



Integrated Resource Planning Process

September 30, 2025

Agenda

- 1 Safety Minute/Introductions
- 2 Review and Charter
- 3 IRP Process
- 4 Modeling Inputs & Assumptions
- 5 Portfolios
- 6 Wrap-Up



Safety Minute & Logistics

- In case of emergency, proceed down the stairs, out the doors, and gather on the lawn of the Children's Museum just to the south
- Restrooms
- Cafe



Introductions

- Your name
- Who you represent



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Review and Charter

Meeting Review: August 28

- Slides and minutes available on tep.com/RPAC
- Collaboration Principles
 - Keep dialogue respectful and inclusive
 - Prioritize transparency and trust
 - Encourage active participation
 - “Speak up, step back”



RPAC Charter Updates

Refreshed Priorities:

- **Transparency and sincerity**
- **Respectful and inclusive communication**
- **Active listening, balanced participation**
- **Collaboration and compromise**

*Updated charter will be emailed to participants for feedback. Feedback window will be closed Oct 24.



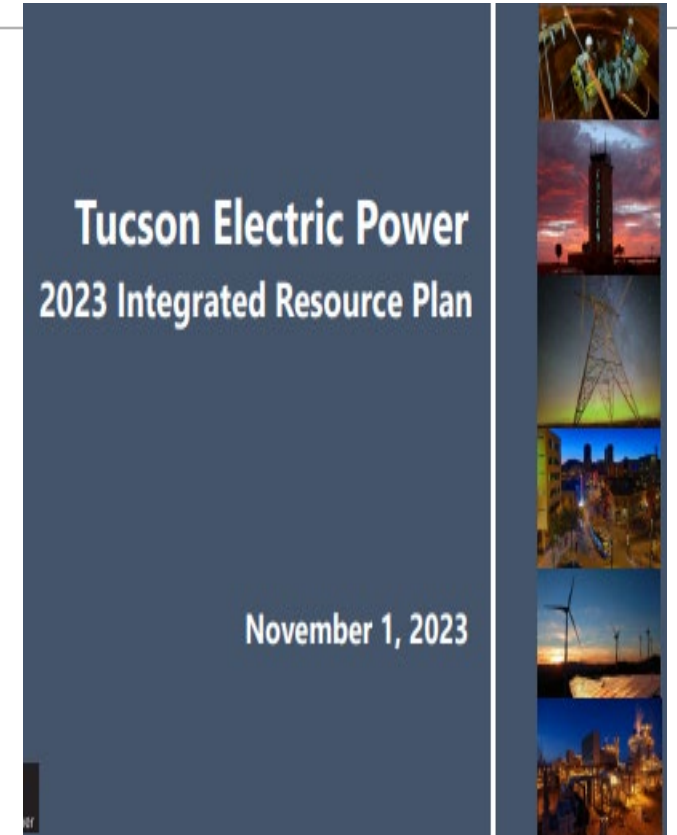


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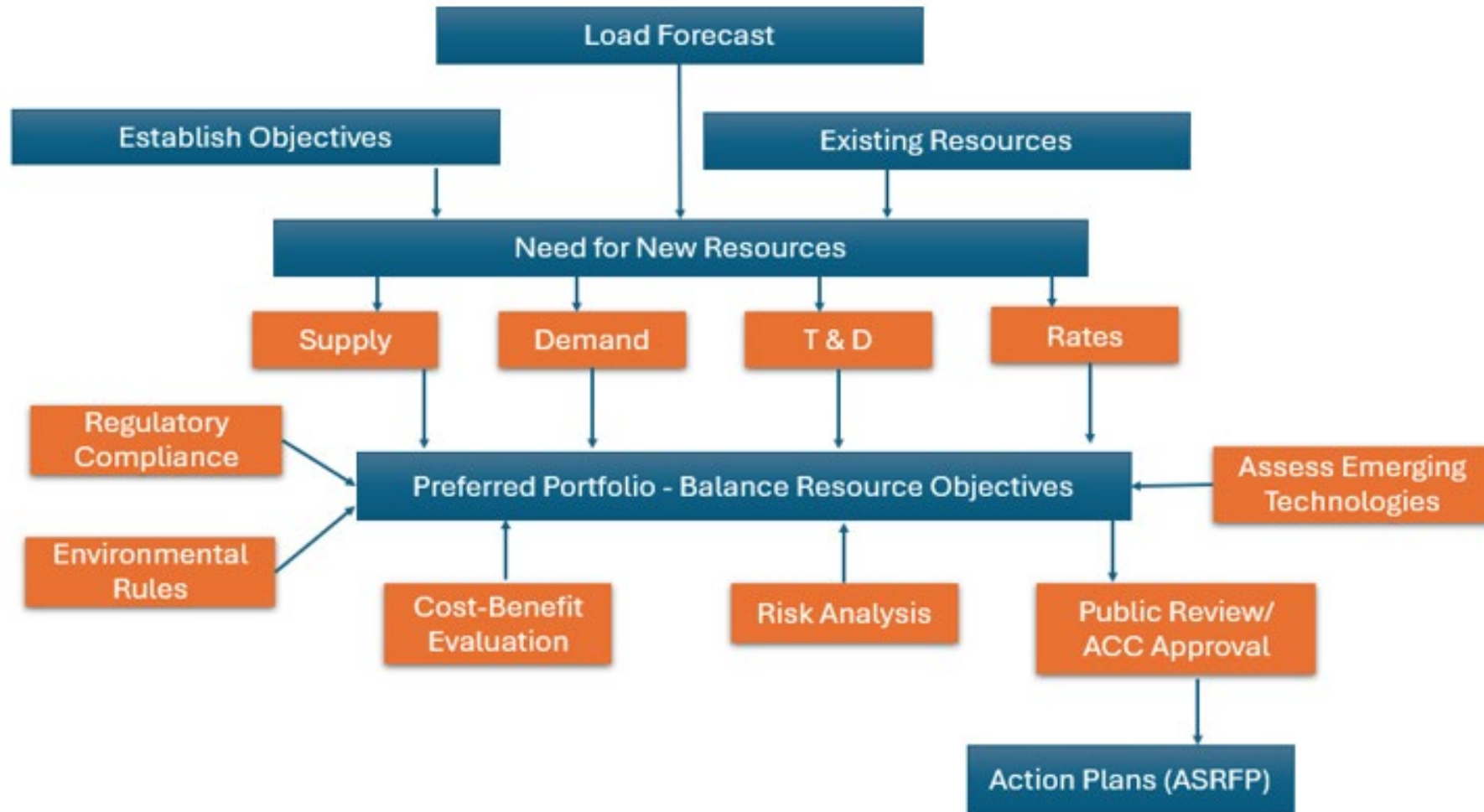
Integrated Resource Plan (IRP) Process

What is IRP

- An Integrated Resource Plan is a comprehensive decision support tool and long-term roadmap for a utility to meet its projected energy needs using both supply and demand side resources while ensuring reliable service for customers in a cost-effective way.
- The IRP process is subject to: reliability requirements, regulatory requirements, operational constraints, environmental factors, and forward market uncertainties.



