BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

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

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	DOCKET NO. E-01345A-05-0816

Direct Testimony of

Amanda Ormond

on behalf of Interwest Energy Alliance

Docket No. E-01345A-05-0816

August 18, 2006

Direct Testimony of Amanda Ormond
Docket No. E-01345A-05-0816

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on behalf of Interwest Energy Alliance
Docket No. E-01345A-050816

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND YOUR BUSINESS ADDRESS?

A. My name is Amanda Ormond. My business address is 7650 S. McClintock Drive, Suite 103-282, Tempe, Arizona 85284.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a consultant to Interwest Energy Alliance and serve as their Southwest Representative.

Q. PLEASE DESCRIBE INTERWEST ENERGY ALLIANCE.

A. Interwest Energy Alliance (Interwest) is a 501(c)(6) trade organization representing the interests of non-governmental organizations and renewable energy developers and product manufacturers; primarily wind. Interwest works through education and advocacy to create state-level policies supporting renewable energy development. The organization concentrates its work in the states of Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE RELATED TO YOUR TESTIMONY.

I have worked in the energy and environmental field for 20 years in Arizona. In the mid '80s I was a environmental planner for an environmental consulting firm and focused on groundwater contamination evaluation and remediation projects. From 1987 to 2001 I was employed by the State Energy Office, a division of the Arizona Department of Commerce. I was appointed director in 1995 where I served for six years. In 2001 I started the Ormond Group, LLC, a consulting firm specializing in energy and environmental policy development, strategy and education. I hold a BS degree in Environmental Earth Science. I have participated extensively in regional and local stakeholder processes and policy forums as an expert in renewable and energy efficiency and spent 10 years writing and lobbying for energy legislation. For the past four years I have represented a variety of organizations on wind development and policy issues include private developers, the federal government and educational organizations.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony discusses three topics:

- Addition of an independent expert in future Request for Proposal (RFP) processes for renewable energy resources to ensure fair assignment of costs and review of bids.
- Implementing a solicitation schedule for near-term purchase of renewable energy.
- Developing a performance-based incentive structure for clean energy resource acquisition.

A. WILL YOU BE ADDRESSING ISSUES RELATED TO WIND ENERGY OR ALL RENEWABLE ENERGY RESOURCES?

Q. My testimony relates largely to wind energy development. However, Interwest believes that diversity of resources is important and recognizes that renewable energy resources have different characteristics and bring various benefits to the market. Interwest has found that it is best for consumers if all renewable energy technologies are allowed to compete and to allow utilities to choose the resource that best fits their needs.

INDEPENDENT EVALUATOR

Q. WHY INCLUDE AN INDEPENDENT EVALUATOR WITH RENEWABLE ENERGY EXPERIENCE FOR RFP PROCESSES THAT WILL PROCURE RENEWABLE ENERGY?

A. Interwest believes that when APS evaluated renewable energy in its 2005 RFP process, it attributed a higher than necessary integration cost to wind energy projects, which has resulted in projects not being considered for purchase. To ensure a more fair assignment of such costs, Interwest proposes that APS include in any renewable energy bid evaluation process an independent evaluator that has direct experience with wind and other renewable energy resources. This person may be chosen by the Commission and report to the Commission.

Q. CAN YOU PLEASE SITE AN EXAMPLE OF INAPPROPRIATE COSTS?

A. Please refer to a copy of Mr. Jack Davis' letter of July 19, 2006 to Commissioner Kris Mayes filed in this docket. In that letter Mr. Davis states that the company added a spinning reserve charge of $10 - $20 per MWh for wind projects evaluated in the 2005 renewables RFP. He further states that the company did not assess any ancillary service charge or imbalance penalties to the wind projects in question.

Ancillary services charges are the costs incurred by a utility to integrate the output from a wind project into their system. In the electric industry ancillary services includes the cost of regulation, load following and unit commitment. These categories correspond to second to minute resource needs, minute to hour and day ahead, respectively. The spinning reserve charge to which Mr. Davis refers is typically included in regulation costs. Regulation costs are a subset of ancillary services costs.

