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Commissioner

## ARIZONA CORPORATION COMMISSION

December 6, 2016

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

RE: Resource Planning and Procurement, Docket No. E-00000V-15-0094

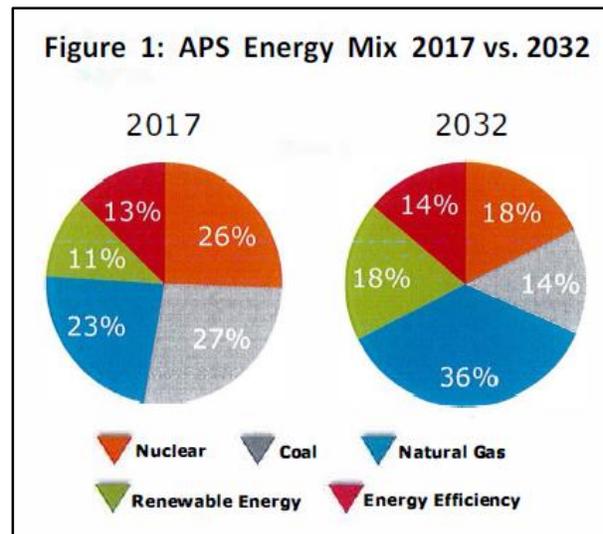
Dear Commissioners and Other Interested Parties:

Discussion at the Commission's November 29, 2016 Special Open Meeting focused significantly on the variables associated with a utility's long-term resource planning. Indeed, Mr. Jeff Burke shared certain "[Integrated Resource Plan] IRP Planning Principles" that included reliability, affordability, sustainability, flexibility, and risk management (i.e., resource diversity). (See *APS/TEP/UNSE Presentation for the ACC DSM Cost Effectiveness Workshop, at slide 11.*)

This letter is directed primarily at the risk management principle, and it should come as no surprise, especially given the lengthy conversation among commissioners during the IRP Special Open Meeting earlier this year about the outsized planning for natural gas generation to replace coal-fired plants. As you know, coal generation has long been a resource for those customers with low or fixed incomes.

If other IRP Planning Principles like affordability and reliability are to be realized, then Arizona's utilities must invest in diverse resource options. The preliminary IRPs do not adequately achieve this balance. They are heavily weighted toward the selection of a single resource option—natural gas—exposing Arizonans to significant financial risk. Not only does over-investment in natural gas increase the risk of higher energy prices that have been historically unstable, but Arizonans would also be forced to pay the unnecessary costs for idled generation infrastructure used a fraction of the year.

As **Figure 1** illustrates, natural gas will dominate Arizona Public Service's (APS's) generating resources by 2032. APS proposes



(Adapted from APS – Updated Preliminary 2017 IRP, at 1.)

an aggressive expansion of natural gas from 0.3 GW by 2017 to 2.6 GW by 2022 and over 5 GW by 2032. (See **Figure 2** below.) This trajectory is troubling.

**Figure 2: Detailed Breakdown of APS Generation Resources 2017-2032**

TABLE 1 – PRELIMINARY 2017 IRP (Values in MW at Peak)				
	2017	2022	2027	2032
PROJECTED LOAD REQUIREMENTS (NEEDS)	8,210	9,748	11,252	12,797
EXISTING RESOURCES AS OF JANUARY 2016				
APS-Owned Generation	6,045	5,864	5,475	5,474
Long-Term Contracts	1,489	412	355	342
Total Existing Resources as of January 2016	7,534	6,277	5,830	5,816
FUTURE PROJECTED DISTRIBUTED RESOURCES				
Energy Efficiency (1), (2)	225	629	749	857
Distributed Energy (1), (2)	30	98	175	250
Demand Response (3) & Microgrid (4)	32	107	232	357
Total Future Projected Distributed Resources	287	835	1,156	1,464
FUTURE PROJECTED UTILITY RESOURCES				
Natural Gas	363	2,611	4,084	5,229
Renewable Energy & Energy Storage	25	62	182	288
Total Future Projected Utility Resources	388	2,672	4,266	5,517
TOTAL FUTURE PROJECTED RESOURCE ADDITIONS	675	3,507	5,422	6,981
TOTAL RESOURCES	8,210	9,784	11,252	12,797

(Adapted from APS – Preliminary 2017 IRP, at 13)

Additionally, I would like all utilities to provide a stand-alone calculation for energy storage in future versions of their 2017 IRPs.

