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BEFORE THE ARIZONA CORPORATION COMMISSION

WILLIAM A. MUNDELL
Chairman
JIM IRVIN
Commissioner
MARC SPITZER
Commissioner

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AZ CORP COMMISSION
DOCUMENT CONTROL

IN THE MATTER OF THE GENERIC PROCEEDINGS CONCERNING ELECTRIC RESTRUCTURING ISSUES)))	Docket No. E-00000A-02-0051
IN THE MATTER OF ARIZONA PUBLIC SERVICE COMPANY'S REQUEST FOR A VARIANCE OF CERTAIN REQUIREMENTS OF A.A.C. R14-2-1606))))	Docket No. E-01345A-01-0822
IN THE MATTER OF THE GENERIC PROCEEDINGS CONCERNING THE ARIZONA INDEPENDENT SCHEDULING ADMINISTRATOR))))	Docket No. E-00000A-01-0630
IN THE MATTER OF TUCSON ELECTRIC POWER COMPANY'S APPLICATION FOR A VARIANCE OF CERTAIN ELECTRIC COMPETITION RULES COMPLIANCE DATES))))	Docket No. E-01933A-02-0069
IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS STRANDED COST RECOVERY))))	Docket No. E-01933A-98-0471

LAND AND WATER FUND OF THE ROCKIES
RESPONSES TO COMMISSIONERS' QUESTIONS ON ELECTRIC COMPETITION

February 25, 2002

Arizona Corporation Commission

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FEBRUARY 25, 2002

BACKGROUND

On January 14, 2002, Commissioner Mundell docketed a letter in which he stated that "... it is necessary to determine if changed circumstances require the Commission to take another look at electric restructuring in Arizona." He attached a set of questions to the letter aimed at providing information to assist the Commission's review of competition issues and on January 30, 2002 issued supplemental questions. On January 22, 2002, Commissioner Spitzer docketed questions regarding environmental aspects of retail electric competition in Arizona. On February 7, 2002, Commissioner Irvin docketed several questions as well.

The Land and Water Fund of the Rockies' (LAW Fund's) responses to selected questions are set forth below. The LAW Fund is responding only to those questions where it has special expertise. Questions bearing on related issues are grouped together so that the responses are not repetitive.

The LAW Fund appreciates the opportunity to provide information to the Commission on these critical issues. The Commission is a nationally recognized leader in promoting renewable energy, through the Environmental Portfolio Standard, and in balancing the environmental impacts of new electric generation facilities with the need for those facilities, through its review of applications for Certificates of Environmental Compatibility. At this time, the Commission has the opportunity to examine competition issues in light of the benefits of renewable energy, cost-effective demand side management, energy efficiency, and distributed generation and to steer the course that will benefit all of Arizona over the long run.

RESPONSES TO COMMISSIONER MUNDELL'S QUESTIONS

Question I. A. 1. and 3. *What are the possible goods and services traditionally provided by the electric utility for which retail competition is possible? You may address the following categories of goods and services: ... green power,, demand side management, [and] energy efficiency....*

- A. Utilities in Arizona have offered green power and demand side management (DSM) services. In theory, these services could be offered competitively and some are offered competitively today. DSM for large commercial and industrial consumers is offered competitively by energy service companies. However, competitive provision of DSM for residential and smaller commercial and industrial consumers has been only marginally viable in the absence of supporting utility DSM programs. The transaction costs of selling DSM services to small consumers are very high relative

to the profits which can be made selling more efficient lighting, more efficient motors, more efficient space cooling appliances, shade trees, insulation, etc. Further, many consumers are not well educated on energy efficiency so that they can make conscious trade offs between capital costs and long term savings. The education problem is compounded by the perceived risk that the energy savings may not be real.

Similarly, green power programs could be offered competitively and competitive green power has been sold in states with active retail electric competition. However, much of that green power is derived from existing hydropower, geothermal or biomass projects rather than from new renewable energy power plants. Consumers' willingness to pay for renewable energy may not cover the costs of the more expensive renewable energy technologies, thereby restricting deployment of those technologies. The costs need to be recovered from more consumers than just those who want green energy and the competitive market alone cannot assure such cost recovery.

In conclusion, the ability of competition to foster DSM, energy efficiency, and green power is at best marginal. Relying solely on a competitive market to deploy cost effective DSM and renewable energy projects at this time will probably slow the progress made on DSM and renewable energy through regulatory intervention.

