Utility Partners Perspectives

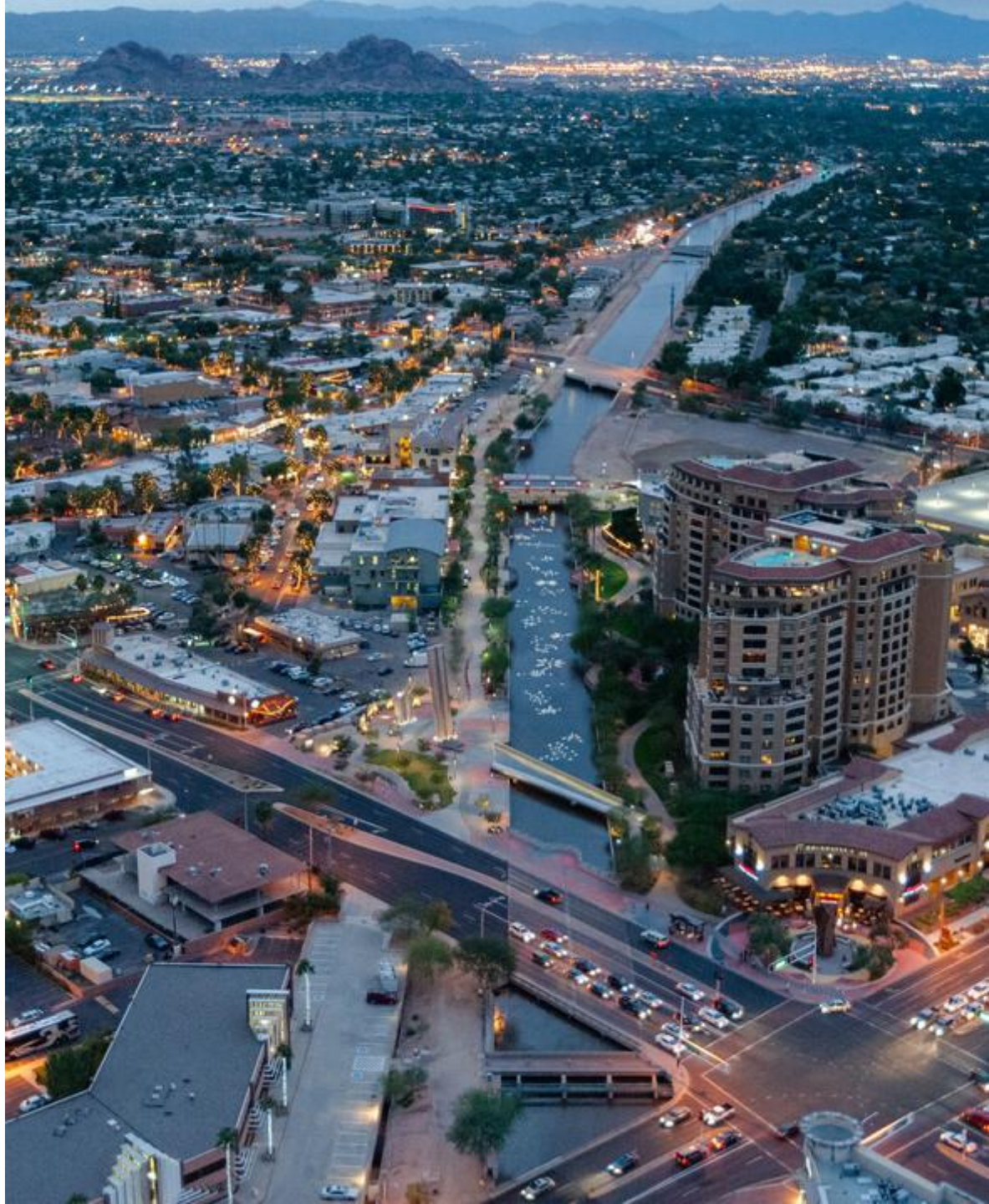
November 14, 2024 – TEP, SRP and APS

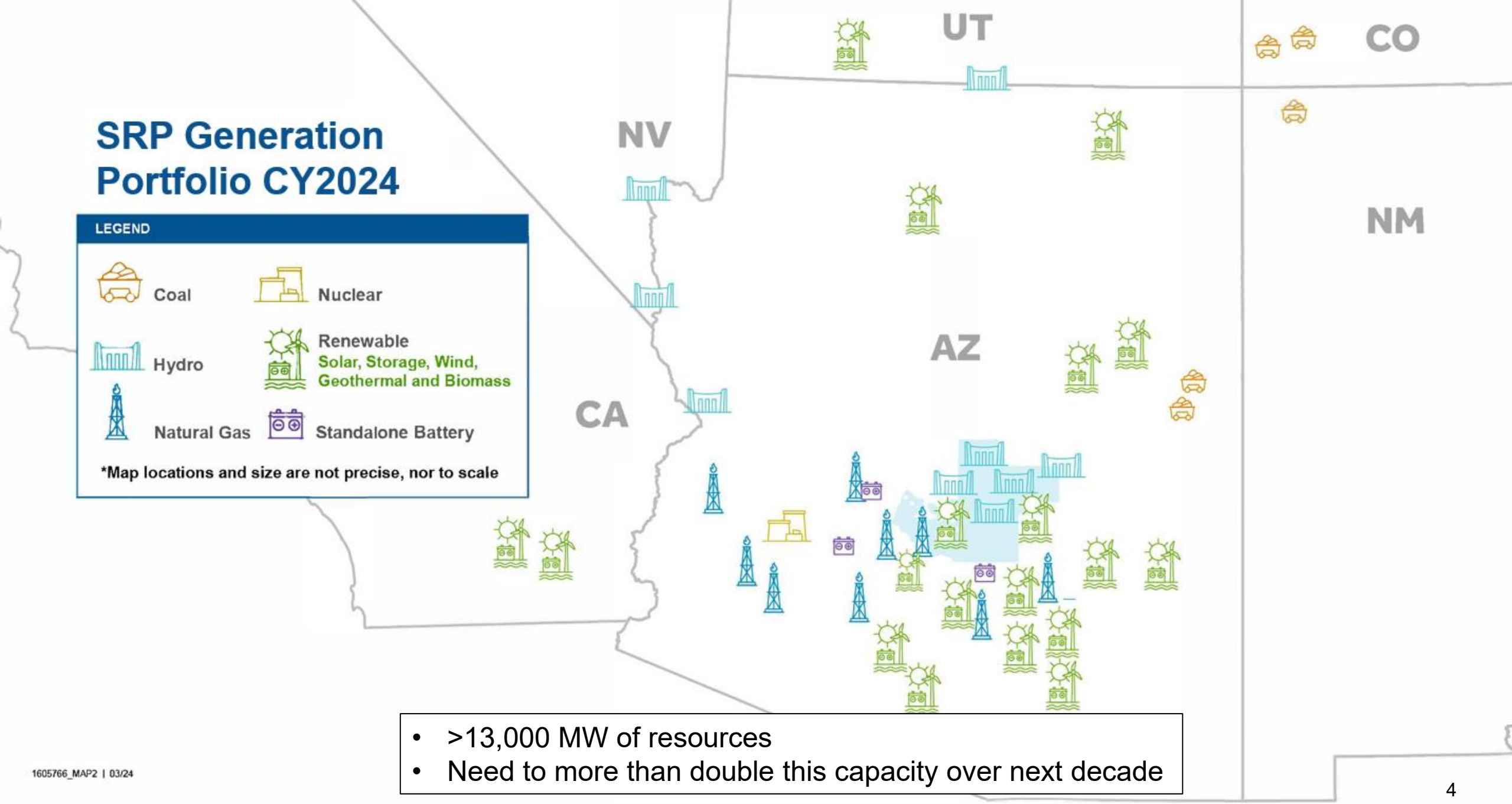
Topics Covered

- Introductions to SRP
- Introductions to APS
- Introductions to TEP
- Setting the Table for Clean Energy Transition - TEP
- What is Resource Planning? - SPR
- What is the Utility Procurement Process (RFP)? - APS
- How we continue working together? – All
- Future Session Topics for January

