates of reductions in air emissions for the initial set of projects at the Cholla plant (Fox, rebuttal, pp. 22-25 and Attachment EZF-1RB).

In sum, the EIC is beneficial because (Berry, direct testimony, p. 19):

- It makes the environmental impacts of resource choices more apparent to APS, the Commission, and ratepayers.
- Utilities should not be discouraged from complying with environmental regulations or pursuing beneficial environmental goals through fear of disallowances for doing the right thing.
- Utilities should be encouraged to take actions that reduce environmental damages caused by power generation, including compliance with regulations, actions taken in anticipation

of future regulation, or societally beneficial responses to environmental issues for which no regulation is imminent.

The EIC does not fit customary cost recovery precepts as indicated by RUCO (Diaz Cortez, direct testimony, pp. 35-36). But traditional ratemaking principles were not developed with proactive environmental efforts in mind. Where new circumstances have not fit traditional ratemaking canons, this Commission has been innovative while still protecting ratepayers from imprudent utility actions. For example, the Commission authorized a DSM charge for APS in Decision No. 67744 (Settlement Agreement paragraph 43) and authorized a surcharge for the Environmental Portfolio Standard and the Renewable Energy Standard, all of which recover costs approximately simultaneously with their expenditure.

WRA recommends approval of the EIC or similar concept. WRA further recommends (Berry, direct testimony, pp. 19-20) that Schedule EIC be modified to explicitly include voluntary environmental improvements and to exclude penalties assessed for non-compliance with environmental regulations. If the Commission accepts RUCO's argument that no special rate treatment is needed in the case of compliance with mandatory environmental regulations, WRA proposes that the Commission adopt the EIC and apply it to cases where APS can show that it is accelerating compliance by at least one year or voluntarily reducing environmental impacts beyond those required by law.

Climate Change Management Plan and Commitment

Global climate change is a critical environmental issue and will remain so for many decades (Berry, direct testimony, pp. 20-21). APS' carbon dioxide emissions contribute to increased atmospheric concentrations of greenhouse gases and expose APS and its ratepayers to the costs of complying with future greenhouse gas emission regulations (Berry, direct testimony, pp. 21-22). It is in the public interest for APS and the Commission to directly and expeditiously address APS' greenhouse gas emissions and associated exposure to future compliance costs.

WRA proposed (Berry, direct testimony, pp. 24-25) that, to enable APS to explicitly and fully take into account greenhouse gas emission risks when making resource decisions and to actively manage the risks associated with greenhouse gas emissions, the Commission should direct APS to undertake several interrelated tasks:

Task 1. **Management Plan**. Prepare, with public input, a greenhouse gas emissions management plan that: a) updates APS' inventory of greenhouse gas emissions, historical trends in greenhouse gas emissions and forecasts of greenhouse gas emissions, b) identifies senior managers responsible for greenhouse gas emission analyses and risk management, c) analyzes the financial and cost risks APS faces as a result of greenhouse gas emissions, d) identifies and analyzes risk management strategies, and e) outlines how APS will incorporate the preceding elements into its resource planning and selection activities going forward. This management plan should be submitted to the Commission no later than 18 months after the Commission's decision in this case.

Task 2. **Carbon Emission Reduction Study**. Conduct, with public input and with the assistance of outside expertise, an analysis of the applicability of coal technologies with significantly reduced carbon dioxide emissions, addressing the current status of and expected future progress in carbon dioxide emission reduction and carbon capture and sequestration options, including the expected costs of technologies reviewed. The study should also address the extent to which traditional utility regulation should be modified to encourage adoption of carbon dioxide emission reduction technologies and carbon capture and sequestration technologies. This analysis should be completed within 12 months of the Commission's decision in this case and should be used in Task 1. APS and participating members of the public should regularly review the work of the outside experts and provide input into the study.