Question III. F. *How does current Commission regulation promote or deter the ability of (1) renewables, (2) distributed generation, and (3) energy efficiency and demand side management to compete with traditional generation resources?*

- A. Current Commission regulation generally promotes the development of renewable energy resources through the Environmental Portfolio Standard (EPS).¹ This policy is or should be independent of the continuation, delay, or abandonment of retail electric competition. If the Commission decides to suspend retail electric competition, the EPS should remain in place. As will be discussed in our response to Commissioner Spitzer's questions 1-6, it is possible to pursue a renewable portfolio standard with or without retail electric competition. The Corporation Commission's authority to regulate public service corporations (AZ Constitution, Article 15, § 3) so as to require a renewable portfolio standard is not restricted by whether the Commission does or does not pursue a policy of retail electric competition.

As a result of the EPS, the LAW Fund expects that significant renewable energy generation capacity will be deployed and that this deployment will give the renewable energy industry the opportunity to pursue economies of scale and new technologies in the manufacture and installation of renewable generation equipment. Further, the EPS increases the options available to consumers to support

¹ A.A.C. R-14-2-1618.

environmentally friendly power generation, avoids air emissions that would otherwise be produced by conventional generation of electricity, and encourages Arizona manufacturing and assembly of renewable energy generation equipment.

Several aspects of the Commission's regulation do deter renewable energy, however. First, buy-back rates paid to qualifying facilities are inappropriately low. At present, the avoided costs used to set buy-back rates are predicated on avoided conventional generation costs (about \$0.03 per kWh). But energy produced by qualifying facilities eligible under the EPS enables the utility to avoid obtaining renewable energy from resources required to meet the EPS. Utilities must meet 50 to 60 percent of their EPS requirements from solar generation of electricity. The required solar electricity can be produced by the utility or purchased by the utility. A buy-back rate reflecting the market cost of generating electricity from solar electric facilities is, therefore, appropriate. That is, the avoided costs for electricity produced by photovoltaics and other eligible technologies need to reflect the costs of those technologies in meeting EPS requirements, not the costs of conventional generation which cannot be used by the utility to meet the EPS requirements. For solar electricity produced from photovoltaics, the avoided generation costs are about \$0.30 per kWh. The Commission should review all tariffs with buy-back rates for energy derived from eligible technologies within the next three months and require utilities to interpret avoided cost in these cases as the cost of meeting the EPS requirement with eligible technologies.

Second, in addition to fixing the buy-back rate, the Commission should ensure that the utilities have uniform net metering tariffs and implement them properly. These tariffs apply to consumer owned qualifying facilities and indicate how the utility will measure excess energy produced by the consumer from photovoltaics or other qualifying facilities that feeds back into the grid and how the utility will measure and charge for energy purchased from the utility. Ideally, the net metering tariffs should require bi-directional meters. Net metering provisions depend on buy-back rates and the two issues should be reviewed simultaneously.²

With regard to distributed generation, the Commission's current policies may need revision to promote distributed generation. In particular, the Commission may need

² The competitive environment is about customer choice. Commission and utility policies and practices should encourage grassroots energy resource options such as small-scale renewable energy. The Commission must avoid increasing the transaction costs of small scale renewable energy to the point of killing this important market. Net metering (allowing the meter to run backwards) is the low-cost and simple solution to encouraging renewable resources. Moreover, 29 states have sponsored net metering programs (two are in the proposal stage). Nearly all states limit the size of the generator subject to net metering to 100 kW, with about one-fourth limited to under 10 kW. Perhaps the key net metering policy issue is the treatment of excess generation, i.e., generation that exceeds the load of the host facility. There are two broad categories of treatment. The first involves reconciliation of any excess generation at the end of each monthly billing cycle. The second allows excess generation credits to be carried forward to offset energy consumption in the following month, with reconciliation occurring at the end of a twelve month period to allow for seasonal variations.

to provide direction to distribution utilities to provide interconnection rules that protect grid reliability and worker safety without imposing barriers to distributed generation such as extreme insurance requirements or extended periods for review of plans to install distributed generation. The Commission should direct Staff to review current utility interconnection policies, conduct a public workshop on the issues, and then, if necessary, start a rulemaking process to expedite interconnection between utilities and owners of distributed generation. The entire process should be completed within one year.