Utilities, other than APS, have conducted a number of recent studies in order to determine the projected cost of ancillary services (including spinning reserves) resulting from wind on their system. The National Renewable Energy Laboratory study *Grid Impacts of Wind Power Variability - Recent Assessments from a Variety of Utilities in the United States* compiled these results[1]. The following chart, from a recent presentation given at the Southwest Renewable Energy Conference, reflects these results:

Comparison of Cost-Based U.S. Operational Impact Studies

Date	Study	Wind Capacity Penetration (%)	Regulation Cost ($/MWh)	Load Following Cost ($/MWh)	Unit Commitment Cost ($/MWh)	Gas Supply Cost ($/MWh)	Total Operating Cost Impact ($/MWh)
May '03	Xcel-UWIG	3.5	0	0.41	1.44	na	1.85
Sep '04	Xcel-MNDOC	15	0.23	na	4.37	na	4.60
July '04	CA RPS Phase III	4	0.46	na	na	na	na
June '03	We Energies	4	1.12	0.09	0.69	na	1.90
June '03	We Energies	29	1.02	0.15	1.75	na	2.92
2005	PacifiCorp	20	0	1.6	3.0	na	4.60
April '06	Xcel-PSCo	10	0.20	na	2.26	1.26	3.72
April '06	Xcel-PSCo	15(1)	0.20	na	3.32	1.45	4.97

(1) Xcel is also working on a study of 20% wind penetration but preliminary results presented were withdrawn by the utility due to a wind forecast calculation error.

National Renewable Energy Laboratory, Brian Parsons & Michael Milligan, *Grid Impacts of Wind Power Variability: Recent Assessments from a Variety of Utilities in the United States*, August 3, 2006

The highest cost for wind integration from these studies is projected to be $4.97 per MWh. This cost includes all integration costs not just the regulation or the spinning reserve components. The projected cost of $4.97 is based on a wind penetration rate of 15 percent on Xcel's Colorado system which is roughly similar to the APS system. The wind projects that were bid into the APS RFP, that were not purchased, were less than 100 MW which would be less than 2% of APS' generation.[2] Yet, APS assigned a cost of $10-20 per MWh. At system penetration rates of less than 5%, Xcel projected a cost of $1.85/MWh, and Wisconsin Energy found an integration impact of $1.90/MWh at a 15% penetration rate. APS has assigned a cost that is at least double

[1] National Renewable Energy Laboratory, Brian Parsons & Michael Milligan, *Grid Impacts of Wind Power Variability: Recent Assessments from a Variety of Utilities in the United States*, August 3, 2006

[2] Based on a rough calculation of a 5000 MW service territory and a 100 MW wind project.

the cost found at any penetration rate by any US utility, and more than 10 times the cost actually incurred by utilities with similar penetration rates.

Q. HOW WERE THE APS SPINNING RESERVE CHARGES CALCULATED?

A. In a response to a data request by Western Resource Advocates (WRA5-2) Patrick Dinkel of APS explained that they "applied a one standard deviation to the generation data. The resulting calculation was approximately 25% of the nameplate rating of the wind project." This figure (25%) was then loaded into the PROMOD IV model which produced a cost of $10-20 per MWh.

Q. IS THIS CALCULATION METHODOLOGY REASONABLE?

A. No, this methodology is invalid because energy from a wind plant cannot be treated in isolation from the remaining systems. The methodology employs an unrealistic assumption of needing 25% of nameplate as spinning reserves. By choosing a figure of 25% for a wind project with a capacity factor of 25-30%, the utility assumed that they needed to back up (through spinning reserves) each and every MWh of wind energy on their system. Stated another way, a 100 MW wind project that produces on average 25-30% of its nameplate capacity has a 25 -30% capacity factor. APS estimates that their 5,000 MW system needs 25MWs of back up for a project that would produce an average of 25-30 MWH over the course of a year – essentially a one-for-one back up. This method also assumes the wind component of reserve is also needed even when the wind is not blowing.

The need to have a one-for-one backup for a variable resource such as wind was commonly asserted in the early days of wind development. However, it has been conclusively demonstrated to be incorrect. The actual experience with wind in California and elsewhere in the U.S. has proven that "one-for-one backup" overstates the real impact on spinning reserves by over an order of magnitude. APS operates a relatively large (5,000+ MW) dynamic system which routinely experiences significant variation in both generation and loads. The system is designed to smoothly and cheaply react to these individual load and resource variations. Because the short-term fluctuations in output of a wind project of 100 MW, or less than 2% of the system's capacity, are essentially random and not correlated with the fluctuations of other loads and resources, their impact is not additive. A fundamental reason why modern electric grids are as large as they are is to take advantage of this "portfolio effect."