Task 3. **Commitment and Action Plan**. Prepare, with public input, a long term greenhouse gas emission reduction commitment and an associated action plan for Commission review and approval, addressing at a minimum: emissions covered, enforceability, incentives, benchmarks, targets and associated schedules, duration of the commitment, methods of implementation, estimated costs, cost recovery through the EIC or by other means, measurements of implementation progress, and conditions under which targets may be revised. The commitment and action plan should be submitted to the Commission at the same time as the management plan set forth in Task 1.

WRA also recommends (Berry, direct testimony, p. 25) that the Commission review and either approve, approve with modifications, or disapprove the management plan, carbon

emission reduction study, and company commitment and action plan at an open meeting or hearing. If the Commission disapproves the management plan, carbon emission reduction study, or commitment and action plan, it should provide direction on how to proceed with climate change risk management and associated cost recovery.

APS would be responsible for conducting the tasks, submitting the reports, and adopting a company commitment to greenhouse gas reductions. The public input recommended by WRA should be obtained via a collaborative of interested parties to this case that is established by the Commission in its decision in this case (Berry, direct testimony, p. 26). The collaborative should meet regularly with APS, provide advice to APS and its consultants, and review APS' drafts and proposals for carrying out the work inherent in each Task.

If the Commission rejects the EIC, WRA's recommendations on the climate change plans, studies, and commitments summarized above remain the same (Berry, direct testimony, pp. 26-27).

No party testified against the proposed planning, studies, development of commitments, or Commission review of the plans and commitments.

Lastly, if APS acquires or commits to acquire additional supply side resources prior to Commission approval of APS' climate change plans, analyses, and commitments as described above, WRA recommends that the Commission direct APS to follow a three step process (Berry, direct testimony, p. 26). First, APS should fully evaluate the potential costs of complying with greenhouse gas emission requirements or similar requirements that may be imposed by government for each resource that it considers. Second, no more than 30 days after committing to any new resources, APS should file with the Commission its evaluation of its potential cost exposure associated with future greenhouse gas emission requirements, its analysis of the resource options considered, and the reasons for selecting the winning resources. Third, at the time APS requests recovery of the costs of complying with any greenhouse gas emission

requirements applicable to those resources, the Commission should consider the prudence of APS' selection of the resources by reviewing APS' evaluation of the potential compliance costs at the time it evaluated its resource options and selected specific resources. No party testified against this proposal.[6]

II. SOUTHEWEST ENERGY EFFICIENCY PROJECT ("SWEEP")

The Southwest Energy Efficiency Project (SWEEP) addressed the following issues in its testimony.

Increasing Energy Efficiency in the APS Service Territory is in the Public Interest

Increasing energy efficiency through cost-effective programs is in the public interest and will provide significant and cost-effective benefits for APS customers (residential consumers and businesses), the electric system, the economy, and the environment. (Schlegel direct testimony, p. 4).

The Commission Should Increase Energy Efficiency for APS Customers by Adopting the Energy Efficiency Standard (EES) Proposed by SWEEP

Specifically, the Commission should set APS DSM energy efficiency program goals in the form of an Energy Efficiency Standard (EES). (Schlegel direct testimony, p. 4). The EES should require APS DSM energy efficiency programs to: (1) achieve energy savings equal to at least 5% of total energy resources needed to meet retail load in 2010, and at least 15% in 2020; and (2) reduce summer peak demand by at least 5% of total capacity resources needed to meet retail peak demand in 2010, and at least 15% in 2020. (Schlegel direct testimony, p. 4).

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[6] In Decision No. 65347 (dated November 1, 2002), the Commission ordered that, as a condition of constructing Springerville Unit 4, the developers of Springerville Units 3 and 4, and not Tucson Electric Power Company ratepayers, should bear any risk of the costs of possible regulation of carbon dioxide emissions in the future (Finding of Fact 45).