About SRP

- One of the nation's largest not-for-profit public power utilities
- Provide water and power to more than 2 million people in central Arizona
- Not-for-profit, community-based
- Peak demand ~ 8,200 MW
- Number of employees ~ 5,400





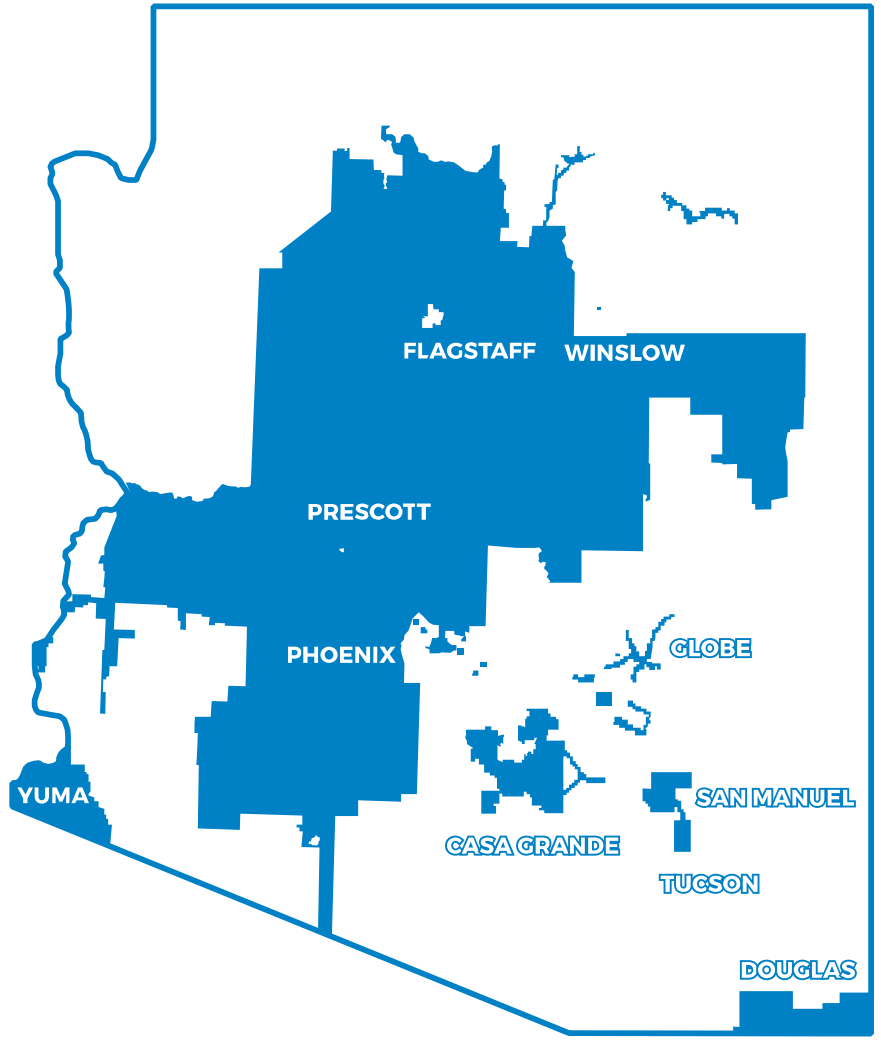
- >13,000 MW of resources
- Need to more than double this capacity over next decade