To address spinning reserves and other integration issues, the Utility Wind Integration Group, composed of over 70 US utility companies, in association with the American Public Power Association, the Edison Electric Institute, and the National Rural Electric Cooperative Association produced a report this year called *Utility Wind Integration State of the Art.* This report summarizes the most current information on the impacts of wind. The study states "On the cost side, at wind penetrations of *up to*

20% of peak system demand, system operating costs arising from wind" variability and uncertainly amounted to about 10% or less of the wholesale value of the wind energy.[3] (emphasis added) Assuming $70 per MWh operating costs, then the proper integration cost would be less than $7/MWh, which is far less than the $10-20 used by APS. The 10% maximum number is not mentioned here to be definitive, but to illustrate the magnitude of the difference between costs quantified as a result of studies conducted by utilities with actual experience with wind generation in their systems and the assumed costs applied by APS. We believe the data justifies the need for an experienced independent evaluator for future project bids.

Q. WHAT WOULD THE INDEPENDENT EVALUATOR REVIEW?

A. When conducting the review of renewable energy bids, the evaluator should look at the two primary categories; first, what additional cost(s) is the utility adding to the price of a bid (e.g., spinning reserve charges), and what value is the company using for a reference price for conventional resources. Assuming APS will evaluate renewable energy bids in part based on fossil fuel generation costs, it is critical to ensure that the reference price for conventional generation resources is accurate.

In Decision No. 6774 APS was required to purchase 100 MWs of renewable energy but only if the price of renewable energy was no more than 125% of the market price of conventional resources. The price chosen as the 125% was critical to the outcome of the bid process. The Independent Evaluator should provide input on calculating the market (or reference) price.

Q. ARE THERE OTHER REASONS AN INDEPENDENT EVALUATOR IS NECESSARY?

A. Renewable energy resources are significantly different from the conventional fossil fuel generation that APS has relied upon in the past. In addition, renewable energy technology is rapidly changing and evolving to meet the needs of the utility industry. An expert in renewable energy systems would provide the Commission and APS with up-to-date expertise that can be used to evaluate bids and the bid evaluation process to ensure that the process is fair as possible.

Q. DO YOU HAVE ANY OTHER COMMENTS?

A. Yes. Wind energy is the fastest growing segment of renewable energy industry. Worldwide more than 50,000 MW have been installed.[4] Wind resources have been successfully incorporated in neighboring utility systems in N.M., Colorado and California giving utilities in these states valuable experience. As a result of the 2005

[3] Utility Wind Integration Group, American Public Power Association, Edison Electric Institute, National Rural Electric Cooperative Association, *Utility Wind Integration State of the Art,* May 2006, page 1. http://www.uwig.org/UWIGWindIntegration052006.pdf

[4] Utility Wind Integration Group, May 2006. *Utility Wind Integration State of the Art,* page 1.

RFP process, APS purchased a wind project from New Mexico, and in 2004 purchased 15 MW from a project in the Kingman area. However, these projects have not yet come on line; thus APS has no direct experience with interconnecting, scheduling and monitoring wind systems. One of the benefits of the Environmental Portfolio Standard (EPS) is the expertise APS has gained in solar energy. Interwest believes that APS should embark on a similar learning curve with wind energy. An independent evaluator will provide critical expertise to the utility that it does not possess at the present time.

REGULARLY SCHEDULED SOLICITATIONS FOR RENEWABLE ENERGY

Q. WHAT IS THE RATIONALE FOR REQUIRING RPFs FOR KNOWN AMOUNTS OF RENEWABLE ENERGY AT REGULAR INTERVALS?

A. Unlike many other states, Arizona has no Integrated Resource Planning Process (IRP) for regulated utilities. For renewable energy providers an IRP provides two important sources of information: 1) it details the long term plans for a utility so generation providers can determine the future potential market, and 2) it provides publicly available cost comparisons of technology.

Currently a renewable energy provider interested in the Arizona market can review information related to the Environmental Portfolio Standard and the potential Renewable Energy Standard and Tariff (REST) to assess the amount of energy necessary for compliance, but there is no information available on when and how supplies might be procured, and which type of resources are being considered or preferred.