IRP Process

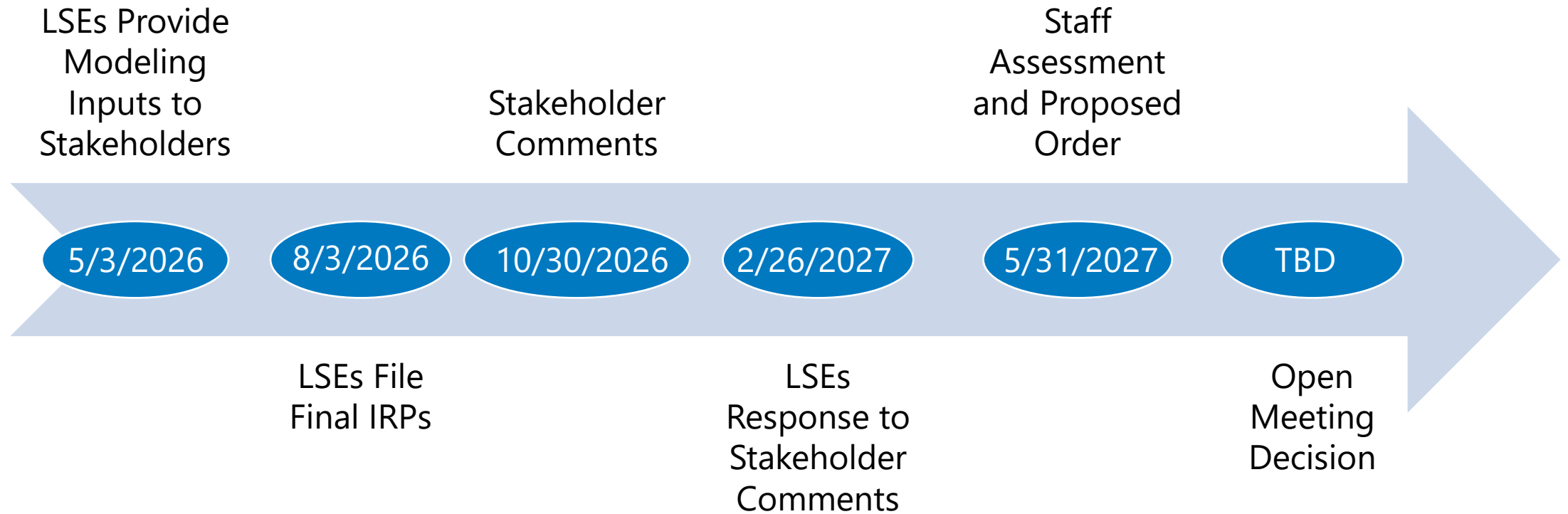


Regulatory Compliance and Public Oversight

- Governed by Arizona Corporate Commission (ACC)
 - File IRP every three years
 - 15-year forward looking resource plan
- Comply with Environmental Rules
- Stakeholder Engagement
 - Resource Planning Advisory Council (RPAC)
 - ACC Workshops



IRP Timeline





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Modeling Assumptions

Portfolio Modeling Process

01

Inputs

- Gather Data
 - Internal
 - External

02

Long-Term Capacity Expansion Model

Aurora, an energy market simulation software, selects resource additions and retirements based on economics.

03

Production Cost Model

Aurora runs an hourly simulation that dispatches all existing and new resources to meet forecasted demand, minimizing total system costs.

