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Before the Arizona Corporation Commission

COMMISSIONERS
TOM FORESE, CHAIRMAN
BOB BURNS
ANDY TOBIN
BOYD DUNN
JUSTIN OLSON

DOCKET NO. E-00000V-15-0094

IN THE MATTER OF RESOURCE PLANNING AND PROCUREMENT IN 2015 AND 2106

COMMENTS OF WESTERN GRID GROUP

Western Grid Group efforts are focused on developing plans, systems, rules and operations necessary to support a low carbon future. WGG works throughout the Western Interconnection (WI) on evolving grid operations to integrate and support clean energy, ensure markets and market services are built to improve electricity reliability, existing transmission systems are used more efficiently and flexibility becomes a key planning and operations criteria. We offer these comments and provide questions on the Arizona Public Service Company (APS) selected portfolio for your consideration.

The Integrated Resource Planning process is one of the most important proceedings of the Arizona Corporation Commission as it provides a long-term view of what utilities are proposing, as well as three-year action plans that provide projections for near-term procurement. It is an opportunity for Commissioners, Commission staff, and a wide range of stakeholders to provide input on the direction of the utility; and ultimately the state.

This resource planning round is particularly important as APS is proposing to build resources that customers do not want to buy. From a review of the filings in this Resource Planning docket, there are no stakeholders supporting APS's selected resource plan, which consists almost exclusively of natural gas (5,516 MW) and almost no customer-preferred utility-scale renewable energy (16 MW) and energy efficiency.

The following organizations have expressed their interest in greater development of renewable energy, energy efficiency and storage and/or the Alternative Portfolio that is a combination of these resources:

(Docket links all start with http://images.edocket.azcc.gov/docketpdf/)

- Advanced Energy Buyers Group made up of Amazon, Apple, Facebook, Google, Ingersoll Rand, Microsoft, Sales Force, Target, and Walmart 0000185414.pdf
- Arizona Community Action Association (ACAA) 0000185642.pdf
- Arizona Interfaith Power and Light 0000185642.pdf
- Arizona Solar Energy Industries Association (AriSEIA)
- Arizona Public Interest Research Group (PIRG) Education Fund 0000185738.pdf
- Arizona Utility Ratepayer Alliance (AURA)
- Conservative Alliance for Solar Energy (CASE)
- Energy Storage Association 0000184689.pdf
- Navajo Diné CARE 0000185621.pdf
- Navajo To Nizhoni Ani 0000185621.pdf
- Navajo Black Mesa Water Coalition 0000185621.pdf
- Tucson 2030 District 0000185642.pdf
- Efficiency First Arizona 0000185642.pdf
- National Association of Energy Service Companies (NAESCO) 0000185642.pdf
- Our Mother of Sorrows Catholic Church 0000185642.pdf
- Polyisocyanurate Insulation Manufacturers Association (PIMA) 0000185642.pdf
- Southwest Energy Efficiency Project (SWEEP) 0000185642.pdf
- Vote Solar 0000185685.pdf
- Western Grid Group 0000185642.pdf
- Western Resource Advocates (WRA) 0000185642.pdf and
- 368 individual customers 0000185686.pdf

Having participated in all the Integrated Resource Planning processes since the process was reinitiated, I have never seen engagement by such a diverse and large number of stakeholders and such agreement on preferences for renewable energy, energy efficiency and storage.

As customers have no ability to change providers or buy energy from any other sources, I hope you will consider their concerns and direct APS to modify its plans for relying solely on natural gas to meet future resource needs.

Below are questions about APS's "Flexible Resource" selected portfolio for your consideration:

Renewable energy:

RE1. Given that APS knows its customers overwhelmingly prefer solar and wind[1] why is the utility planning virtually zero (16 MW in 2027) new utility-scale renewables, while acquiring 5,516 MW of natural gas capacity in the next 15 years?

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[1] *APS Informed Perception Project Report,* 2011, by ASU's Morrison Institute for Public Policy found "94% [of surveyed APS customers] wanted an increase in the use of solar as a part of the energy portfolio and 82% wanted an increase in the use of wind power."
https://morrisoninstitute.asu.edu/sites/default/files/content/products/APSFinal_Final%202.pdf Pages 2 & 3.
Also see 2011-2018 Conservation in the West Polling by Colorado College
https://www.coloradocollege.edu/stateoftherockies/conservationinthewest/

RE2. Why did APS choose to not include cost decreases in solar and wind costs when both resources have already and are expected to continue to decline over the 15 year planning period?

RE3. If APS had used up-to-date, accurate costs for wind[2] and solar would the resource planning model, and thus the resource plan have chosen more renewable energy?

RE4. Given the Commission's and state's interest in economic development, how is APS going to meet the demand by businesses and municipalities for renewable energy if the utility is not planning to procure any renewable energy in the 15 year planning horizon?