Q. WHAT SCHEDULE IS INTERWEST PROPOSING?

A. We are proposing that APS solicit for 150 MW of renewable energy generation in years 2007, 2009 and 2011. This would translate to approximately 25% of the needed new generation between 2007 and 2012. APS would use a competitive request for proposal process such as the 2005 renewables RFP process to receive bids for evaluation.

Q. WHY IS USING AN RFP PROCESS IMPORTANT?

A. An RFP process is important because it is a competitive process. Competitive processes tend to drive down prices as technologies compete. A broad-based solicitation for all renewable energy resources will provide the utility with a variety of resources to match their resource needs. Solicitations are also good for determining the breadth of projects available in the region. The wind industry, like many other industries, is highly competitive and keeps project development information confidential until a solicitation asks for bids.

Q. WHY SHOULD APS ACCELERATE PURCHASE OF RENEWABLE ENERGY RESOURCES BEYOND THE CURRENT EPS OR THE PROPOSED RENEWABLE ENERGY STANDARD AND TARIFF?

A. There are three primary reasons APS should accelerate acquisition and procure 450 MW of renewable energy in the next six years. First, renewable energy resources are stably priced; next, renewable energy resources are not subject to the cost of environmental air regulations and are not vulnerable to changes in or addition of new environmental regulation; and the price stability of renewable energy it less costly to consumers in the long run.

Q. HOW DOES STABLY PRICED GENERATION BENEFIT RATEPAYERS?

A. APS ratepayers would benefit from the increased purchase of electricity generated from renewable energy resources because renewable energy is not subject to fluctuation in fuel prices. In all cases, except biomass, no fuel needs to be purchased, so there is no cost for fuel.

Recently Arizona and the U.S. have seen dramatic increases in fossil fuel prices. As a result of dramatic increases in the price of natural gas the Commission approved a Power Supply Adjustment (PSA) for fuel and purchase power costs. One purpose of the PSA is to allow the utility a flexible mechanism to recover fuel price increases and the cost of purchased power, and to be able to pass fluctuating costs on to consumers expediently.

In Mr. Don Robinson's direct testimony he states "between 1991….and 2006, APS' energy needs from gas-fired generating facilities and purchased power will increase from 9% to approximately 29%. As a result, gas and purchased power will constitute nearly 70% of the Company's total fuel and purchased power expenses by 2006."[5] This high reliance on natural gas-fired generation and volatility of natural gas markets subjects Arizona consumers to market price fluctuation.

It is interesting to note that Mr. Robinson in his testimony also states "In the recent Request for Proposal ("RFP'') that was held pursuant to Decision No. 67744 to seek at least 1000 MW of new long-term generation supply beginning in 2007, *no bidder was willing to accept the risk of gas price volatility"* [6] (emphasis added). It is unnecessary and not prudent to increase ratepayer's exposure to that risk.

Unlike natural-gas-fired generation, the cost of energy from a renewable energy project is known from the first day of operation, and those costs do not change. If a wind project is purchased at 60$/MWh in 2007, the price for power will be 60$/MWh in 2017 and 2027 (with adjustments for inflation). Few, if any, commodities in our

[5] Direct Testimony of Don Robinson, Page 13, lines 6-11.
[6] Direct Testimony of Don Robinson, Page 13, lines 19-22.

society can provide such price certainly. This price stability is a driver for the growing global interest in and development of wind and other renewable energy resources.

Q. CAN YOU EXPAND ON HOW THE COST OF ENVIRONMENTAL REGULATION AFFECTS RATEPAYER?

A. Yes. Another significant benefit of renewable energy to consumers relates to air emissions. Because wind energy generation produces no air emission and other renewable energy resources emit few, if any, emissions that are regulated by state and federal agencies, ratepayers are not saddled with the current or future cost of emissions control and reduction.