APS and other Arizona electric utilities must develop a more balanced and forward-looking perspective when evaluating future iterations of its 2017 IRP and reviewing responses to its recent all-source Request for Offers (RFO). Ignoring resources such as utility scale energy storage and other innovative technology combinations is not in the best interests of ratepayers or shareholders in the long run.

Arizona has other resource options, besides natural gas, that are less risky and less expensive for customers. Moreover, these alternatives should be “Arizona grown,” supporting local job creation. To that end, I offer the following suggestions for the IRPs:

1. **More Robust Levelized Resource Cost Comparisons** – Full comparison of the levelized cost of new resource options (in chart and table format), clearly delineating for each resource, how each cost category contributes to the overall cost. Cost categories should include construction, ongoing capital expenditures, fuel, fixed O&M, variable O&M, transmission, existing environmental compliance, future environmental compliance, and emissions/externalities (water, NOx, SOx, Hg, PM, carbon/greenhouse gas emissions). Where applicable, the data should present the range of possible costs for each cost category.

- a. More robust risk analysis – Include as part of the levelized cost of new resource options a cost range based upon an evaluation of the following factors: fuel price, environmental compliance, construction time and cost overruns, and stranded costs.
  - b. Technology cost forecast retrospective – Assess previous resource cost forecasts included in past IRPs for accuracy and understand why any were inaccurate.
2. **Economic Development** – What is the utility doing to attract and retain companies and support in-state job creation?
  - a. Evaluate the labor intensity of different resource options (i.e., potential for in-state job creation of new resource options).
  - b. What is the impact of current programs?
  - c. Are there new programs to explore?
  - d. What are the needs of large commercial customers and prospective companies?
  - e. What share of future resource investment does the utility expect to have in-state versus out-of-state?
  - f. How is the Company working to reduce expenditures that flow out-of-state, including on imported fuel? What portion of overall expenditures on generation is related to imported fuel costs and how is this expected to change over time?
3. **More Illustrative Risk/Reward Tradeoffs** – Illustrate costs and potential volatility of different portfolios.
  - a. Fuel risk.
  - b. Construction time and cost overruns for large capital investments.
  - c. Water supply availability risk.
  - d. Environmental compliance.
  - e. Portion of pass through costs borne by customers (e.g. fuel subject to adjustor mechanisms) as a percentage of overall generation costs.
  - f. Stranded cost risk.
4. **More Strategies to Take Advantage of Low Daytime Pricing** – How can Arizona best benefit from California’s over generation, especially during system peak periods? The Clean Peak Standard as developed by Mr. Lon Huber and proposed by the Residential Utility Consumer Office may provide further guidance on this topic. *(Please see Docket No. E-00000Q-16-0289 for more information.)*
5. **More Coverage of the Distribution System** – Explain how the grid is changing, as well as grid challenges and opportunities.
  - a. Identify and quantify volt/VAR needs.
  - b. Are there local flexible ramping needs?
  - c. What non-generation alternatives exist to meet these needs? Provide an assessment of all available technologies and operational changes to provide grid services such as volt/VAR support, flexible ramping, local capacity, and ancillary services.
  - d. What opportunities are there to geo-target demand-side resources to alleviate constraints on the distribution system?

I appreciate the opportunity to share my thoughts on the heady topic of integrated resource planning. In every discussion with the utilities on this topic, I am always told that things can change in the dynamic world of energy technology. What is fashionable in one IRP cycle, they say, may be flawed in another. I appreciate such a healthy dose of conservative planning and hope that the IRP process does not conflate risk management with risk aversion.

Sincerely,

Andy Tobin  
Commissioner