

Arizona's Energy Modernization Plan (ACC)

Proposed by Arizona Corporation Commissioner Andy Tobin
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INTRODUCTION

For nearly a century, Arizona has been a national leader in the development of clean energy resources to power our state's rapidly growing economy, from the deployment of hydropower on the Salt and Verde Rivers in the 1920's to the construction of the Palo Verde Nuclear Generating Station in the 1970's. More recently, the state's Renewable Energy Standard and Tariff (REST) has made Arizona a national leader in the adoption of renewable energy. It has been over a decade since the Arizona Corporation Commission passed the REST and the energy landscape in Arizona and across the country is drastically different today. For the past few years the Corporation Commission has convened multiple workshops related to modernizing Arizona's energy policies. This includes workshops on energy technology innovation, battery storage, peak demand reduction, baseload security, biomass related energy, etc. From these workshops, I have concluded that Arizona's energy policies need to be modernized to reflect the major changes occurring in the energy space and the information gathered from these workshops has helped guide the development of the policies in this plan with the aim of doing just that.

Accordingly, I would propose the Corporation Commission have an opportunity to discuss and consider the following policy at an upcoming public meeting.

Arizona's Energy Standard Modernization Plan is a comprehensive update to Arizona's energy policies to accomplish cleaner energy resources, lower prices for consumers, and greater grid security. The plan revolves around these main topics.

1. Policy Framework
2. Clean Energy
3. Energy Storage
4. Forest Health – Biomass Related Energy
5. Dispatchable Clean Energy
6. Energy Efficiency
7. Electric Vehicles
8. Energy Planning

The guiding principles outlined below should serve as guidance when implementing energy policy in this state.

GUIDING PRINCIPLES

Resiliency

When implementing energy policy, Arizona will ensure that its energy system, from generation to distribution, is capable of providing the state with safe and reliable power by taking the following steps:

1. *Ensuring that the deployment of new technology does not jeopardize reliability or grid security*
2. *Working with state and federal regulators to ensure Arizona continues its record as a top-tier state for reliability and security*

- 3. Focusing on innovative solutions to reduce summer peak demand with clean energy resources*
- 4. Maintaining top level cyber and physical security protocols and procedures*

Affordability and Reliability

As a basic, life-sustaining commodity, nothing is more important than ensuring that energy in Arizona remains affordable and reliable for all residents. Accordingly, Arizona will take steps to ensure that its pursuit of a clean energy future does not come at the expense of these principles, including:

- 1. Thoughtful planning so that the transition to clean energy is gradual and considers the useful life of existing facilities while not locking into new non-clean energy investments that may be stranded in the near future*
- 2. Taking advantage of economies of scale, while recognizing the role that customer sited technology can play in accomplishing state goals*
- 3. Preservation of existing clean and affordable generation assets*
- 4. Benefiting from low cost clean energy flows from neighboring states*
- 5. Incorporating more sophisticated system modeling and forecasting in planning processes*
- 6. Reinforcing the grid and empowering customers through grid modernization efforts*
- 7. Offering dispatchability price signals to intermittent resources*

Innovation

Arizona will lead the nation in the deployment of clean energy technologies by:

- 1. Developing a coordinated statewide energy policy*
- 2. Deploying grid optimization technologies*
- 3. Encouraging the production and adoption of electric vehicles*
- 4. Participating strategically in regional energy markets*
- 5. Continuing to be a leader in energy storage*
- 6. Maximizing the use of non-wires alternatives*
- 7. Maintaining focus on economic development through competitive electric rates*
- 8. Exploring business model progression*

Economic Development

Inherently, a key goal of any energy policy is economic development. The nexus between competitive energy rates and economic development is one that either enhances the State's economic development efforts or hinders it. Arizona is committed to enhancing economic development through energy policy by:

- 1. Providing fair competitive energy rates*
- 2. Developing innovative pricing and billing structures*
- 3. Supporting customer choice whenever possible*
- 4. Considering both the direct and indirect effects of attracting businesses*
- 5. Cooperating internationally on energy issues*

Resource Diversity

Unlike other states that have banned certain fuel sources, or switched to a single fuel source because of its low price, Arizona will maintain its commitment to resource diversity to protect against interruptions in supply, fluctuations in price, and the intermittency of weather. This pertains not only to energy based resources but to capacity oriented generation as well.

MODERNIZED POLICIES

I. **Policy Framework** - One of the cornerstones of Arizona's current energy policy is the REST. This policy has helped spur a thriving renewable energy industry here in the state. **Using the REST's policy framework as the foundation for modernizing the state's energy policy, the REST will now be renamed the Clean Resource Energy Standard and Tariff (CREST).** This name change will allow for the development of broader diversified energy policies relating to clean energy resources, energy storage, and energy efficiency, not just those related to renewable energy. The focus of the CREST is to advance responsible clean energy policies in the state. The underlying REST targets and associated eligible technologies shall remain unchanged. Separate surcharges may be used in the collection of funds to implement these policies allowing for the tracking of individual policy costs.