The Commission currently does not emphasize demand side management and energy efficiency (DSM/EE) programs. As a result, Arizona suffers from a sub-optimal deployment of cost effective DSM/EE measures. Many residential and commercial consumers and their suppliers pay little attention to the net benefits of DSM/EE, resulting in too little application of DSM/EE and too much reliance on power plants. (Some very large industrial and commercial consumers do take advantage of DSM/EE measures through energy service companies, however).

The LAW Fund believes that utilities should not only provide supply side resources but also provide cost effective demand side resources where such resources are not already being deployed. While such an obligation imposes costs on the utility which are then passed along to ratepayers, the total cost to society of meeting the demand for electric energy services is lower when cost effective DSM/EE is implemented than when cost effective DSM/EE opportunities are foregone.

Utilities are in the energy business, have recurring contact with consumers, are generally regarded as reliable by consumers, and are subject to the regulation of the Commission. Therefore, utilities can serve as vehicles for deploying DSM/EE programs. The Commission can promote cost effective DSM/EE by requiring utilities to implement, on a large scale, a mix of: (i) installation programs, (ii) rebate or other subsidy programs to reduce up-front costs to consumers, and (iii) market transformation programs aimed at educating consumers and suppliers and at providing incentives to suppliers to promote energy efficient appliances and buildings to their customers. The costs of such programs should be borne by the general body of ratepayers and by program participants in an equitable manner.³

Finally, to execute the proposals set forth above, the Commission must have a staff that is knowledgeable about interconnection, renewable energy, and DSM/EE. Staff resources must be devoted to developing a vision, working with utilities, evaluating programs and program alternatives considering economic principles, and enforcing the Commission's commitment to renewable energy, interconnection, and DSM/EE.

³ The Commission should avoid the trap of paying utilities for "lost net revenues" associated with DSM/EE programs because the utilities' responsibility extends to meeting energy service needs at lowest cost, not just generating electricity.

Question IV. B. 8. *Does the transmission and distribution system facilitate or deter (a) the development of renewable energy technologies, (b) the development of distributed generation, and (c) the development of demand-side management and energy efficiency?*

- A. At present transmission and distribution system conditions both facilitate and deter the development of renewable energy technologies and distributed generation. Current conditions facilitate development of renewable energy technologies and distributed generation in the sense that congestion on transmission lines coming into Phoenix and Tucson increases the value of generation located near load centers, i.e., in the Phoenix and Tucson metropolitan areas. Because of the environmental and other difficulties of siting new conventional power plants in metropolitan areas, distributed renewable energy resources, such as photovoltaics and landfill gas facilities, can play an important role in serving metropolitan area consumers. Similarly, DSM/EE measures are more valuable if the cost of bringing power into metropolitan areas is high due to transmission line congestion.

The most likely response to transmission congestion appears to be construction of more transmission capacity. The Commission's review of proposed transmission investments should include a comparison of the costs (including environmental costs) of such investments with the costs of DSM/EE and renewable energy generation distributed within load centers. If DSM/EE and renewable energy are given full consideration, the result may be scaling back or rejection of some transmission capacity plans.

With regard to deterrence of generation from renewable energy resources and DSM, transmission planning still overlooks cost effective applications of renewable energy and DSM that defer investments in transmission and distribution facilities. For example, photovoltaics can be used in lieu of distribution system upgrades to promote voltage stability. Increased capacity at transmission substations can also be deferred by generating electricity at the substation with photovoltaics. The Commission should ensure that distribution system planning **systematically and routinely** seeks out cost effective use of renewable energy and DSM as an alternative to investments in system upgrades. Such a process will also help secure currently uncaptured benefits of peak shaving and voltage stability produced by renewable energy projects and DSM. These efforts can build on analyses conducted by APS and Navopache Electric Cooperative.⁴

⁴ Arizona Public Service Company, *Distributed Photovoltaic Generation: A Comparison of System Costs vs Benefits*, prepared for the Arizona Corporation Commission, Decision No. 57589, October 1992. Navopache Electric Cooperative has analyzed the potential for a photovoltaic facility to improve voltage levels on a long, remote distribution line and may help meet the EPS requirements with that facility.

Third, the uncertain future planning and pricing policies for transmission service adversely affect generation from large scale renewable energy projects (and from conventional power plants as well). The details of pricing and planning should be monitored by the Commission to ensure that renewable energy projects are not adversely affected.

