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Utilities Division

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Arizona Corporation Commission

DOCKETED

FEB 22 2018

Bob Burns
Andy Tobin
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TO: Docket Control

DATE: February 22, 2018

DOCKETED BY
WJ

RE: TO OPEN A DOCKET FOR REVIEW, MODERNIZATION AND EXPANSION OF THE ARIZONA RENEWABLE ENERGY STANDARD AND TARIFF RULES AND ASSOCIATED RULES (DOCKET NO. E-00000Q-16-0289)

SUBJECT: NOTICE OF INQUIRY

On August 22, 2016, Chairman Little opened a docket for the Review, Modernization and Expansion of the Arizona Renewable Energy Standard and Tariff Rules and Associated Rules. On January 30, 2018, Commissioner Tobin filed a letter and proposed Energy Modernization Plan <http://docket.images.azcc.gov/0000185386.pdf>. To evaluate the proposals set forth in Commissioner Tobin's letter which may lead to a formal rulemaking(s), Staff is docketing a Notice of Inquiry ("NOI") to obtain a better understanding of the following:

- 1) changes that are occurring in the energy arena and how to evaluate those changes;
- 2) the need for a comprehensive energy plan to guide critical decisions in the future related to energy;
- 3) the extent to which the current Renewable Energy Standard and Tariff (REST) rules may need to be revised;
- 4) the extent to which the current Energy Efficiency rules for electric and natural gas utilities may need to be revised;
- 5) forest/biomass issues in Arizona;
- 6) electric vehicle infrastructure within the state;
- 7) the role of emerging technologies such as energy storage;
- 8) the nexus between generation planning and transmission planning; and
- 9) how best to conduct a comprehensive review of the Commission regulated utilities' energy planning given the changing dynamics of the industry.

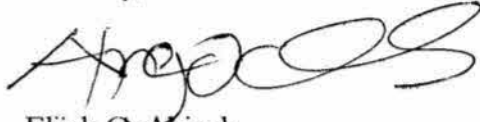
Please see the attached list of initial questions contained in the NOI. Interested parties are invited to comment on the attached questions and to identify additional issues and questions they believe should be addressed as part of this NOI. Written comments should be filed with the Commission no later than April 23, 2018. Please file an original and 13 copies of comments with the Commission's Docket Control at 1200 West Washington St., Phoenix, Arizona, 85007. The filing should reference Docket No. E-00000Q-16-0289.

All parties who want to be included on the service list for this docket should send a separate notice to the Commission's Docket Control Center at the above address and include both a mailing

address and an e-mail address. The notice should reference Docket No. E-00000Q-16-0289. Staff appreciates the input and participation from all interested parties in this matter.

If you have any questions, or if there is information that you desire to submit that is deemed to be confidential, please contact Ranelle Paladino at (602) 364-0347.

Sincerely,

A handwritten signature in black ink, appearing to read "Elijah O. Abinah". The signature is fluid and cursive, with a large initial "E" and "A".

Elijah O. Abinah
Director
Utilities Division

On this 22nd day of February 2018, the foregoing document was filed with Docket Control as a Utilities Division Correspondence, and copies of the foregoing were mailed on behalf of the Utilities Division to the following who have not consented to email service. On this date or as soon as possible thereafter, the Commission's eDocket program will automatically email a link to the foregoing to the following who have consented to email service.

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Arizona Corporation Commission

Docket No.E-00000Q-16-0289

Page 4

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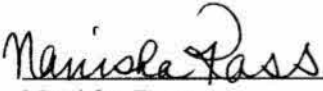
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By:  _____
Nanisha Ross
Administrative Support Specialist

1. Public Interest/Cost Benefit

The Commission has responsibility, among other things, to set rates that are just, fair, and reasonable. In order to fulfill that obligation, the Commission has to take into consideration all relevant information such as the cost of providing safe and reliable utility services consistent with the public interest.