In Mr. Ed Fox's testimony[7] he discusses the types of air emissions that are regulated from coal-fired generation. These include sulfur dioxide, nitrogen oxides, particulate matter and mercury. Each of these pollutants requires unique emissions control equipment, and controlling the release of each of these emissions has a cost. APS is requesting an Environmental Improvement Charge (EIC) which, as proposed, would levy a charge of $0.000152 per KWh[8] on most classes of customers. The expected cost for emission control for a single power plant, Cholla, is expected to cost consumers $135 million in the next few years. [9] The EIC, if approved, is expected to be used for clean up of other emissions associated with coal-fired generation. The goal of cleaning up emissions from existing coal-fired power plants is imperative for human health, but use of coal will continue to represent a significant on-going environmental burden for ratepayers.

Q. IS APS EXPECTING TO ADD MORE COAL-FIRED GENERATION IN THE FUTURE?

A. Yes. In its project proposal to build the Transwest Express Transmission line APS is evaluating bring up to 3,000 MW of generation from Wyoming to Arizona. The project is proposing to tap coal and wind resources from Wyoming. The amount of wind energy and the type of coal technology to be built have not been specified, so it is difficult to assess the potential emissions that will need to be captured. However, new plants are subject to the same if not more stringent air emissions requirements which incurs a cost for Arizona ratepayers.

Q. ARE THERE OTHER POLLUTANTS THAT MAY BE REGULATED IN THE FUTURE?

A. Yes, the biggest wild card in the future is how the state and the nation will deal with carbon dioxide, a greenhouse gas. The timeline and type of regulation including

[7] Direct Testimony of Ed Fox, Pages 10-12.
[8] Direct Testimony of Greg Delizio, Page 2, line 8.
[9] Direct Testimony of Ed Fox, Page 12, lines 15 & 16.

potential carbon taxes on carbon dioxide is uncertain, but most in the power industry believe that carbon will be a regulated commodity in the future. APS states that there is an "increased probability"[10] that carbon dioxide will be regulated. Since coal-fired power plants can last from 30 to 50 years it is likely that any existing or new plant may be subject to carbon dioxide regulation taxation and the cost of compliance associated with regulation.

Q. WHY DO YOU BELIEVE RENEWABLE ENERGY RESOURCES WILL COST CONSUMERS LESS THEN COAL OR OTHER SOURCES OF FOSSIL FUEL?

A. If one looks at the total life cycle cost (capital cost, operation and maintenance and fuel) of renewable energy versus conventional energy, renewable energy will likely be cheaper over the life of the project. Renewable energy projects are capital-intensive with all costs but operation and maintenance being up-front costs. Initial costs for renewable energy projects may be more expensive compared to bids for conventional fuels. However, if the full project cost, including capital, O & M and fuel costs of a generation sources is included, the price of fossil fuel generation can change substantially.

It is common in the energy sector to look only at initial purchase price of the commodity and not take into account other factors that influence the ultimate price of the commodity, such as fuel costs. In this rate case APS is requesting an EIC for emissions control that was not included in the initial cost of coal projects when they were first constructed. Additionally, APS now needs the PSA because fiscal impacts of natural gas price fluctuations were not anticipated when plants were built or power purchased. Emissions control, which falls under operation and maintenance, and the EIC, which falls under fuel costs, are part of the life cycle cost of coal and natural gas generation whether or not they are reflected in APS' request. With renewable energy these costs are not variable.

As an example, if the $135 million needed for emissions control was added to the price of energy from the Cholla power plant, instead of charged as an emissions control cost to ratepayers, the price of energy from that power plant would be significantly higher.

For completed projects the cost of energy from renewable energy projects is not subject to unpredictable forces such as changes in supply and demand for fuel which affect price. The cost of energy from renewable energy projects is not subject to changes due to modifications of current regulations or adoption of new local, state or national air regulations. As demand increases, price will increase unless there is sufficient supply. Global demand for all fossil fuels has increased, including for natural gas. Meeting Arizona's electricity needs will likely be more costly as supplies become more constricted.

[10] Direct Testimony of Ed Fox, Page 9, line 21.

Q. SHOULD THE PURCHASE OF 450 MW OF RENEWABLE ENERGY IN THE NEXT SIX YEARS BE IN LIEU OF THE PROPOSED REST?

A. No, the REST sets out a long term schedule for the procurement of renewable energy resources and results in utilities producing at least 15% of their electric sales from renewable energy generation by 2025. This standard is important because it sets a floor or minimum for renewable energy procurement and provides policy direction to electricity utilities to begin purchasing renewable energy. The REST, as proposed, also instructs utilities to develop distributed resources that are not covered by this testimony. While purchasing 450MW of renewable energy in the next six years is complementary to the REST, the primary purpose is to avoid additional costs to ratepayers as a result of fuel fluctuation and environmental compliance that will result from the purchase of more fossil fuels.