Finally, some renewable energy generation technologies may be located in remote areas with no access to transmission because that is where the energy resource is located (e.g., some wind or geothermal resources). Lack of access to transmission facilities is not yet a hindrance to development of renewable energy in Arizona. However, the costs of building new transmission lines to obtain power from remote renewable energy projects may, in the future, become a significant issue.

Question VII. *Please provide your vision for how viable competitive wholesale and retail electric markets will or will not develop in Arizona. Please be specific regarding dates, the development process, and measures for determining at various stages how successful the process has been.*

- A. Retail electric competition is a **process** without a particular intended **outcome** other than efficiency. In general, there are many material benefits to a competitive economy including economic growth and development and the potential to provide new services as has been recently witnessed in the telecommunications and computer industries. A major feature of capitalism is the creation and destruction of economic institutions,⁵ which may manifest itself in new institutions and technologies in the electric industry.

With regard to the process of competition, the LAW Fund believes that **wholesale** competition is viable in Arizona as numerous independent power plants currently and will in the future sell electricity to retail utilities. The market is already competitive and is expected to remain so. However, wholesale competition has not resulted in any "creative destruction" associated with dramatic cost savings or technological breakthroughs, but appears to have resulted in "creative accounting."

Retail competition is not very viable. Experience to date indicates that residential and small commercial and industrial consumers are not interested in shopping around unless they are heavily subsidized to do so or are coerced into shopping around. They are further dissuaded from seeking out competitive suppliers if they have to change their consumption habits to get lower bills resulting from "real time pricing" that competitive suppliers might wish to offer. On the supply side, competitive energy suppliers do not want to incur the transaction costs of signing up, serving, and billing thousands of small consumers on whom the profit margin is tiny.

In contrast, large industrial and commercial consumers like to have the additional bargaining power of shopping around when they negotiate power supply contracts.

⁵ Joseph Schumpeter, *Capitalism, Socialism and Democracy*, New York: Harper Colophon Books, originally published 1942; see chapter VII, "The Process of Creative Destruction."

However, the LAW Fund does not know whether industrial consumers as a group are happy with their experiences in competitive retail markets.

With regard to **outcomes**, the LAW Fund believes that society would be better off with greater deployment of renewable energy, distributed generation, and demand side management. The benefits include lower long run costs of meeting the demand for electric energy services and improved environmental quality. The most direct and dependable path to greater deployment of renewable energy, distributed generation, and demand side management at this time is government intervention in the electricity marketplace, regardless of whether that market is open to competition. The Corporation Commission is well situated to take on the task of benefiting Arizona by continuing to pursue policies in these areas.

RESPONSES TO COMMISSIONER SPITZER'S QUESTIONS

Questions 1 – 6. *In a vertically integrated utility model, what incentives (regulatory, financial and ratemaking) exist for the expanded use of renewable energies? In a competitive electric market model, what incentives exist for the expanded use of renewable energies? In a vertically integrated utility model, what disincentives (regulatory, financial and ratemaking) exist for the expanded use of renewable energies? In a competitive electric market model, what disincentives exist for the expanded use of renewable energies? During Arizona's period of reliance of the vertically integrated utility model, what renewable energy programs were enacted in Arizona? Since Arizona's adoption of a competitive electric market model, what renewable energy programs have been enacted in Arizona?*

- A. Arizona first adopted a competitive electric market model in December 1996. However, that model was revised several times by the Commission before a competitive framework was finally adopted in September 1999. Despite the adoption of a retail competition model, there is little or no retail electric competition in Arizona.⁶ There is wholesale electric competition throughout the west.

From 1989 through 1996, the Commission addressed renewable energy policy through its integrated resource planning process. Figure 1 shows the amount of renewable energy generating capacity installed or under construction in Arizona in 1996, including projects sponsored by utilities, the U.S. Army, John F. Long (a central station photovoltaic project in West Phoenix), and private business (biomass/cogeneration projects associated with agriculture or agricultural processing).⁷ The integrated resource planning process encouraged utilities to start

⁶ Most of the support for retail choice came from large industrial and commercial consumers.

⁷ Data from *The Electric Industry in Arizona*, Staff Report on Resource Planning, October 1996, page C-16.

implementing renewable energy projects and utility sponsored projects (including SRP) accounted for about 170 kW of photovoltaics (PV) applications.

The 1996 version of the Commission's rule on retail electric competition contained a solar portfolio standard starting at one half of one percent of retail kWh sold competitively and increasing to one percent. Subsequently, the Commission removed the portfolio standard from its competition rule and later included a modified environmental portfolio standard that expands the eligible technologies and allows for a variety of extra credit multipliers.