- a. Please provide a thorough analysis of the prospective cost to ratepayers of the Energy Modernization Plan.
- b. What is the potential impact/consequences to ratepayers?
- c. What is the possibility of stranded investment?
- d. What is the magnitude of stranded investment?
- e. What is the potential for cross-subsidization between regulated public service corporations' functions and non-regulated functions?
- f. What is the positive and/or negative impacts to reliability and resiliency?
- g. What is the amount of additional investment that may be required to comply with or implement the Energy Modernization Plan?
- h. What is the possibility of negative pricing to Arizona ratepayers as a result of the Energy Modernization Plan?
- i. What is the magnitude of negative pricing to Arizona ratepayers as a result of the Energy Modernization Plan?
- j. How much of the utilities current energy portfolios would be classified as "clean?"
- k. Can utilities project how their energy portfolios will appear by 2050 without the Energy Modernization Plan?
- l. How would future energy planning change for utilities if the Energy Modernization Plan is adopted?
- m. If the Energy Modernization Plan is adopted, would utilities change their plans regarding the useful life of current coal plants?
- n. How does the cost of continued use of coal plants compare to the cost of new natural gas plants or solar projects?
- o. Under the Energy Modernization Plan, do utilities expect they would prematurely close coal plants?
- p. How do utilities expect consumer prices to change with coal plant retirements?
- q. What is the cost per kWh of electricity currently produced at the Navajo Generating Station ("NGS")?
- r. How does that compare to cost per kWh at other coal facilities in Arizona?
- s. What factors are leading to the closing of NGS?
- t. How much does it currently cost to build a utility scale solar project?
- u. How does that compare to the current cost to build a natural gas plant for the same electricity output?
- v. What percentage of each utility's customers currently have residential solar panels?
- w. Please provide the trend over the last five years?
- x. Please project how many new residential solar projects will be completed in the next ten and twenty years?
- y. How much storage is currently being used by the utilities?

- z. How long have those storage projects been in effect?
 - aa. What are the capabilities of current batteries in terms of kWh storage?
 - bb. How much of the peak demand can be expected that storage will be able to mitigate in the next five to ten years?
 - cc. How do the utilities expect to invest in storage without the Energy Modernization Plan?
 - dd. What energy storage projects are currently being contemplated?
 - ee. Is a target of 3,000 MW of energy storage by 2030 an attainable goal?
 - ff. Is a mandate related to Arizona's forests a proper function of the Commission's mission to regulate utility rates?
 - gg. Is there a constitutional or statutory provision granting authority to the Commission to issue policy regarding Arizona's forests?
 - hh. If the health of Arizona forests is a statewide issue, should that issue be debated and discussed at the Arizona Legislature?
 - ii. What percentage of Arizona electric customers does the Commission regulate?
 - jj. Which utilities provide the balance of the electricity?
 - kk. How much biomass energy is currently procured by Arizona utilities?
 - ll. Why did utilities decide to enter contracts for biomass energy?
 - mm. What is the price per kWh of the current biomass contracts?
 - nn. How does that price compare with energy produced from conventional sources?
 - oo. Is biomass energy currently procured by any other plant besides Novo BioPower in Snowflake, Arizona?
 - pp. Are there any other options for procuring power from biomass in Arizona?
 - qq. When do the current power purchase contracts expire?
 - rr. Do the utilities expect to renew those contracts? Why or why not?
 - ss. Without any action from the Commission, would Arizona utilities continue to procure biomass energy?
 - tt. Please explain how utilities currently meet peak demand?
 - uu. What is the cost of meeting peak demand for each generating source?
 - vv. What is the current feasibility of using dispatchable clean energy during peak demand?
 - ww. Are there clean energy projects already contemplated for use during peak demand?
 - xx. Is it a proper function of the Commission to require ratepayers to pay for electric vehicle infrastructure?
 - yy. What is the relationship between electric vehicle infrastructure and a utility's costs of providing electricity?
 - zz. If electric vehicle infrastructure would benefit all Arizonans, should the issue be debated and discussed at the Arizona legislature?
 - aaa. What percentage of Arizonans currently use fully electric cars?
 - bbb. How do Arizonans currently charge their electric car?

