Arizona Public Service

First Public Integrated Resource Plan Stakeholder Meeting Minutes

Date	Location	Start	Stop
10/14/2026	Virtual via Microsoft Teams	9:00 a.m.	11:00 a.m.

MEETING OBJECTIVES

- Share an overview of the Integrated Resource Plan (IRP) process.
- Detail the tools and methodology used to develop APS's 2026 IRP.
- Highlight learnings APS's load forecast and its impact on future growth.
- Provide preliminary results of APS's ongoing IRP modeling and analysis.

Nathan Hogue | Senior Director, Resource Management | Keynote Introduction
Summary: Nathan opened the meeting with a keynote address emphasizing how APS prioritizes reliable and affordable service for customers. Nathan discussed key areas of focus for the Company, including the need for large-load customers to pay the costs associated with their growth, meeting the rising demand associated with Arizona's economic growth responsibly for all customers, and protecting the rates of existing customers. He also thanked IRP stakeholders and meeting participants for their role in shaping a resource plan responsive to the state's evolving needs.

Tara Beske | APS/Business Advisor, Resource Planning | IRP Process and Planning Framework
Summary: Tara provided an overview of the IRP process and the elements that inform its development. The process culminates in a Preferred Portfolio that will serve as APS's resource planning blueprint over the next 15 years. The Preferred Portfolio is based on evaluating numerous portfolios that consider potential future states of APS's electric system and the utility industry. These portfolios cover many different variables, including demand level, fuel and market outlooks, supply- and demand-side resource selections, transmission availability, and differing levels of resource costs to identify the most reliable and affordable solution for customers. Tara also detailed several stakeholders who assist in this effort, including APS's Resource Planning Advisory Council, PowerGEM, and E3.

Mohamed Ali Saafi | APS/Business Consultant, Resource Planning | IRP Modeling Methodology
Summary: Mohamed shared specific modeling efforts that define the 2026 IRP. Using PLEXOS, an industry-leading modeling software, APS analyzes data including resource adequacy inputs based on SERVM model reliability assessment results, fuel prices, resource characteristics, and financial assumptions. This information is used to conduct the capacity-expansion and hourly production-cost analyses that will inform the IRP's Preferred Portfolio. Recent planning enhancements include generation and transmission co-optimization, longer-term valuation, more detailed operational and environmental constraints, seasonal outage rates, fuel and gas-transportation limitations, and expanded quality control.

Participant Questions:

- **How is APS testing / validating / verifying that the portfolios which PLEXOS creates will meet APS's reliability metrics?**
    - APS incorporates reliability requirements, including projected peak load and planning reserve margin requirements, into its capacity expansion model. Each portfolio is evaluated against these requirements and is considered feasible only if it satisfies the constraints established in the model. The modeling results therefore confirm whether a portfolio meets the reliability requirements incorporated into the capacity expansion analysis.

- **In order to model multiple new options for transmission, does PLEXOS split the APS network into multiple geographic nodes?**
    - We have incremental deliverability that we can get from different geographical parts that we represent from nodes. Each one of these nodes has a transmission line that will connect it to the main node, which represents the main load and demand needed. The decision to build transmission expansion, or not, is within the transmission expansion optimization module of PLEXOS, as it will evaluate between the different nodes, the cost of building an additional transmission line, and whether there is enough existing transmission capacity. The different geographic nodes all contribute in one direction towards APS's system loads.

- **How does APS take into account firm fuel transport and related costs?**
    - PLEXOS takes into account the needed gas transportation requirements. Included in the modeling is existing gas transportation access that the Company already has access to and, starting in 2031, it includes additional fuel access in the form of a new pipeline expansion. Existing gas contracts are represented through monthly daily maximum limits. Future pipeline expansion costs are reflected in the revenue requirement analysis. In addition, the Four Corners coal offtake contract is explicitly modeled, including maximum contracted coal volumes and associated liquidated damages, allowing the model to economically optimize coal dispatch and capacity factors while avoiding uneconomic fuel costs.