Figure 2 shows renewable energy projects of 10 kW or larger capacity installed in Arizona by year.⁸ There are over 13 MW of such projects in place. Figure 3 shows the mix of projects in 2001. The motivations behind these projects include the Environmental Portfolio Standard and utility management initiatives, especially in the case of Tucson Electric Power Company and Salt River Project.

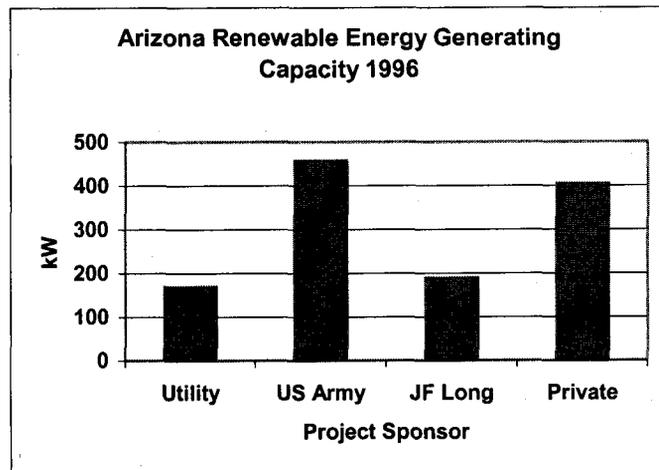


Figure 1

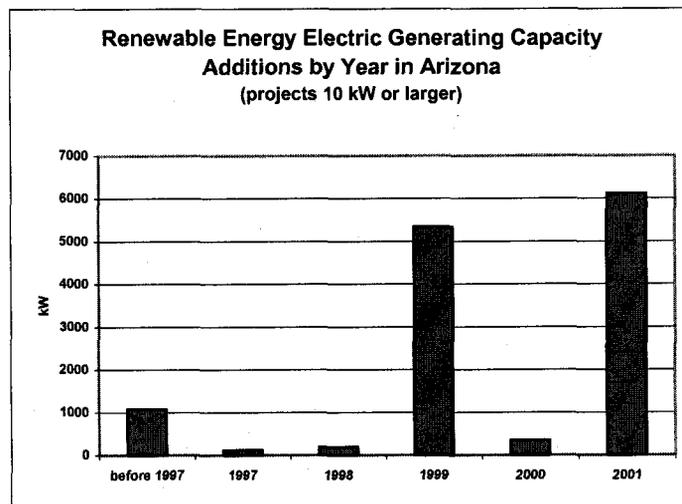


Figure 2

⁸ Data from utility reports, the National Renewable Energy Laboratory's REPiS database, and the 1996 Staff Report on Resource Planning. Solar hot water projects are excluded from the graph.

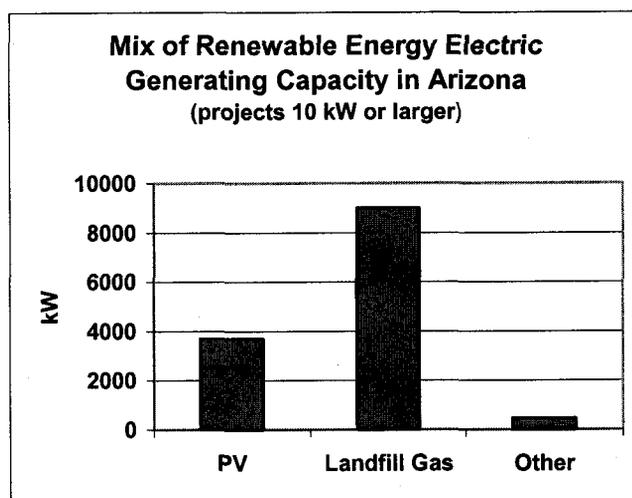


Figure 3

Adoption of a renewable portfolio standard is independent of whether a state adopts retail electric competition or retains a traditional regulated environment. The table⁹ shows that some states which have adopted retail electric competition have adopted renewable portfolio standards and some have not. Conversely, some states which have adopted renewable portfolio standards have pursued retail electric competition and some have not.