RE5. APS's selected portfolio includes approximately 17% distributed generation (DG) by 2032, or about 200 MW each year. This assumption is used in part to justify the need for thousands of MW of additional natural gas. However, new distributed solar has never been more than about 150 MW in any year. Thus, APS is assuming that DG penetrations will grow by 25% over historic levels and be maintained at this unprecedented level, every year for 15 years of the planning period (for a total of 3,000 MW). If DG levels are less than projected over the next 15 years how does that affect the amount of new natural gas needed?

Natural gas:

NG1. APS's proposed plan will double the amount of natural gas burned[3] over the next 15 years requiring an expansion of pipelines in Arizona to deliver fuel.

- When does APS expect to have to sign a contract for pipeline expansion or upgrades?
- How much total natural gas (BCF and BCF per year for how many years) will the utility have to commit to purchase for a pipeline company to invest in upgrades or expansions?
- What is the cost added to per BTU pricing of natural gas for the pipeline upgrade/expansion?
- What is the total capital cost and APS's portion of the pipeline upgrade/expansion?

NG2. APS is allowed a Purchase Power Adjuster that flows all cost increases for fuel (e.g., natural gas) directly to customers. Natural gas is a historically volatile-priced fuel with prices ranging from $2.50 per MMBTU to over $13.00 per MMBTU in the last 15 years. APS is dramatically increasing the cost risk on customers by doubling the amount of natural gas it will purchase.

- As APS is increasing risk on customers who have no ability to avoid this risk, should the next rate case modify the Purchase Power Adjustor to share the cost risk between customers and APS shareholders?
- If this provision was re-adopted now would it affect the resource plan to have more than 50% of the utility's energy be produced by natural gas?

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[2] APS uses an unsubstantiated cost figure of $165 MWh at peak for wind energy. Lazard documents that the levelized cost for wind energy is $30-60 https://www.lazard.com/perspective/levelized-cost-of-energy-2017/. Further, recently in New Mexico wind was purchased at less than $19 MWh.

[3] Gas burn will increase from 73.2 Billion Cubic Feet (BCF) annually to 140.90 BCF in 2031 - APS IRP page 350 – Attachment F.1 (B)(3)

Cost of System:

To ensure there is adequate generation to meet load in the event of an electrical disturbance, the North American Electricity Reliability Corporation (NREC) requires utilities to have available additional generation at the ready. NERC recommends a reserve margin of 15% for predominately thermal systems, such as APS[4].

In its Historical Resource Planning report APS states[5] "The actual Reserve Margin for 2015 was 1968.7 MW or 28% at the time of system peak." This means that APS is carrying, and customers are paying for as much as 915 MW of additional, unneeded, expensive generation.

As a point of reference, in April, 2016 Southwest Power Pool announced the reduction of its reserve margin from 13.6% to 12%[6]. According to SPP this reduction by "about 900 MW" will save customers "approximately $90 million annually, or $1.4 billion over the next 40 years". APS carrying a similar amount of extra reserve energy may be costing its customers similar amounts.

Given this fact:

CS1. If APS reduced its reserve margin by 915 MW what would be the annual cost savings to customers?

CS2. APS claims it has difficulty managing solar resources due to ramps, yet if APS has 915 MW of capacity more than it needs at peak times how can it not have enough energy during morning and evening ramps which are below peak needs?

CS3. Why is APS proposing to add hundreds of megawatts of natural gas each and every year when the utility has 915 MW more energy than it needs to reliably meet peak load?

CS4. What is the reserve margin figure for 2016?

Based on the information outlined in this document and filings in the docket we provide the following recommendations for the Commission's consideration -

Recommendations

1. The Commission should require APS to model the Alternative Portfolio put forward by customers and stakeholders. The modeling should be conducted by APS but be overseen by a Technical Advisory Committee (TAC) with a variety of experts independent of APS, chosen by Commission staff, which can ensure that assumptions and data are up-to-date and reasonable. TAC members should be required to sign a non-disclosure agreements so that information can remain confidential. The results of the modeling should be prepared and presented to the Commission within 180 days.
2. The Commission should not acknowledge the Action Plan of APS and the purchase of any natural gas resources during the Action Plan period. Given the fact that APS has significantly more

[4] The largest single contingency on the system is also taken into account when setting an appropriate reserve margin.

[5] http://images.edocket.azcc.gov/docketpdf/0000169381.pdf, filed March, 2016

[6] https://www.spp.org/about-us/newsroom/spp-board-votes-to-lower-planning-reserve-margins-award-first-competitively-bid-project-approve-363m-in-transmission-upgrades/

resources than needed to meet peak and contingencies there is no urgency to purchase any resources until further analysis is completed.

Conclusion

It is evident from filings in this docket that APS's selected "Flexible Resource Portfolio" will not meet the needs or expectations of its customers. Based on APS's projected load growth and the fact that it is carrying hundreds of megawatts of extra reserve energy, the Commission has ample time to evaluate alternative options that will provide a more reliable and cost effective electric system using non-fossil resources that are preferred by customers.

RESPECTFULLY SUBMITTED this seventh day of March, 2018.

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