COLLABORATIVE PROCESS TO DEVELOP PERFORMANCE-BASED INCENTIVES

Q.WHAT ARE PERFORMANCE-BASED INCENTIVES?

A. Performance-based incentives provide a financial or non-monetary reward for achieving a certain outcome. Financial incentive can be a stimulus to achieve a renewable energy or energy efficiency goal or specific level of energy conserved or generation from a renewable energy resource.

Q. WHY SHOULD THE COMMISSION CONSIDER DEVELOPING A PERFORMANCE BASED INCENTIVE SYSTEM FOR CLEAN ENERGY RESOURCES?

A. The current system provides no incentives for APS to purchase clean energy resources or comply with the Environmental Portfolio Standards. Electric utilities have operated the same way, and at about the same level of efficiency, for decades. The job of an Investor-Owned Utility (IOUs) is to make money for their shareholders by providing reliable electric service. Historically, IOUs have made large capital investments in power plants and/or transmission lines, and in return, the regulatory agency grants them a rate of return on their investment. While this system has worked well in the past for large capital investments, the system does not provide financial incentives for the purchase of renewable energy or the conservation of energy through energy efficiency.

As the regulatory environment is currently structured APS is required by Commission Decision No. 67744 and the Environmental Portfolio Standard rules Decisions No. 63486 & Decision No. 63364 to purchase renewable energy. The company does not make a profit on the sale of this electricity. While the amount of renewable energy purchased by APS to date is small, there is an expectation that the amount of renewable energy the company will purchase will grow. APS is a for-profit

company, but they are not allowed to make a profit on the sale of renewable energy. Thus, there is no internal financial incentive for the company to meet or exceed set goals or standards.[11]

If the Commission sees a value in the utility diversifying its generation resources, conserving natural resources and adding clean energy resources then the Commission may want to consider establishing financial incentives.

Q. CAN YOU GIVE A SPECIFIC EXAMPLE?

A. Yes. An incentive could be developed to reward APS for adding renewable energy generation to its portfolio. If APS purchased the total of 450 MW proposed in this testimony, the utility could be allowed to recover from ratepayers a small per KWh assessment. The incentive could be designed to stimulate certain action such as early procurement of renewable energy resources or purchase of Arizona renewable energy resources. The incentive would not be given for compliance with an established program, but provides an incentive for early adoption and/or surpassing the standard.

Q. WHY WOULD THE COMMISSION WANT TO PROVIDE SUCH AN INCENTIVE?

A. The Commission has the difficult job of balancing the immediate financial needs of APS with the longer-term best interest of the public. Because of supply and price concerns, water availability issues, and environmental considerations, utilities around the country are seeking, or being directed to procure, more renewable energy resources. There resources are not well known to Arizona's electric utilities and the institutional inertia is to resist any substantive change. This is especially true if the new activity (purchasing renewable energy resources) provides no profit. Providing an incentive will create a "carrot" for the utility to exceed the standard. Without a financial incentive it is not in the best interest of the utility shareholder to change from their traditional pattern of building or purchasing fossil fuel resources.

Q. HOW DO YOU PROPOSE TO DEVELOP THE APPROPRIATE LEVEL OF INCENTIVE?

A. Interwest proposes using a stakeholder group and collaborative process to develop possible incentives. The process would be lead by APS and would present recommendations to Commission staff and Commissioners. The process should take no more than 9 months. The stakeholder group should include representatives from APS, renewable energy technologies, consumer and clean energy advocacy groups,

[11] While a profit is not allowed for sale of renewable energy APS could be subject to penalties for not meeting the provisions of Decision No. 6774. There are no penalty provisions in the Environmental Portfolio Standard rules. The proposed Renewable Energy Standard and Tariff has penalty provisions as currently drafted.

the Residential Utility Consumer Office, small, medium and large customer classes and commission staff.