- ccc. If Arizonans with electric cars desire charging stations around Phoenix, would the market provide that service?
- ddd. Do Arizona utilities have any plans to be involved with electric car stations?
- eee. If Arizona utilities built electric vehicle infrastructure, would the investments be included in rate base?
- fff. Is it just, fair and reasonable to charge ratepayers for infrastructure that is only used by a certain population of Arizonans?
- ggg. Should a utility customer have exclusive rights to an electric charging station built by that utility?
- hhh. How will the customer be charged, at what rates, and who sets those rates?

2. Policy Framework

The Energy Modernization Plan proposes to use the Renewable Energy Standard and Tariff (“REST”) policy framework for modernizing the state’s energy policy to be renamed the Clean Resource Energy Standard and Tariff (“CREST”).

- a. Please describe the entities which would be required to participate in the state’s energy policy.
- b. Should the Energy Modernization Plan encompass entities not regulated by the Commission such as municipal corporations or quasi-federal entities?
- c. Would legislation be necessary to include such entities as participants in the Energy Modernization Plan?
- d. Should the Energy Modernization Plan apply to all utilities regardless of size or characteristics, or should certain utilities, for example small companies and/or cooperatives, be treated differently?
- e. Please comment on any energy policy in Arizona you deem to be outdated, explain why, and identify proposed improvements to these policies.
- f. Please explain the role of traditional regulated energy providers changing in the future as a result of market and technological changes.
- g. Please comment regarding the Energy Modernization Plan’s flexibility of allowing 20% of the energy mix to come from resources other than the clean resources described in the Energy Modernization Plan.
- h. Please address anticipated costs of implementation of the CREST standard, including implications for stranded costs, and ratepayer impacts.
- i. What level of existing non-clean resources would have to be retired or sold to merchant companies? How rapidly should retirement occur?
- j. Please discuss the role of merchant generation (clean and non-clean) with respect to the Energy Modernization Plan.
- k. Please comment regarding the appropriateness of the 20% limit on “non-clean” resources.

- l. Is this enough to ensure reliability of the bulk electric transmission system and local distribution systems?
- m. Who would benefit, and in what manner, from the Energy Modernization Plan? Please include a consideration of costs associated with the benefits of the Energy Modernization Plan. Should the costs be borne by the beneficiaries?
- n. What role should natural gas, both a fuel for power generation and for the provision of service to end users, play in the Energy Modernization Plan?
- o. Will the flexibility of natural gas-fired generation continue to play an important role in Arizona's energy future?
- p. Given Arizona's expected reliance on natural gas generation in the coming decades, discuss the importance of continued efforts to develop market area natural gas storage and other tools to provide more flexible and reliable natural gas delivery in Arizona.
- q. Should Arizona natural gas and/or propane local distribution companies be included in the Energy Modernization Plan? If so, in what area(s)?
- r. Does the Energy Modernization Plan raise any concerns regarding the "management interference doctrine"? Can these concerns, if any, be addressed through flexibility in the plan implementation?

3. Clean Energy

The Energy Modernization Plan proposes a target of 80% clean resources by 2050 including solar, hydro, wind, nuclear, energy efficiency, and other measures such as energy storage, with the ultimate goal of being 100% from clean resources.

- a. Should the existing REST rule targets change and if so how should they change?
- b. What other measures should be incorporated to achieve the target of 80% clean energy resources?
- c. Should the Energy Efficiency ("EE") rules, both gas and electric, be revised, repealed, suspended, or integrated into the Energy Modernization Plan?
- d. Please provide suggestions regarding maximum allowable contributions from clean resources (i.e. targets for specific resources). For example, should there be a maximum percentage of nuclear or solar that contributes to the 80% target, or should the contributions be flexible?
- e. Should distributed energy resources ("DER") be factored into the 80% target?
- f. How should plans for customer-owned DER be factored into the 80% target?
- g. Please comment on the efficacy of current REST policies and provide suggestions for any specific improvements.
- h. How can the REST and CREST policies be integrated?
- i. How will CREST address the rapidly changing energy landscape (i.e. changing/future technologies)?
- j. Please comment whether, the renewable requirement in the REST rules could or should be increased, to help achieve the 80% clean resource target by 2050.