Achieving the Goals of the EES Would Provide $1.4 Billion in Net Economic Benefits (Benefits Minus Costs) and other Benefits, and Would Create a 1,440 MW "Energy Efficiency Power Plant"

Achieving the goals of the Energy Efficiency Standard would save consumers and businesses $1.4 billion during 2005-2020, eliminate the need for about 1,440 MW[7] of new power plants by 2020 and the associated power line and pipeline infrastructure costs, provide 1,600 GWh of cumulative annual energy savings in 2010 and almost 7,000 GWh in 2020, reduce average annual load growth in retail energy and summer peak demand by 32% (from 3.8% to 2.6%), reduce electricity price spikes and the risks of natural gas price volatility, save precious water, and reduce air pollution and the carbon emissions that cause global warming. (Schlegel direct testimony, p. 5; Exhibit JS-1 in Schlegel direct testimony; SWEEP response to APS-SWEEP-2-7 attached herein as Exhibit JS-3).

The EES would result in a 1,440 MW "energy efficiency power plant" that would provide $1.4 billion of net economic benefits (benefits minus costs), instead of building conventional power plants that would cost more and expose consumers to higher electricity prices, use precious water, and harm the environment. (Schlegel direct testimony, p. 5; SWEEP response to APS-SWEEP-2-7 attached herein as Exhibit JS-3).

The Goals of the EES are Reasonable, and They can be Achieved with Cost-Effective Energy Efficiency Programs

The proposed EES goals are both reasonable and achievable. (Schlegel direct testimony, p. 5). Other states and utilities have achieved energy savings equivalent to or greater than the EES goals that SWEEP proposes. (Schlegel direct testimony, p. 5-6).

[7] SWEEP clarified its estimate of the reduction in summer peak demand in response to a data request from APS (APS-SWEEP-2-7), attached herein as Exhibit SWEEP-JS-3.

Similar Energy Efficiency Goals are Supported by Other Policy Makers in Arizona and the West

Similar savings goals are supported by other policy makers in the west. Meeting the EES goals in Arizona would contribute substantially to the achievement of the adopted goal of the Western Governors Association (WGA) to increase energy efficiency 20% by 2020. (Schlegel surrebuttal testimony, p. 3). Also, in Arizona in August 2006, a diverse group of 35 Arizona stakeholders in the Climate Change Advisory Group provided a consensus recommendation to set electric energy savings goals of 5% savings by 2010 and 15% savings by 2020 through DSM programs, which is equivalent to the SWEEP EES proposal. (Schlegel surrebuttal testimony, p. 3).

The EES Goals Should be Adopted in this Proceeding, and the Goals Should be Based on Effects and Impacts, Not on Spending

APS testified that it is premature to set energy and peak demand savings goals, and APS recommended spending targets. (Rebuttal Testimony of Teresa Orlick, APS, p. 3-4). APS also testified that while the current programs are ongoing until modified by the Commission, and therefore "evergreen," and while the programs could be modified or increased in the future, there is no current commitment at APS or requirement for APS to increase the program budgets or savings. (Rebuttal Testimony of Teresa Orlick, APS, p. 3-4; Orlick response to cross-examination, October 20, 2006).

SWEEP testified that it is essential to set goals to implement Commission policy, in this proceeding. Clear, multi-year goals help utilities, stakeholders, and customers understand how the future electric system will meet future customer load, in a manner consistent with the policies of the Commission. Therefore, it is essential to have a goal for APS to achieve, with a clear commitment and explicit requirement, and to increase that goal beyond what APS was ordered to achieve in 2005. (Schlegel surrebuttal testimony, p. 3; Schlegel testimony and response to cross-examination, October 23, 2006).

SWEEP testified that it is important to focus primarily on the *effects and impacts* of energy and utility policies for setting goals, not primarily on the funding or spending levels. Simply spending money, even cost-effectively, should not be the primary focus of future goals for energy efficiency programs. (Schlegel surrebuttal testimony, p. 3-4).