In a vertically integrated utility model with traditional utility regulation, the incentives for expanding the use of renewable energy are:

- ☺ Renewable portfolio standards which require that a specified amount of generating capacity be renewable energy technologies

State	Retail Electric Competition	Renewable Portfolio Standard
AZ	✓	✓
CA	✓ (suspended)	
TX	✓	✓
IL	✓	Renewable energy fund
MI	✓	
OH	✓	
VA	✓	
PA	✓	Via settlements
MD	✓	
DE	✓	
NJ	✓	✓
NY	✓	
MA	✓	✓
CT	✓	✓
RI	✓	
NH	✓	
ME	✓	✓
WI		✓
NV		✓
HI		✓
MN		Renewable energy fund
NM	postponed	Under consideration
UT		Under consideration
CO		Under consideration

⁹ Sources for Table: Ryan Wiser, Kevin Porter, and Mark Bolinger, "Comparing State Portfolio Standards and System-Benefits Charges under Restructuring," Lawrence Berkeley National Laboratory and National Renewable Energy Laboratory, October 23, 2000. Energy Information Administration, "Status of State Electric Industry Restructuring Activity as of January 2002." Information modified by current initiatives in Utah, Colorado, Nevada, and New Mexico.

or that a specified amount of kWh be derived from renewable energy technologies.

- ☺ Reasonable assurances of cost recovery for investments in renewable energy generating capacity or purchases of energy from renewable resources.
- ☺ Requirements for utilities to purchase energy at the utility's avoided cost from qualifying facilities under the Public Utility Regulatory Policies Act. This has been especially evident in California.
- ☺ Tax incentives. For example, tax incentives were instrumental in encouraging the LUZ solar trough projects in California in the 1980s and the withdrawal or uncertainty of continuation of these incentives contributed to termination of further investment in the technology.
- ☺ Financial incentives such as federal government programs to help pay for the costs of renewable energy (e.g., TEAM-UP for photovoltaic projects) and loans for investments in renewable energy projects (e.g., RUS loans for renewable energy projects for cooperatives).
- ☺ Demand by some consumers for green energy and a concomitant willingness to pay for green energy.
- ☺ Public relations benefits for utilities who do pursue renewable energy projects.

The result of these incentives for the nation as a whole is shown in Figure 4.¹⁰

In a competitive electric market model, the same incentives for expanding the use of renewable energy are applicable, assuming that electricity derived from renewable energy costs more than conventionally generated electricity.

With regard to disincentives for expanded use of renewable energy, the following factors apply:

- ☺ In both competitive and regulated markets, the high cost of renewable energy.
- ☺ In both competitive and regulated markets, lack of information about currently cost effective applications of renewable energy technologies, such as wind power, which may be cost competitive today in some locations. In addition, distribution utilities often overlook the application of renewable energy technologies, such as photovoltaics, which are cost effective where line

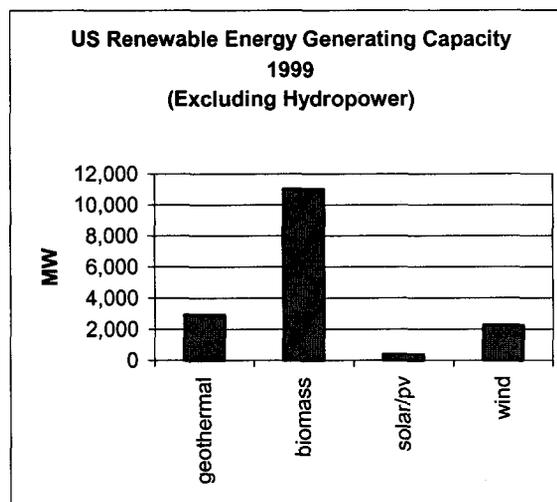


Figure 4

¹⁰ The data on US renewable energy generating capacity are from EIA, Renewable Energy Annual 2000, Table 5.

extensions (often less than 1 mile long) or upgrades are more expensive than installing renewable energy technologies.

- ⊗ In both competitive and regulated markets, failure to consider the value of stable prices for energy from renewable resources or energy savings from DSM in an environment in which fossil fuel prices and spot market electricity prices are highly volatile.
- ⊗ Primarily in competitive markets, the risk that the utility will not recover its costs because the level of demand for renewable energy does not support energy production from renewable energy technologies.
- ⊗ In both competitive and regulated markets, utility perceptions that because some renewable energy technologies are not dispatchable, they should not be used. Experience with photovoltaics and wind power indicate that utilities can integrate large quantities of such generation into their systems without adverse effects, however.