- k. With regard to CREST, should there be specific targets by clean energy type (i.e. renewable, biomass, nuclear, etc.)?
- l. Are there any qualitative benefits to CREST that should be considered?
- m. How would CREST affect job growth in Arizona?
- n. What is the total residential/commercial customer cost with and without CREST?
- o. As a part of CREST, should nuclear power be expanded in Arizona? If so, is it advisable to do so while there is no current long-term solution for storage of high level radioactive waste?
- p. Please comment on why or why not nuclear energy should be considered a renewable energy source.
- q. Please comment regarding what would happen over the next 30 years if Arizona does not adopt CREST in terms of:
 - i. Ratepayer costs?
 - ii. Electric Grid Stability and Security?
 - iii. Peak Energy Usage?
 - iv. Arizona Economy?
 - v. Arizona Air Quality?
 - vi. Other?
- r. Please comment on the “Renewable Electricity Futures Study” (“Study”) completed by the National Renewable Energy Laboratory (“NREL”) and others. Specifically, please comment regarding the underlying technology cost assumptions, performance assumptions, the energy model used, the timeliness of assumptions, other data inputs, and the overall methodology.
- s. Please comment regarding the rigor and robustness of the Study.
- t. Should there be ongoing review of the conclusions expressed in the Study? If so, how should they be conducted, and by whom? Is such a review planned by NREL?
- u. Please comment regarding any other analyses, journal articles or reports which support, critique or rebut the conclusions of the Study.
- v. Please comment regarding whether there are any readily available studies, reports, or calculations on reduced water usage associated with a large clean resource goal (50% or greater). If so, please identify them.
- w. Please comment on the likelihood of technological advances impacting the renewal of Palo Verde’s licenses beyond 2045.
- x. Please comment on any costs associated with keeping Palo Verde operational beyond 2045.
- y. Please comment on the impact to the 80% clean resource target if Palo Verde generation is included or excluded.
- z. Please comment on any opportunities and the associated costs to further deploy nuclear resources in the State to help achieve the 80% clean resource goal.

- aa. Please comment on the Energy Modernization Plan's suggestion of ultimately achieving a goal of 100% from clean energy sources.

4. Energy Storage

The Energy Modernization Plan proposes a target of 3,000 MW of storage by 2030.

- a. Please provide comments regarding the proposed amount of storage by 2030. For example, is a storage target of 3,000 MW too high or too low?
- b. Please discuss the costs associated with different forms of storage and the extent to which those costs are expected to decline in the future.
- c. Please describe what would be the most accurate method for estimating costs and net cost benefits for the development of this amount of energy storage, or the amount of energy storage you deem appropriate.
- d. Please describe how the obligation for meeting the storage target would be best allocated among utilities.
- e. Please describe the most realistic timeline for achieving such a storage target and whether interim targets should be established. For example, what timeframe is the most reasonable for the majority of the 3,000 MW to come online?
- f. Is there a forecast of declining costs which signal a "tipping point" which would make 3,000 MW achievable before 2030?
- g. Please discuss the technical and operational issues, if any, impacting the efficiency of energy storage?
- h. What are typical energy conversion efficiencies for energy storage technologies? (i.e. Lithium ion batteries, pumped hydro, flywheel, etc.)
- i. Should there be any consideration and/or prioritization of different storage functions (e.g. peak shaving, grid support, etc.) within the 3,000 MW target?
- j. Please comment on and describe any resource configurations, which include storage (i.e. solar PV plus storage), that would be cost competitive with resources currently used to address peak demand (i.e. combustion turbines).