04

Outputs and Post-processing

- Extract Data
- Data Cleansing & Integration
- Calculate Revenue Requirements

LTCE: Long-Term Capacity Expansion
PCM: Production Cost Model

Inputs



Load
Forecast



Existing
Resources



Costs



Constraints



Outages



Transmission

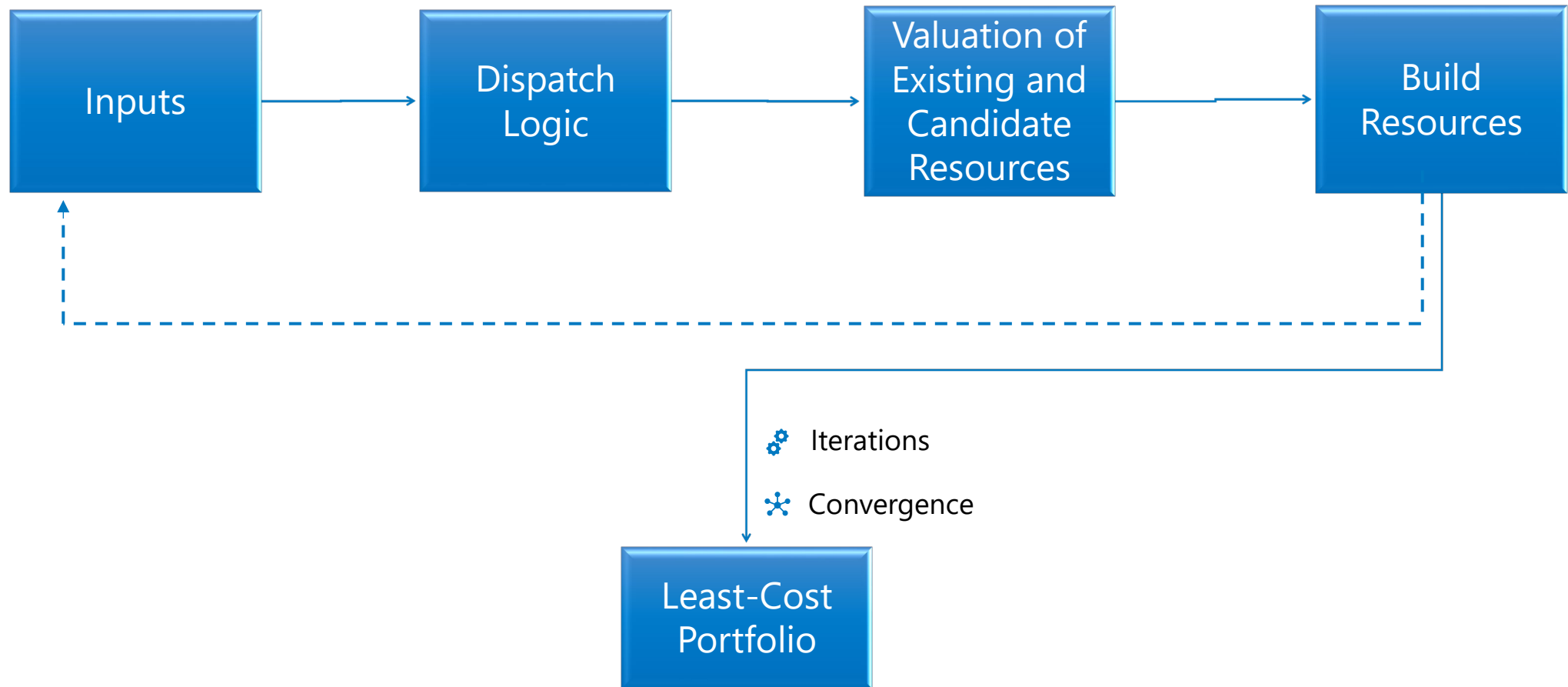


Resource Adequacy

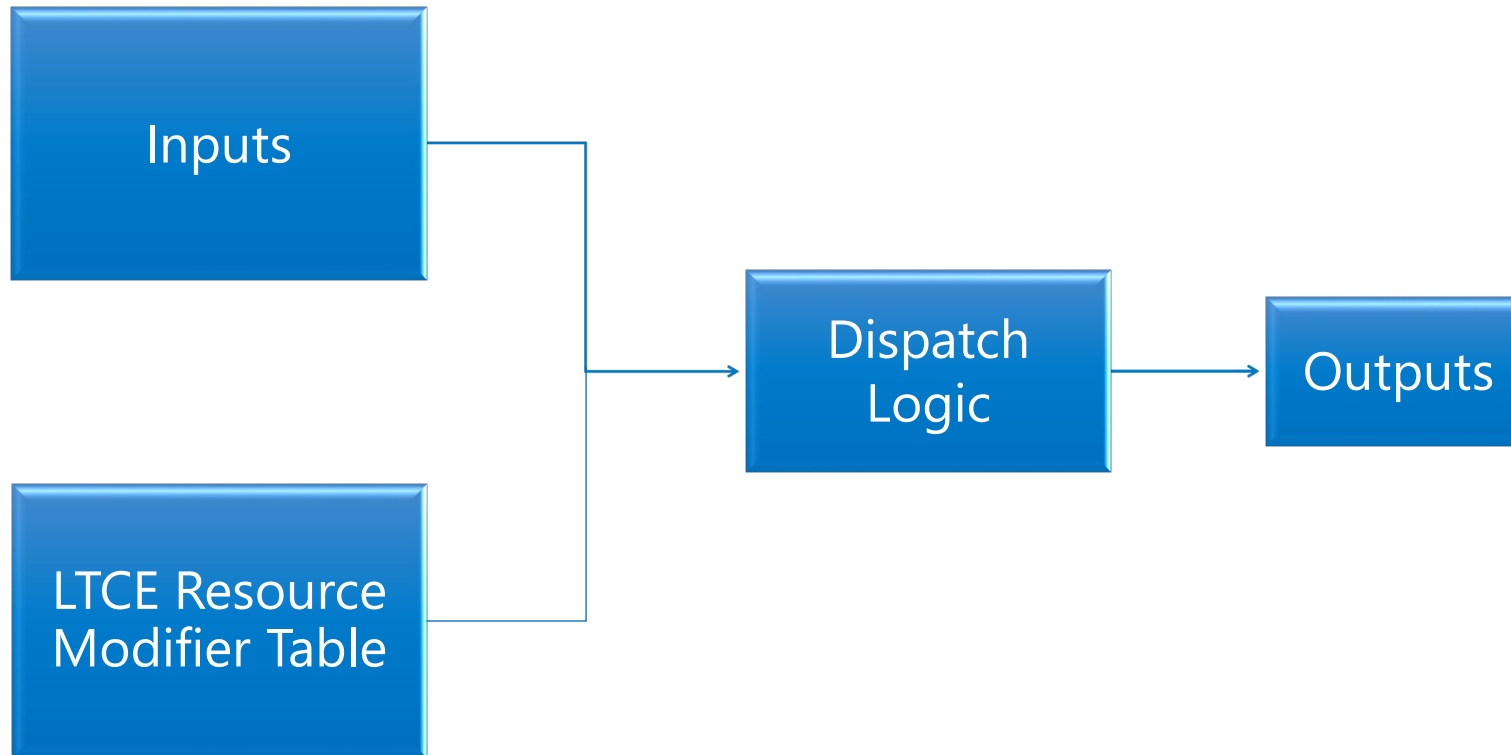


Policies

LTCE Model Flow Diagram



PCM Flow Diagram



Outputs & Post-Processing

Aurora Outputs



Resource
Generation



Total Costs



Imports



Exports



Renewable
Curtailment



Water Use



Emissions



Excel

Extract high-level monthly data
Analyze results
Create dashboards



Power BI

Extract hourly data
Create hourly generation
visualizations



Revenue Requirements

Calculate total revenue
requirements



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Deeper Dive – Environmental Regulation

Rules On the Books*:

- Regional Haze – Improving visibility in Class I Areas
- GHG Emissions Reduction for Electric Generating Units (EGUs)
- Good Neighbor – interstate Ozone transport
- Water Resources

*As of September 30, 2025



Environmental Policy Considerations

- The change in federal administration, executive agency strategy, legislation, and/or legal challenges could impact the effectiveness, implementation, timelines of these rules.
- Environmental laws and regulations continue to evolve, which makes planning complicated. We need to make decisions and take certain actions now to comply with existing regulatory deadlines, and we recognize that future expectations are often uncertain.