Questions 7-10: *Under the vertically integrated utility model, what incentives exist to build newer plants that are less damaging to the environment to replace older, dirtier plants? Under the competitive electric market model, what incentives exist to build new plants that are less damaging to the environment to replace older, dirtier plants? Under the vertically integrated utility model, what disincentives (regulatory, financial and ratemaking) exist to build newer plants that are less damaging to the environmental to replace older, dirtier plants? Under the competitive electric market model, what disincentives exist to build newer plants that are less damaging to the environment to replace older, dirtier plants?*

- A. In general, there are no incentives under either the traditional regulated model or the competitive electric market model for generator owners to **replace** older, dirtier plants. No power plants serving Arizona are scheduled for replacement. Indeed, "older, dirtier" plants (presumably coal plants and old combustion turbines burning oil) are attractive to generators because they have been largely or completely paid for, often use inexpensive fuel, and some have not been subject to environmental review. There is a strong financial disincentive to replace any of these plants.

Under the regulated model, SRP and the co-owners of the Navajo generating plants agreed (in response to a lawsuit) to retrofit the plants to reduce sulfur dioxide emissions. It is uncertain whether they would be as willing to do so in a competitive market since their costs would increase, placing the power plant at a competitive disadvantage.

In a competitive market, investment decisions are motivated by expected financial returns. The types of power plants constructed under a competitive market model and a traditional regulated market model may be different. In a competitive wholesale environment, natural gas fired units predominate over coal plants for several reasons:

- ☞ Lower risk of not recovering the investment. Gas fired power plants have lower capital costs per kW of generating capacity.
- ☞ Greater efficiency of gas fired combined cycle units (i.e., fewer Btus of fuel per kWh generated).
- ☞ Ability to use natural gas fired units for peaking, intermediate, or baseload purposes (the last applying to combined cycle units).
- ☞ Lower emissions of carbon dioxide and sulfur dioxide per kWh generated and lower emissions control costs.
- ☞ Shorter construction lead times.

These same factors also apply to the regulated market model. However, under a regulated system, utilities have typically planned for baseload, intermediate, and peaking plants as distinct facilities. Baseload plants typically exhibit high capital costs, high capacity factors, lower fuel costs, and long useful lives over which capital costs are recovered. Baseload plants in Arizona have traditionally been coal fired or nuclear plants. Recovery of the capital costs of traditional baseload plants, while not guaranteed, has been sufficient to keep regulated utilities in business.

Questions 13-14: *During Arizona's period of reliance on the vertically integrated utility model, what amount of excess generating capacity existed in Arizona? Since Arizona's adoption of a competitive electric market model, what amount of excess generating capacity existed in Arizona?*

- A. Both the traditional regulatory model and a competitive market model can result in excess power generation capacity.

During the late 1980s and early 1990s, excess generating capacity existed in Arizona for several years. That excess capacity included APS' share of Palo Verde Unit 3 (or Cholla Unit 4), and portions of TEP's Springerville Units 1 and 2. SRP suspended its plans to add to the Coronado generating station in the late 1980s to avoid any excess capacity that it might otherwise create. Figure 5 shows reserve margins for Arizona generating utilities in 1990. Reserve margins above about 15 percent suggest excess capacity.¹¹

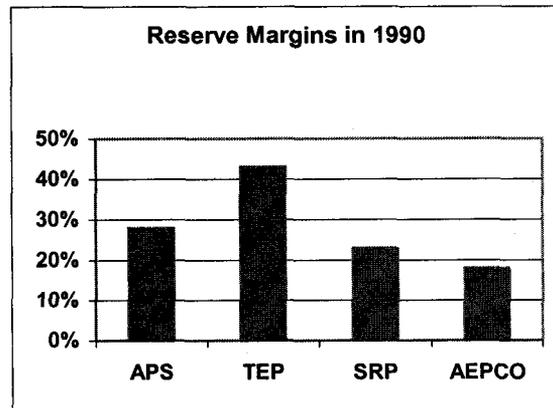


Figure 5

Figure 5 shows reserve margins for Arizona generating utilities in 1990. Reserve margins above about 15 percent suggest excess capacity.¹¹

The generating capacity added after 1996 was put in place largely to serve competitive wholesale markets and possibly to serve retail electric competition in

¹¹ Source of data: Staff Report, Resource Planning, November 9, 1990, page 55. The reserve margins are calculated as the utility's capacity minus peak demand expressed as a percentage of peak demand.