It is Essential to Increase Energy Efficiency Efforts to Reach More APS Customers

In response to SWEEP's data requests, APS provided data on energy efficiency program spending through September 2006, and on the number of customers that participated, are committed to participate, or are in the pipeline to potentially participate in the future. (Schlegel testimony, October 23, 2006).

Based on review of the APS responses to SWEEP's data requests, it is clear that the total number of APS customers yet to reach is much greater than the number of customers participating to date. SWEEP summarized two examples: (Schlegel testimony, October 23, 2006).

1. For new homes, see the APS response to SWEEP-APS-1-6: APS reports 2,803 homes committed to participate vs. 32,000 to 35,000 homes that will be built each year. This is equivalent to about 8% market penetration. (Schlegel testimony, October 23, 2006).

2. For nonresidential customers, see the APS response to SWEEP-APS-1-2 and the table in APS08338. Through September 2006, 16 nonresidential customers had participated, 9 in the Building Operator Training program. About 170 nonresidential customers are committed to participate or are in the pipeline. Contrast this with the total number of APS nonresidential customers, about 110,000 total (see Exhibit JS-2 and the APS customer data tables). Less than 2% of the nonresidential customers have participated, are committed, or are in the pipeline. (Schlegel testimony, October 23, 2006).

Given how many APS customers there are to reach, and the high rate of customer and load growth in the APS territory, it is not premature to increase the APS DSM energy efficiency program goals. (Schlegel testimony, October 23, 2006).

The Existing Commission-Approved DSM Energy Efficiency Programs Should be Expanded to Achieve the Goals of the EES.

The existing DSM energy efficiency programs should be expanded to achieve the goals of the EES. While some additional DSM energy efficiency programs or program elements may be needed to achieve the EES goals, and may also be valuable for providing additional benefits to APS customers, the primary mechanism for achieving the EES goals should be the expansion of existing programs already approved by the Commission. The existing programs are providing significant net benefits (over $4.2 million of net economic benefits in 2005), and the net benefits continue to grow as more customers participate in the cost-effective DSM programs. (Schlegel direct testimony, p. 6; Schlegel surrebuttal testimony, p. 4-5).

Adequate Funding Should be Authorized to Achieve the Goals of the EES and Secure the Associated Benefits

The Commission should authorize adequate funding to achieve the goals of the EES. SWEEP estimates that energy efficiency funding of $0.002 per kWh of retail energy sales (2 mills) will be necessary to achieve the EES goals. In 2007, the third year of the 2005-2007 Portfolio Plan, total DSM energy efficiency funding should be increased from about $25 million to $38 million, an increase of about $13 million. In 2008 and future years, total DSM energy efficiency funding should be equivalent to $0.002 (2 mills) per kWh of retail energy sales, which would be $56.8 million in 2008. The additional DSM funding for 2008 would amount to $40.8 million (the amount above the $16 million per year authorized in Decision No. 67744). (Schlegel direct testimony, p. 6-7). Funding for any DSM demand response and load

management programs should be in addition to the energy efficiency program funding. (Schlegel direct testimony, p. 6-7).

The SWEEP-proposed annual energy efficiency funding pales in comparison to the $900 million to $1 billion APS testified it is spending annually on infrastructure investments. (Schlegel response to cross-examination, October 23, 2006). Also, the energy efficiency programs are required to be cost-effective when compared to other potential investments APS is planning or implementing to meet customer needs. (Schlegel response to cross-examination, October 23, 2006).

Inadequate funding for DSM energy efficiency programs and the resulting underachievement of cost-effective energy efficiency would lead to higher total costs for customers. (Schlegel surrebuttal testimony, p. 5).

A Combination of DSM Funding and Cost-Recovery Mechanisms Should be Used

Energy efficiency funding and cost recovery for the additional DSM funding and the total DSM funding could be accomplished through funding in base rates, a DSM adjustment mechanism, a system benefits surcharge, amortizing or capitalizing the DSM investments over time (to reduce rate impacts in early years), or a combination of funding mechanisms. SWEEP believes it would be best to build on the existing Commission-approved funding mechanisms (base rates and a DSM adjustor) and use a combination of mechanisms going forward. (Schlegel direct testimony, p. 7-8).