- We work with Resource Planning and Operations to develop potential compliance pathways that are protective of the environment /our local communities and ensure the company's ability to continue to provide reliable, affordable power.





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Portfolios

Portfolio Requirements

- ACC Decision No. 79589 – October 21, 2024
- Commission acknowledged TEP's 2023 IRP and identified portfolio requirements for the 2026 IRP:
 - "include in the next IRP cycle an analysis of, at minimum, seven resource portfolios that are designed to evaluate the range of resource procurement actions."
 - "include... an analysis of a technology neutral resource portfolio, which is the least-cost method of safely and reliably meeting customers' energy needs without regard for their emissions reduction goals or any renewable or carbon emissions standards."
 - "include... an analysis of a Balanced Portfolio with Natural Gas Combined Cycle (NGCC) as described in the letter dated August 23, 2024, filed in this docket."

Planned Portfolios: 2027 - 2041

Portfolio	Description
Technology Neutral	Least-cost analysis per Order 79589
Natural Gas Expansion	Includes a Natural Gas Combined Cycle plant and facilities to support it per Order 79589
Renewable Only	Includes only solar, wind, and storage as new resources
High Load Factor Customer Growth	Includes a load forecast that contains higher growth than the current forecast



RPAC Portfolios

- TEP would like to run 1-2 RPAC portfolios
- What kinds of portfolios is the RPAC interested in?
- Potential kinds of portfolios:
 - Focus on technology type