The group should be tasked with

- reviewing incentives provided in other states to utilities for energy efficiency, demand side management and conservation programs and development of renewable energy resources,
- reviewing policies that decouple utility rates from energy sales,
- analyzing and documenting the impact of any proposed incentive on ratepayers,
- evaluating the impact of an incentive on meeting or exceeding renewable energy or conservation and efficiency requirements, and
- making specific recommendations on the type and amount of incentives to be considered by the commission.

Recommendations should be submitted to the Commission by October 1, 2007 for consideration.

Q. WOULDN'T IT BE BETTER TO WAIT A FEW YEARS TO SEE HOW COMPLIANCE WITH RENEWABLE ENERGY AND ENERGY EFFICIENCY PROGRAMS ARE PROGRESSING BEFORE CREATING AN INCENTIVE?

A. No, the electric utility industry is at a critical juncture. Over the past 15 years electric utilities have transitioned from coal-fired generation to cleaner, more efficient natural gas-fired turbines. However, with recent volatility and increases in the price of natural gas and supply concerns utilities are not planning on building more natural gas generation. Instead, APS and many western utilities are planning to return to coal as their primary generation source to meet load growth. Currently, there are about 14,000 MW of coal project in various stages of construction in the Interior West.[12] APS is planning on purchasing up to 3,000 MW of coal via just the Transwest Express Line.[13]

While coal is abundant it is the most polluting fossil fuel. The negative consequences from coal use include land and water impact from extraction, mercury emissions and the associated effect on human health, bioaccumulation in animals and humans and pollution of water sources, air emission such as NOx, SOx and particulates and large consumptive use of scarce water resources.

There are a substantive number of recent government and privately funded reports that document the benefits and availability of renewable energy resources and cost

[12] Environmental Defense, Western Resource Advocates & Center for Energy Efficiency and Renewable Energy Technologies, *Clearing California's Coal Shadow from the American West,* Executive Summary, Page vii., 2005

[13] Peter Krzykos, Arizona Public Service Company, *Transmission Feasibility Study Interim Report,* PowerPoint presentation, Slide 1. (not dated)

effective energy efficiency measures.[14] These reports substantiate the vast amount of potential to conserve energy and avoid building new generation and transmission and the tremendous abundance of renewable energy resources that can be tapped throughout the Interior West to meet Arizona's load growth.

Developing renewable energy resources should be pursued as aggressively as possible. Building a new fleet of pulverized coal plants is a step backwards to a 50-year-old technology that has been largely rejected due to coal's negative attributes. Moving expediently to renewable energy and energy efficiency is a step into the future and to technologies which will not saddle ratepayers with the costs of fuel price increases, air emissions regulations, water use restrictions and carbon regulation. Developing an incentive to help spur action by APS is in the best interest of the state and APS' ratepayers.

SUMMARY OF RECOMMENDATIONS

Q. WILL YOU SUMMARIZE YOUR RECOMMENDATIONS?

A. Yes. Interwest is recommending that an independent evaluator be included in any future APS RFPs for renewable energy to ensure a fair assignment of ancillary service and integration costs, fair determination of a market reference price and a fair evaluation process. The evaluator is necessary because APS, in their 2005 RFP, added costs to wind projects that were double the amount charged by experienced utilities. An independent evaluator will provide expertise to the utility and Commission on renewable energy generation sources.

We are recommending that APS be required to bid for 150MW of renewable energy in 2007, 2009 and 2011 to reduce long-term cost impacts on ratepayers. The regularly scheduled bids will provide notice to the industry for project development and use of an all renewable source RFP will create a competitive process to drive down prices. Greater procurement of renewable energy resources will protect consumers from short- and long-term fuel price increases and current and expected future emissions regulations.

[14] --Western Governors' Association, *Clean Energy, a Strong Economy and a Healthy Environment,* June 2006, www.westgov.org/wga/meetings/am2006/CDEAC06.pdf
--Western Resource Advocates, *A Balanced Energy Plan for the Interior West,* 2004, www.westernresourceadvocates.org/energy/bep.php
--California Energy Commission's *Renewable Resources Development Report,* November 2003 http://energy.ca.gov/reports/2003-11-24_500-03-080F.PDF
--Western Regional Air Partnership Air Pollution Prevention Forum, *Economic Assessment of Implementing the 10/20 Goals [10% renewable energy by 2005 and 20% by 2015] and Energy Efficiency Recommendations*, October, 2002, http://www.wrapair.org/forums/ap2/docs.html
--Western Regional Air Partnership, *Recommendations of the AP2 Forum to Increase the Generation of Electricity from Renewable Sources,* June 2000 http://www.wrapair.org/forums/ap2/docs.html