II. **Clean Energy** – Arizona's energy future should consist of policies that work towards a singular unifying goal. **The singular unifying goal is to have Arizona's economy powered by clean energy sources that make up at least 80 percent of the state's electricity generating portfolio, by 2050, with the ultimate goal being 100 percent.** Clean energy sources are defined as generation resources that operate with zero net emissions beyond that of steam, including energy efficiency (EE). Each year, affected utilities will file a CREST Implementation Plan describing their strategy to achieve their goal of reaching 80 percent use of clean energy sources and a Compliance Report detailing their progress. The changes necessary to achieve this target will significantly transform the state's energy industry. The process to achieve this ambitious goal will be slow and steady and the Guiding Principles, outlined above, will help create the path to accomplish this goal. Reaching this target will show Arizona's commitment to maintaining clean air and water. It will also greatly reduce our state's reliance on imported fuels and provide new economic opportunities for the future of our great state.

III. **Energy Storage** – Low priced, and sometimes free electricity, is being exported from surrounding states; at the same time, increasing peak demand in Arizona is causing new expensive investments for ratepayers. Energy storage can leverage low priced energy during the day and reinject it at peak times to reduce the long-term costs of these projected investments for consumers. Moreover, energy storage provides reliable system back up and stability, as seen in the California Aliso Canyon gas leak as well as the islands impacted by hurricanes Irma and Maria. **As such, and in anticipation of attracting large-scale energy storage solutions, the state shall pursue a target of 3,000 MW of deployed energy storage by 2030.** Eligible technologies shall include the following categories: electrochemical, mechanical, thermal, and gravitational. The target shall encourage a variety of sizes, ownership structures, and technologies, to be deployed in a prudent and responsible manner. Each year, affected utilities will file detailed programs within their CREST Implementation Plan. Progress toward the 2030 target shall be included in the annual CREST Compliance Filings. An analysis in the planning process should be presented considering how various levels of energy storage investment will impact grid operations, cost-effectiveness, and align with national energy storage trends. In order to reduce curtailment and unlock the peak shaving and grid support capabilities of existing renewable resources, priority should be given to exploring retrofits of existing renewable energy resources that currently lack energy storage solutions.

IV. **Forest Health – Biomass Related Energy** – Wildfires, made worse by unhealthy forests, threaten lives, property, watersheds, wildlife, businesses, and grid reliability. From 2002 - 2017, the state has seen over 5.2 million acres burned, 29 lives lost, and total expense of over \$162 million due to Arizona wildfires.¹²³ Biomass facilities offer a proven solution in helping solve the unhealthy forest problem, while providing stable priced carbon neutral energy. In order to start the process of rebuilding healthy and sustainable forests in Arizona, nearly 50,000 forested acres a year have to be thinned to reach the goal of treating one million forested acres in the next 20 years. The treatment of 50,000 forested acres a year will generate enough biomass to support 90

¹ National Interagency Fire Center, "Fire Information, Statistics, Historical Year-end Fire Statistics by State." https://www.nifc.gov/fireInfo_statistics.html

² National Interagency Fire Center, "Wildland Fatalities by Year." https://www.nifc.gov/safety/safety_documents/Fatalities-by-Year.pdf

³ Arizona Department of Forestry and Fire Management, "Internal Cost Spreadsheets Years 2002-2007 and years 2008-2017."

nameplate capacity MWh of biomass derived energy yearly.⁴ The Corporation Commission regulates electric utilities that serve approximately 60% of customers in the state.

As such, to the benefit of Arizona citizens and the health of Arizona's forests, state regulated electric utilities, who deliver more than 100,000 MWh annually, shall share the costs and benefits of procuring a yearly proportional share of 60 MW of nameplate capacity biomass derived energy, through either bundled or unbundled renewable energy certificates. The fuel used to generate the biomass derived energy must come from high-risk fuel, sourced at least 80 percent from within the state of Arizona. The 60 MWs of nameplate capacity must be in-service by December 31, 2021 and the procurement should end no sooner than December 31, 2041.

Costs of procurement for biomass energy to fulfil this requirement should not exceed \$125/MW. Should potential costs exceed this amount, purchasing utilities must apply to the Arizona Corporation Commission for a waiver before executing a contract.

The procurement process may account for seasonal grid needs, by using such strategies as seasonal curtailment and strategic outages. The annual capacity factor of biomass generation facilities providing qualifying power, however, shall not fall below 70 percent in any given year. Should a plant's annual capacity factor fall below 70 percent, utilities purchasing electricity from these plants must file with the Arizona Corporation Commission a notice of noncompliance and apply for a capacity factor waiver, no later than April 1st of the year following noncompliance.

This biomass derived energy shall count toward each utilities' compliance with the unchanged REST targets and payment for the procurement shall be collected through each utilities' REST surcharge.

V. Dispatchable Clean Energy – Arizona has always been a leader in clean energy; from the nation's largest nuclear power plant to innovative solar plus storage installations, Arizona has built a successful industry with jobs spread across the state. Recently, the price of clean energy technology has dropped significantly, all while capabilities have increased. Unfortunately, current policies do not encourage the adoption of beneficial new clean energy sources, nor protect existing ones. Moreover, current intermittent renewable energy sources can crowd out crucial baseload resources during certain times of the day and introduces challenges to system reliability at scale due to lack of dispatchability. The state's consumer advocate office filed a plan to correct this, and use clean energy in a way that benefits all ratepayers by harnessing this energy to reduce peak demand in a policy labeled the "Clean Peak Standard."