 - Focus on policy
 - Focus on energy mix



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Deeper Dive - Procurement

Procurement Rules

- Arizona Administrative Code: Ch2. Fixed Utilities
 - R14-2-705 Procurement
 - B. A load-serving entity shall use an RFP process as its primary acquisition process for the wholesale acquisition of energy and capacity, unless one of the following exceptions applies.
 - Exceptions
 - C. A load-serving entity shall engage an Independent monitor to oversee all RFP processes for procurement of new resources
 - TEP engages with an Independent Monitor to facilitate the RFPs:
 - Collection of bids
 - Scoring bids
 - Anonymizing bids for company review
 - Oversee internal review of bids and verify fair selection

All-Source Request for Proposals

- ASRFPs are issued seeking:

Supply Side Resources

- Fossil Fuel Plants
- Nuclear Power Plants
- Energy Storage
- Solar
- Wind
- Hybrid

Demand Side Resources

- Demand Response
- Energy Efficiency

Agreement Types

- What kind of agreements do we seek?
- Purchase Power Agreements
 - Renewable Energy PPA
 - Energy Storage PPA
 - Thermal Tolling PPA
- Build-Own-Transfer Agreements
 - Renewable Energy BOTA / APA
 - Energy Storage BOTA / APA
- Load Management Agreements



Projects from Recent ASRFPs

2022 ASRFP

- Babacomari – 160MW solar
- Roadrunner Reserve I – 200MW/800MWh battery storage
- Wilmot II – 100 MW solar and 100MW/400MWh battery storage
- Winchester – 80 MW solar and 80MW 320MWh battery storage

2024 ASRFP

- Roadrunner Reserve II – 200MW/800MWh battery storage



Next Meeting:
November 19
10am – 12pm