If the Commission is Concerned About Potential Rate Impacts, Additional DSM Funding and Cost-Recovery Mechanisms Should be Considered

The Commission could choose to expand the current two-part approach or build upon it by using an additional DSM funding and cost-recovery mechanism for some or all of the additional funding needed to meet the goals of the EES, including amortization or capitalization mechanisms that would reduce the rate impacts of the DSM program funding increase in the

early years of the EES. (Schlegel surrebuttal testimony, p. 6). The Commission could choose to amortize or capitalize a portion of the DSM expenditures, similar to how investments in power plants are recovered through customer rates over time, thereby reducing the customer rate impacts of DSM programs in the early years of the EES. (Schlegel direct testimony, p. 8). For example, the Commission could spread the additional DSM costs to ratepayers across several years (e.g., 5 years) in a manner that acknowledges that the energy efficiency benefits are achieved over several years. (Schlegel direct testimony, p. 8).

APS Should File an EES Implementation Plan for Commission Review and Approval

APS should file an Implementation Plan to achieve the goals of the EES, covering the 2008-2020 program years, in the spring of 2007, at the same time APS refiles the Non-Residential portion of its DSM Portfolio Plan (per Commission order). The EES Implementation Plan should be developed by APS with input from and review by the Collaborative DSM Working Group, which includes Staff and interested parties. The EES Implementation Plan would be reviewed by Staff, and then be reviewed and approved by the Commission prior to implementation for 2008 and future years. (Schlegel direct testimony, p. 9; Schlegel surrebuttal testimony, p. 6).

The EES Implementation Plan should include the historical DSM results for 2005-2006, and should include a forecast for the expansion of the existing Commission-approved DSM energy efficiency programs in 2007. The expansion of approved DSM programs in 2007 should proceed as a result of the order in this proceeding, and should not be postponed for the development, review, and Commission approval of the EES Implementation Plan (which should cover 2008-2020 DSM programs, plus potentially any remaining period in 2007 after Commission review and approval). (Schlegel surrebuttal testimony, p. 6).

Since Staff will participate directly in the development of the EES Implementation Plan as part of the DSM Collaborative Working Group, the Commission should provide up to 60 days

for Staff review of the EES Implementation Plan after it is filed by APS. (Schlegel direct testimony, p. 9).

Any Underspending of the $48 Million DSM Energy Efficiency Spending Requirement for 2005-2007 Should be Carried Over and Spent in Subsequent Years

APS may be able to meet the requirement set forth in Decision 67744 to spend $48 million on Commission-approved DSM programs by the end of 2007, depending on customer and market response to recently-implemented programs. However, it is possible that due to the newness of the programs, the time lags associated with the implementation of some large projects, and the delays in getting the programs in the field, including Staff review and Commission approval taking longer than expected, APS may not meet the spending requirement. As APS proposed,[8] any underspending of the $48 million through 2007 should be carried over and spent in subsequent years, in addition to the annual budget for each of the future program years. (Schlegel surrebuttal testimony, p. 2). SWEEP requests an explicit Commission order on this issue in this proceeding, in case APS does not meet its $48 million spending requirement. (Schlegel surrebuttal testimony, p. 2).

The Commission Should Approve the DSM Performance Incentive

SWEEP supports the proposed performance incentive, including the basis of 10% of net benefits (APS share), and the cap of 10% of spending. This mechanism was reviewed and supported by the DSM Collaborative, and was included in the APS DSM Portfolio Plan. (Schlegel surrebuttal testimony, p. 6-7).

[8] Rebuttal Testimony of Teresa Orlick, APS, p. 3.