- **How does APS produce its Planning Reserve Margin?**
    - Using the Strategic Energy Risk Valuation Model (SERVM), APS analyzes possible future system conditions based on weather changes and the forced outage rates of units. This is done to ensure that APS meets the Loss of Load Expectation (LOLE) target of 0.1 days per year. These results produce an expected load value that meets this requirement under the most challenging system conditions that APS can reasonably expect over the planning horizon. This value represents the Planning Reserve Margin (PRM) that will provide added resource flexibility in circumstances when customer need is greater than our planned peak load.

- **What different capacity resources did APS include in its model?**
    - APS includes a wide range of candidate resources, including thermal (CTs and CCs), nuclear, solar, wind, battery storage, concentrated solar power (CSP), biomass and geothermal. Each resource is assigned a firm capacity value based on its Effective Load Carrying Capability (ELCC). Solar, wind, and battery storage are modeled in successive tranches and declining ELCC values, reflecting their diminishing incremental contribution to system reliability as penetration increases.

- **How does APS handle fuel contracts in their modeling where there is a fuel minimum?**
    - The PLEXOS model does not enforce minimum fuel requirements by forcing units to dispatch. Instead, minimum fuel obligations are represented through liquidated damages, allowing the model to evaluate whether it is more economical to dispatch the unit and meet the minimum fuel requirement, or incur liquidated damages for not meeting the requirement. The model selects the most cost-effective option.

- **What is APS's source of the information for production costs (is it public information or information from APS's 2025 All-Source Request for Proposal)?**
    - APS uses a blend of data sources to come up with capital and Operation and Maintenance (O&M) costs used in the IRP. Some sources we have leveraged are the National Laboratory of the Rockies (NLR) Annual Technology Baseline (ATB) report, U.S. Energy Information Administration (EIA) data, as well as historical All-Source Request for Proposal (ASRFP) results.

- **What generation that is currently not online on the APS system will be hardcoded into all portfolios when analyzing IRP generation options?**
    - Existing signed contracts and direct pricing contracts (DPC) units are included in the model as committed resources, separately from new candidate resources evaluated for future capacity expansion.

- **Will the IRP report provide a table that shows the effective or minimum PRM used in the modeling?**
    - We will provide tables that list the megawatts (MW) necessary to maintain our PRM in the IRP.

- **Are you able to share how you are approaching the Investment Tax Credit (ITC) cliffs for Palo Verde (PV) and Battery Energy Storage Systems (BESS) on the cost side? Also, are you able to share the technologies that were evaluated for 8hr+ storage?**
    - We include the ITC benefits for technologies to the extent that they will be available under current legislation. We evaluated pumped hydro and 8-hour batteries as the most mature forms of longer duration storage.

Ross Mohr | APS/Manager, Energy & Revenue Analysis | Load Forecast Results

Summary: Ross shared insights from APS's load forecasting studies, a key component of the IRP, and the challenges presented by current industry conditions. Ross reported that APS expects energy use to exceed 80,000 GWh in 2041, more than double the 2026 level. APS's current peak demand record is 9,166 MW, set this past summer, and peak demand is anticipated to approach 14,500 MW by 2041. Large-load customers account for approximately 76% of projected energy growth and are expected to increase from 17% of energy use in 2026 to 47% by 2041. Although planning for large-load customers presents a relatively new forecasting challenge, APS seeks to manage risk by evaluating project size, timing, ramp rate, delay risk, and financial commitment, while also accounting for hotter weather, energy efficiency, and distributed generation.

Participant Questions:

- **How does APS's forecast take into account Electric Vehicle (EV) usage and its charging load shape?**
    - The EV charging load shape in the forecast is a combination of residential charging at home as well as public charging. That load shape also reflects the rate structure. The forecast includes an expectation of some charging during the middle of the day, but then the load shape in the model really has most of that charging happening overnight, taking advantage of off-peak rates.