Interwest is also recommending that a collaborative stakeholder process be used to evaluate and develop performance-based incentives and review decoupling of rates from electricity sales that will encourage APS to procure clean energy resources because it is financially beneficial for their shareholders. This stimulus is intended to change the current dynamic of resisting procurement or purchase of renewable energy because the utility does not earn a rate of return on the sale of electricity generated from renewable energy resources.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

Exhibit AO-1

Qualifications of Amanda Ormond

WORK EXPERIENCE

The Ormond Group

Consulting firm specializing in energy and environmental policy development, strategy and education.
Principal, 2/01 - Present

Arizona Department of Commerce

Energy Director, 2/95 – 1/01
Manager, Community Energy Programs, 9/93 - 2/95
Energy & Environmental Planner III, 7/91 - 9/93
Community Energy Planner II, 7/88 - 7/91
Community Energy Planner I, 7/87 - 7/88

Gutierrez-Palemberg, Inc.

Environmental Planner/Quality Control Officer 2/85 - 7/87

EDUCATION

Bachelor of Science, Environmental Earth Science, 1983

Mary Washington College, Fredericksburg, Virginia
University of New Orleans, Innsbruck, Austria

QUALIFICATIONS AND SELECTED RELEVANT PROJECTS

Amanda Ormond has worked in Arizona in the energy and environmental field for 20 years. She has participated extensively in regional and local stakeholder processes and policy forums as an expert in renewable and energy efficiency and spent 10 years writing and lobbying for energy legislation. She has represented the wind industry for four years. Current clients include Interwest Energy Alliance, Southwest Windpower, Northern Arizona University, U.S. Department of Energy –Wind Powering America Program and the Grand Canyon Trust.

Western Governors' Association Clean and Diversified Energy Initiative, Energy Efficiency Task Force Member. Lead a subcommittee to develop recommendations on regional coordination for energy efficiency efforts, wrote a portion of the final report and participated as group member.

National Renewable Energy Laboratory, Technical Resource and Outreach Coordinator for Wind Powering America Program. Design and deploy educational outreach programs for tribal, small wind and utility-scale wind resources. Build awareness of wind energy resource potential among agricultural and ranching interests, utilities, local and state officials and other stakeholders. Work on barrier reduction for development of wind projects in Arizona.

Arizona Regional Haze State Implementation Plan (SIP) Pollution Prevention Work Group Subcommittee Member. Represented four environmental and efficiency organizations in an Arizona Department of Environmental Quality stakeholder process to develop the state's 2003 SIP for Regional Haze. Served on the Pollution Prevention Work Group that made recommendations to the department on the energy efficiency and renewable energy portions of the SIP.

Interwest Energy Alliance, Southwestern Representative. Serve as Southwest Representative for 501(c)(6) wind and renewable energy trade association. Represent the trade organization before the Arizona Corporation Commission on all aspect of wind energy development. Serve on ACC technical working groups related to the design and development of a portfolio standard. Provide direct testimony and file comments on proposals and rules.

Western Governors' Association, Air Pollution Prevention Forum, Member. Served on Western Regional Air Partnership's forum which analyzed the potential for energy efficiency and renewable energy measures to reduce regional haze emissions. Reports and recommendations were made to the Western Governors' Association and were used as the basis of State Implementation Plans for Regional Haze in the Western U.S.

Arizona Wind Working Group, Manager. Created and manage the state's wind working group for Northern Arizona University and the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Wind Powering America Program.

Southwest Renewable Energy Conference (SWREC), Conference Director. Co-founder and conference director for the SWREC, a policy and technical conference on developing renewable energy resources in the West. Northern Arizona University is the primary sponsor.

Recommendations of the Western Regional Air Partnership's Air Pollution Prevention Forum to Increase the Use of Energy Efficiency on Native American Lands, June 2002 Co-author for Western Regional Air Partnership. Served as a team member on development of an energy efficiency report for Native American tribes. Conducted site visits to develop case studies of tribes in western U.S., developed recommendations and contributed to the report.