5. Forest Health/Biomass-Related Energy

The Energy Modernization Plan proposes a target of procuring 60 MWs of biomass derived energy for state-regulated electric utilities that deliver more than 100,000 MWh annually.

- a. Please provide comments regarding the respective roles and fiscal responsibilities of the Federal and State Land management agencies to address concerns regarding overgrown forests.
- b. How will procurement of 60 MWs of biomass benefit individual ratepayers of regulated utilities (investor owned and/or nonprofits)? Will this require ratepayers to pay more for electric service?

- c. Please provide comments regarding the length of time and expense of environmental processes required by state, local, and federal agencies for the siting and permitting of biomass facilities and any necessary transmission lines and roadways.
- d. What is the environmental/habitat impact of removing biomass from Arizona forests?
- e. What is the environmental/habitat impact of generating electricity by biomass?
- f. Please provide comments and data regarding the estimated cost to ratepayers if the 60 MW goal is mandated for regulated utilities.
- g. Please provide comments regarding whether entities not regulated by the Commission should be subject to a biomass goal as it aims to resolve a statewide problem. If so, what is the best method to ensure these entities contribute to a biomass goal?
- h. Please comment on the Energy Modernization Plan goal to generate a total of 60 MWs of electricity from biomass.
- i. How could this goal be implemented and apportioned among utilities? Please describe the cost of permitting and construction of adequate generation sources and attendant infrastructure to produce 60 MWs of electricity.
- j. Please comment on transmission costs to deliver biomass produced energy via non-owned transmission lines.
- k. Please comment regarding typical permitting and construction timelines for the construction of biomass facilities and attendant infrastructure such as substations, switchyards, transformers, transmission lines and roadways?
- l. Please comment regarding the current data and research regarding the costs of bioenergy and the conclusion that “the average residential customer’s bill will increase by \$1.54 for 57 MW of bioenergy statewide, and \$2.57 for 87 MW of bioenergy.”
- m. Please comment regarding the benefits of forest thinning and how these benefits would factor into utility ratemaking.

6. Dispatchable Clean Energy

The Energy Modernization Plan would require regulated utilities to set a Clean Peak Target (“CPT”) that incorporates existing and new clean energy sources to be deployed during peak hours and increases baseline by 1.5% per year on average until 2030.

- a. Please comment regarding how to ensure dispatchability of clean energy resources, and include a discussion of technologies and costs.
- b. Please comment regarding the costs and impacts of energy storage to reduce demand during peak hours.
- c. Please comment regarding the measurement of improvement of air quality by reducing the need for rapid cycling from gas turbines.
- d. Please comment regarding how the addition of dispatchable clean energy could provide room for baseload power to operate efficiently.
- e. Please comment on the CPT proposed in the Energy Modernization Plan.

7. Energy Efficiency

The current Energy Efficiency (“EE”) rules are scheduled to sunset in 2020 and the Energy Modernization Plan proposes to initiate a process to implement a new EE policy to complement the new 80% clean energy resource target.

- a. Please provide detailed comments regarding appropriate EE initiatives, including percentages of EE and/or demand-side management (“DSM”) reduction costs together with a proposed timeline (which includes milestones), and any recommended EE rule changes.
- b. Please comment regarding how EE should be addressed in any resource planning process.

8. Electric Vehicle

The Energy Modernization Plan includes a provision that regulated utilities propose plans to include electric vehicle (“EV”) infrastructure.