- **What are the thresholds that customers must meet to be included in the forecast?**
    - For a specific customer to be included in the forecast, APS must have committed to serve them. There is currently a group of customers that APS has committed to serve, going back several years, starting around the time of the 2023 IRP. More recently, prospective customers seeking service enter a queue process. As prospective customers' plans begin to materialize and take shape, they must sign agreements with financial commitments, which would allow them to be included as part of forecasts moving forward.

- **What pressures do you see from large load customers on resource planning compared to residential customers?**
    - It is true that large load customers usually require a different portfolio of resources in order to maintain reliability for them, due to the large loads that these customers typically bring to the system. The optimization tool used in the 2026 IRP, PLEXOS, recognizes the fact that there are these higher energy needs and optimizes for the right blend of generation resources that can meet both that energy and capacity needs going forward.

- **How are energy efficiency and distributed generation accounted for in the load forecast?**
    - APS leverages external consultants in the development of energy efficiency potential studies and the adoption rates of distributed generation going forward, in particular, rooftop solar. Those entities help us determine what is driving customer adoption of those different technologies and how we can then forecast the impact of those technologies on the load going forward. APS incorporates those forecasts as an offset towards our overall load growth needs.

Mike Eugenis | APS/Director, Resource Planning | Preliminary IRP Portfolio Results

Summary: Closed the meeting by discussing preliminary IRP results that support an "all-of-the-above" strategy in a rapidly changing environment. Preliminary IRP results show that APS anticipates the addition of several gigawatts of near-term utility-scale solar and battery storage, along with additional natural-gas transportation and generation, transmission expansion, and the continued evaluation of emerging

technologies such as nuclear, geothermal, and long-duration storage. The Preferred Portfolio's extension of Four Corners beyond 2031 will contribute to reliability while also preserving customer value by deferring needed resource replacements into future years. Mike also confirmed that the IRP continued to select natural gas under higher capital costs and that lower clean-resource costs added solar but did not eliminate the need for dispatchable capacity during overnight and early-morning risk periods.

Participant Questions:

- **Can you share how there is a cost savings associated with the continued operation of Four Corners, when in both presented cases the plant ultimately is retired?**
    - What is being shown is the impact of deferring the investments that are required to replace Four Corners across this period. To the extent that APS no longer needs to procure resources in 2031 and bring those resources to fruition, the Company has more time to procure and build the infrastructure necessary to support the replacement of Four Corners. There is a cost savings associated with that deferral, which is reflected in the cost savings associated as part of the portfolio results.

- **How were tax credits incentives for various resources considered in the IRP?**
    - The industry is seeing a lot of change in the federal energy policy landscape and nobody knows what will happen going forward as it relates to federal energy policy. The 2022 Inflation Reduction Act had a broad application of tax credits for clean and renewable technologies, and last year's One Big Beautiful Bill Act, which materially changed those incentives, shows that there is support on the other side of that equation as well. The idea behind studying what is a lower capital cost for some of those resources is to understand how potential impacts to the affordability of certain technologies may influence APS's resource planning decisions.

- **Does APS's modeling contain the fuel contract minimums?**
    - Yes, APS includes all aspects of existing fuel contracts in the modeling and it also has the ability to optimize taking a lower level of burns or a lower level of energy from a specific plant and potentially pay a liquidated damage associated with that if that ends up being a total lower cost to customers. Through our modeling, APS is always optimizing for what is the least cost to customers.

- **What motivated APS's decision to limit the model from selecting four-hour batteries?**
    - APS has leveraged more battery energy storage adoption than other large utilities in the state. APS will have close to 6 gigawatts of battery energy storage on its system prior to 2030. APS found in our resource adequacy analysis that the ELCC of that technology, and the reliability benefit that it provides in its ability to serve the new load going forward, is dramatically lower. That is largely due in part to the amount already procured as well as the changing load forecast that we see going forward. While there is a great benefit from having this storage on the system now as it allows the Company to take advantage of negatively priced energy, going forward there is limited benefit to having a storage duration that is so small. To optimize our modeling, APS chose to model the six-hour and eight-hour battery energy storage options.