Based on recommendations in that document, and after considering extensive information gathered in a variety of Corporation Commission workshops, regulated utilities shall set a Clean Peak Target (CPT) that incorporates existing and new clean energy sources. To set this target, regulated utilities shall quantify existing levels of clean resources deployed during peak hours to establish a baseline, and incrementally increase that baseline figure 1.5% per year on average until 2030. This shall ensure that Arizona continues to expand its use of clean energy resources, while also considering the overall impact that deployment of various resources will have on the grid's most expensive critical peak hours. Retrofitting existing renewable resources to maximize effectiveness during peak windows is permitted.

Each year, affected utilities will file detailed programs within their CREST Implementation Plan. Progress toward the 2030 target shall be included in the annual CREST Compliance Filing. Credit creation and counting for compliance shall be done in the same manner as the REST, with the new compliance window being each utilities'

⁴ Supported by testimony at Arizona Corporation Commission Forest Bioenergy Workshop, December 5, 2017.

four peak value hours each day (e.g. summer net load peak: 4pm-8pm) instead of the current 24-hour window. Shoulder months may have a different four-hour window or may be split into two separate two-hour windows.

VI. **Energy Efficiency** – Energy efficiency (EE) will be critical in helping the state meet the new 80 percent clean energy target. In 2017 alone, over 747,000 MWh’s in energy were saved in Arizona’s two largest regulated utility territories.⁵ The current EE Standard, however, is scheduled to sunset in 2020. **Within 120 days of this policy being adopted, the Corporation Commission shall initiate a process to implement a new EE policy, to be part of the CREST. This initiative shall complement the goal of achieving 80 percent clean energy resources by 2050, while reducing costs for ratepayers.** Demand Side Management type plans should continue to be developed to aid in the strategic deployment of EE measures. This may take place as part of the broader CREST Implementation Plan filing. The Demand Side Management funding structure shall also be maintained to track costs related to this specific policy.

VII. **Electric Vehicles** - The electrification of the transportation sector is critical to the state being able to meet its environmental regulations for air quality. Currently, parts of Arizona are considered in “moderate” nonattainment with EPA clean air standards. Such conditions impose millions of dollars of compliance costs on major industries looking to operate in Arizona. Estimates from the Arizona Department of Environmental Quality show that the costs of the Phoenix Metro area being in noncompliance could be over \$296 million dollars per year.⁶ Strategic electrification of the transportation sector will provide a valuable tool to address these issues and set the state on the path to a clean energy future. Arizona should take advantage of rapidly changing transportation technologies to help meet the state’s air quality goals and the new clean energy target while bolstering the state’s own economy by reducing out of state spending on fuel.

To aid in this strategic implementation, regulated utilities shall propose electric vehicle (EV) infrastructure in future CREST implementation plans for Corporation Commission consideration. Specifically, utilities should propose EV charging infrastructure (1) in new home construction programs, (2) in existing home programs, (3) for strategic commercial and industrial customers or large fleet owners, and (4) on major highways and interstates across their service areas to provide our citizens with charging options. Charging infrastructure should be deployed strategically and in high use or critical areas. Priority should be given to implementation plans where day time charging is encouraged.

VIII. **Energy Planning** - Currently, Arizona utilities use Integrated Resource Plans (IRP) to inform the Commission about the utility’s plans to provide safe, reliable, and affordable electric services. The lack of clear energy policy in the state has resulted in each utility using their own strategies as the guiding principles in developing their IRP. This process lacks the focus needed to move Arizona forward uniformly toward its clean energy future. **As such, the rules and regulations governing the IRP process shall be amended for the purpose of supporting and promoting the policies adopted herein. Of note, future IRP requirements shall have utilities analyze the potential utilization of existing transmission resources that are currently used below capacity and identify potential generation and storage additions that can be partnered with these resources to eliminate additional customer costs for incremental infrastructure costs.** Any future IRP filings should be placed on hold with the expectation of it being rescheduled, following the completion of the rulemaking process.

⁵ 2017 Integrated Resource Plans for APS and TEP. <https://www.tep.com/wp-content/uploads/2016/04/TEP-2017-Integrated-Resource-FINAL-Low-Resolution.pdf> and <https://www.aps.com/library/resource%20alt/2017IntegratedResourcePlan.pdf>

⁶ Arizona Department of Environmental Quality, “Technical Memorandum: Electric Vehicles in Arizona”

IX. **Continuous Oversight** – Because energy markets are continually evolving with the addition of new technologies, economic realities, and regulatory considerations, it is prudent that major state-wide policies be periodically reviewed to determine if they are meeting their intended goals or if they should be reconsidered in any way to be more effective in providing for the public good. **As such, this policy shall be formally reviewed in its entirety every four years by the Arizona Corporation Commission to identify any potential modifications, improvements, or course corrections.**