The Commission Should Reject APS' Proposal for Net Lost Revenue Recovery

SWEEP supports the position of Staff (Anderson)[9] that net lost revenue recovery not be allowed. SWEEP does not support the recovery of net lost revenues in any event, even if there was not a performance incentive for APS. (Schlegel surrebuttal testimony, p. 7).

APS Should Develop an Urban Heat Island Effect Program or Program Element

SWEEP supports WRA's testimony[10] proposing mitigation of Urban Heat Island Effects in metropolitan areas through APS DSM programs. SWEEP believes that APS should either propose an Urban Heat Island Effect DSM program, or further develop an Urban Heat Island Effect program element within the already-approved programs, with input from the APS DSM Collaborative. (Schlegel surrebuttal testimony, p. 7).

The Commission Should Adopt WRA's Recommendations on Climate Change Risk Management

SWEEP supports WRA's recommendations on climate change risk management.[11] Specifically, the Commission should direct APS, with input from the DSM Collaborative, to prepare a climate change management plan, a carbon emission reduction study, and a climate change commitment and action plan, within 12-18 months of the Commission's decision in this case. (Schlegel surrebuttal testimony, p. 8). SWEEP believes some portions of the climate change plans (e.g., the updated inventory, early identification of actions and strategies to reduce climate change risk, and linkages between managing climate change risk and other policies of the Commission and activities of APS, such as DSM energy efficiency programs and support for renewable energy) should be filed sooner than within 12 months. (Schlegel surrebuttal testimony, p. 8).

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[9] Direct Testimony of Jerry Anderson, Staff, p. 8-9.
[10] Direct Testimony of David Berry, WRA, p. 15.
[11] Direct Testimony of David Berry, WRA, Summary of Recommendations, p. 28.

DATED this 22nd day of January, 2007.

ARIZONA CENTER FOR LAW IN
THE PUBLIC INTEREST

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ORIGINAL and 13 COPIES of
the foregoing filed this 22nd day
of January, 2007, with:

Docketing Supervisor
Docket Control
Arizona Corporation Commission
1200 W. Washington
Phoenix, AZ 85007

COPIES of the foregoing
transmitted electronically
this 22nd day of January, 2007, to:

All Parties of Record

_____

Exhibit SWEEP-JS-3

SWEEP Response to APS Data Request APS-SWEEP-2-7
SOUTHWEST ENERGY EFFICIENCY PROJECT (SWEEP)
RESPONSES TO ARIZONA PUBLIC SERVICE COMPANY'S
SECOND SET OF DATA REQUESTS
APS RATE CASE DOCKET NO. E-01345A-05-0816

APS-SWEEP-2-7 Please provide all workpapers, documentation, and studies, if any, in hard copy and in Excel format, if available, that supports your discussion of the benefits that would result from achieving the EES goals, discussed at page 5 of your testimony.

RESPONSE: The benefits of achieving the goals of the EES are described in my direct testimony, on page 5, and documented in Exhibit JS-1 attached to my direct testimony. Since Exhibit JS-1 is in energy units (GWh and kWh), I estimated the benefit of "eliminating the need for about 1,000 MW of new power plants by 2020" in the following manner. First, I estimated the growth in peak demand in the APS service territory by 2020 to be about 4,500 MW, using an average annual growth rate of 3.8%. Second, I checked my estimate of APS growth in peak demand (MW) with APS documents, specifically the Pinnacle West press release, dated May 17, 2006, regarding the Annual Meeting, in which Bill Post stated that, "over the next decade, customer demand for electricity will grow by about 3,000 megawatts." (See file SWEEP_ResponseAPS2-7_PW_PressRelease_MWGrowth.) If customer demand will grow 3,000 MW in 10 years, it will likely grow about 4,500 MW in 15 years, confirming my estimate. Finally, I multiplied the growth in customer demand (4,500 MW) by the 32% reduction in load growth due to the EES documented in Exhibit JS-1. The result was an estimated reduction of 1,440 MW by 2020, which is significantly higher than 1,000 MW.