California (now suspended). The southwest appears to be entering a period of excess generating capacity. Western Systems Coordinating Council (WSCC) projections of reserve margins are shown in Figure 6 and these projections suggest excess capacity from 2003 through 2008 or later. Further, spot market prices for electricity have fallen to low levels, again suggesting that additional generating capacity is not needed at this time. And the trade press indicates that the power generation industry is facing a bust period after the boom period of the past few years. Investors are expected to respond to excess capacity by cutting back on construction of new power plants.

Applicants for Certificates of Environmental Compatibility should not be able to “store” their Certificates for long periods while waiting for the impending excess capacity to abate. In five years, environmental conditions could well be different and there could be better understanding of water supply and air quality issues. Therefore, the LAW Fund recommends that if the Commission grants a Certificate of Environmental Compatibility, the associated power plant must be under construction within 3 to 5 years. Otherwise the Certificate should lapse and the generator would have to reapply if he or she wants to construct a power plant at that site in the future.

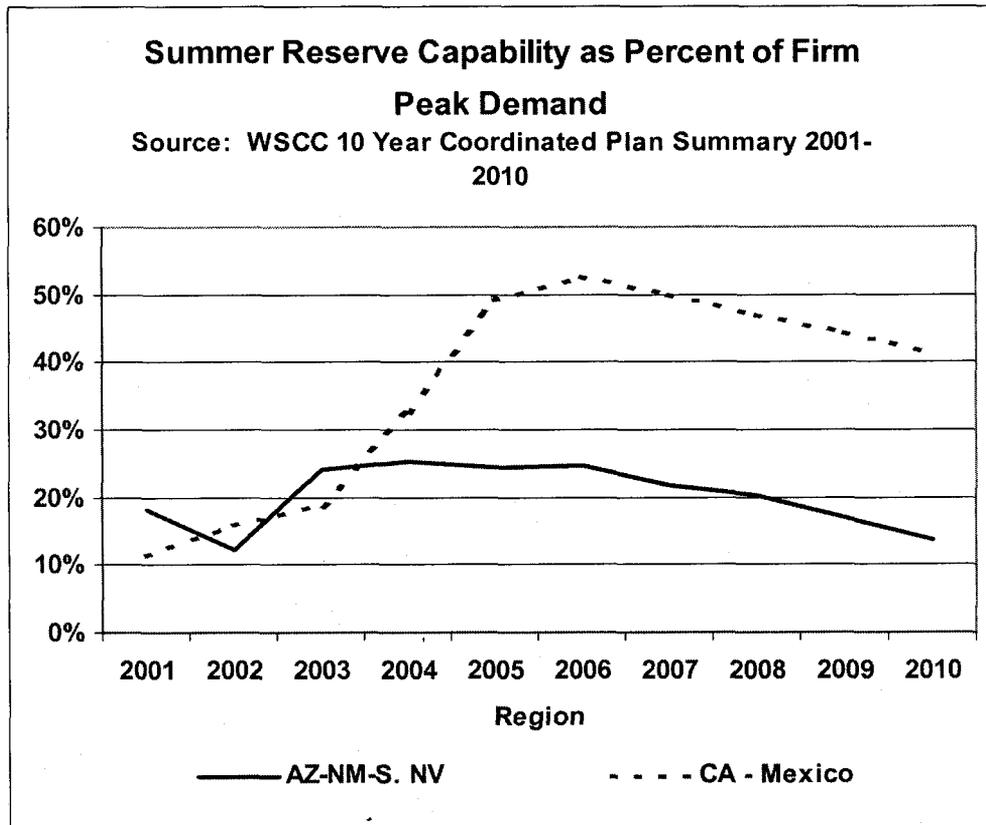
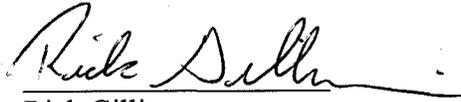


Figure 6

Respectfully submitted this 22nd day of February 2002,



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CERTIFICATE OF SERVICE

I hereby certify that the original and 18 copies of the LAND AND WATER FUND OF THE ROCKIES RESPONSES TO COMMISSIONERS' QUESTIONS ON ELECTRIC COMPETITION were FedExed to Docket Control, Arizona Corporation Commission, 1200 W. Washington Street, Phoenix, AZ 85007, on the 22nd day of February 2002, and a true and correct copy was sent by U.S. mail, first-class and postage prepaid, to each of the following:

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