- a. Should the Commission consider these infrastructure plans as part of its Integrated Resource process?
- b. What impacts, if any, would Commission approval of utility-owned EV infrastructure plans have on future “prudency” determinations in rate cases?
- c. Please provide comments regarding estimates of future deployment of EVs nationally and in Arizona.
- d. Please provide information on the EV programs in other states.
- e. Please provide comments regarding the costs of implementing EV infrastructure, and a proposed means to recover those costs, including potential tax incentives, or utility incentives for customers using EV infrastructure.
- f. Please provide comments regarding metrics and a methodology to measure potential impacts to air quality (including reductions of criteria pollutants) from the potential widespread adoption of electric vehicles.
- g. Please provide comments regarding how to plan EV infrastructure on major highways and interstates, and what collaboration with other agencies would be necessary or advisable.
- h. Please identify any highway funds or other federal monies and grants which may be available to plan and construct such facilities.
- i. Please provide information regarding other utilities in the country who may have undertaken similar efforts to develop EV infrastructure.
- j. When considering development of EV infrastructure, which cost-effectiveness test, or tests, should be utilized to determine the appropriateness of such infrastructure investments?
- k. In keeping with the intent of the Electric Vehicles section of the Energy Modernization Plan, should the use of natural gas fueled vehicles be encouraged?

- l. Should the use of vehicles fueled with Renewable Natural Gas (“RNG”) be encouraged? If so, should an incentive program like California’s Low Carbon Fuel Standard be encouraged by the Commission?
- m. Please comment on the Arizona Department of Environmental Quality (“ADEQ”) estimate that the cost to Arizona for developing and implementing a more stringent air quality plan to reduce emissions would range from \$76 million to \$380 million. How would these costs be paid, and by whom?
- n. What economic impacts would the adoption of an EV infrastructure plan have on Arizona’s economy?

9. Resource and Transmission Planning

The Energy Modernization Plan proposes to amend the Integrated Resource Plans (“IRP”) process to support and promote its policies.

- a. Should the IRP process be modified? If so, please explain how it should be modified.
- b. The Commission conducts a Biennial Transmission Assessment (“BTA”) as required by ARS 40-360.02 (G). The purpose of the BTA is to examine the adequacy of existing and planned transmission facilities to meet Arizona’s energy needs in a reliable manner.
 - i. How does the Energy Modernization Plan impact the BTA?
 - ii. Should the IRP process and BTA be evaluated jointly?
- c. The current IRP process applies only to specific regulated utilities. How does that fact impact the Energy Modernization Plan?
- d. Please comment regarding the current IRP process, and how it should be modified to effectuate the Energy Modernization Plan.
- e. Please comment regarding the 5-year action plans of the utilities and whether the plans should include greater Commission involvement? (For example, explicit approval and or denial of the plans, direction on procuring specific resources to achieve the goals of the Energy Modernization Plan, etc.)
- f. Please comment regarding the 5-year action plans of the utilities and whether it would be beneficial to have more stakeholder engagement in the development of the plans.

10. Process-Related Issues

- a. Please comment on whether consolidating open dockets would aid in efficiently analyzing proposed rule changes.
- b. Should the dockets listed below be part of such consolidation?
 - i. REST Rule Revisions (Docket No. E-00000R-16-0084)
 - ii. EE Rule Revisions (Docket No. E-00000Q-16-0289)
 - iii. Role of Forest Bioenergy in Arizona (Docket No. E-00000Q-17-0138)
 - iv. Future of Navajo Generating Station (Docket No. E-00000C-17-0039)

- v. Evaluating Arizona's Current and Future Baseload Security (Docket No. E-00000Q-17-0293)
 - vi. Innovations and Technological Developments in Generation and Delivery of Energy (Docket No. E-00000J-13-0375)
- c. Are there other dockets that should be included in this list?
 - d. Should the implementation of the Energy Modernization Plan be accomplished in a single or multiple rulemaking docket(s)?
 - e. What Parties (regulated and non-regulated entities) should participate in the docket?
 - f. What other process issues are raised and how can those issues best be addressed?

11. Security and Reliability/Resiliency

- a. Discuss any operational and reliability issues associated with implementation of the Energy Modernization Plan.
- b. Are there measures that should be taken to increase overall grid reliability and resiliency in Arizona?
- c. Discuss any security issues that may arise as a result of the Energy Modernization Plan. What can be done to address these issues?