Introductions to APS

APS **SERVICE TERRITORY**

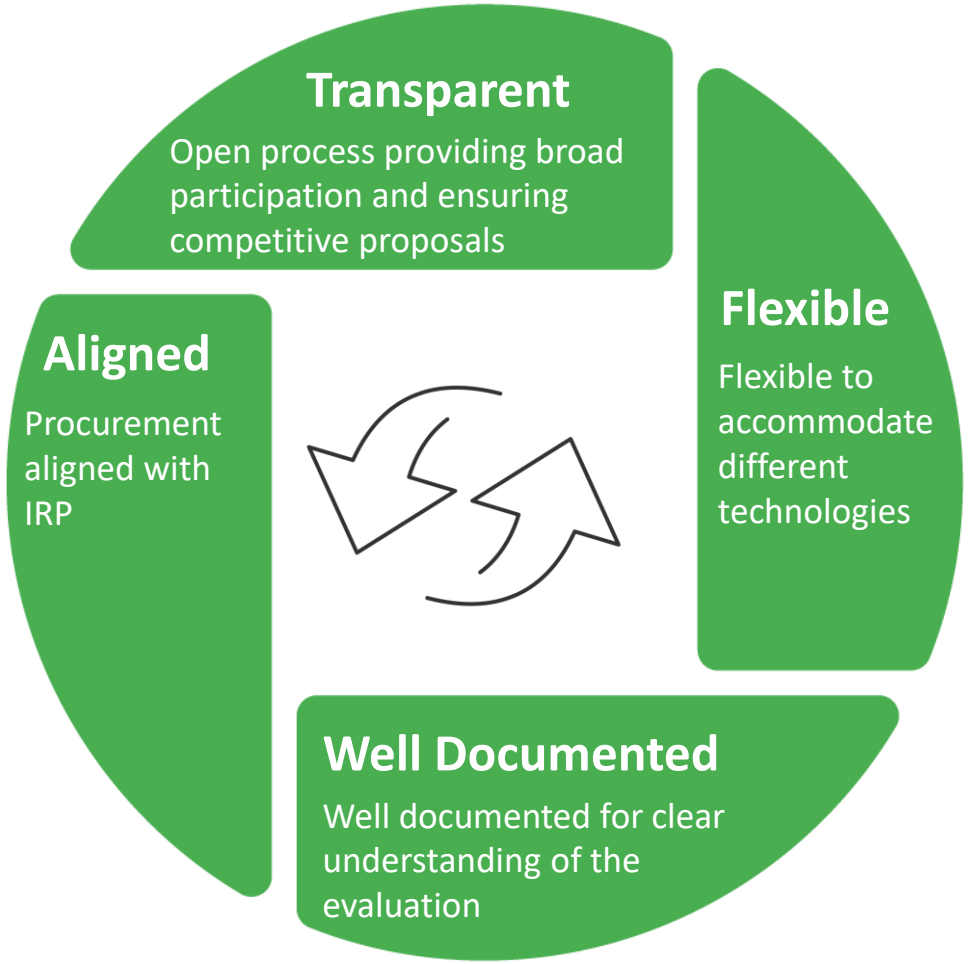
Since 1886, Arizona's largest and longest-serving utility.

- 34,646 square mile service territory
  - 11 of 15 counties
  - 1.4 million customer accounts (89% residential)
  - Approximately 45% of Phoenix
- ~6,000 employees
- Peak demand is ~8,200 megawatts
- Investor owned (PNW)



All-source RFP guiding principals

- Process that is
  - Objective
  - Fair
  - Flexible to diverse resources
- Open to all commercially viable resource(s) and technologies
- Prioritizes reliable and affordable proposals that enable clean energy commitments
- APS wholesale procurement is governed by Ariz. Admin. Code § R14-2-705 - Procurement



Introductions to TEP

REAL AZ
Utility Perspective

Cristian Patterson

Superintendent, Engineering
Springerville Generating Station

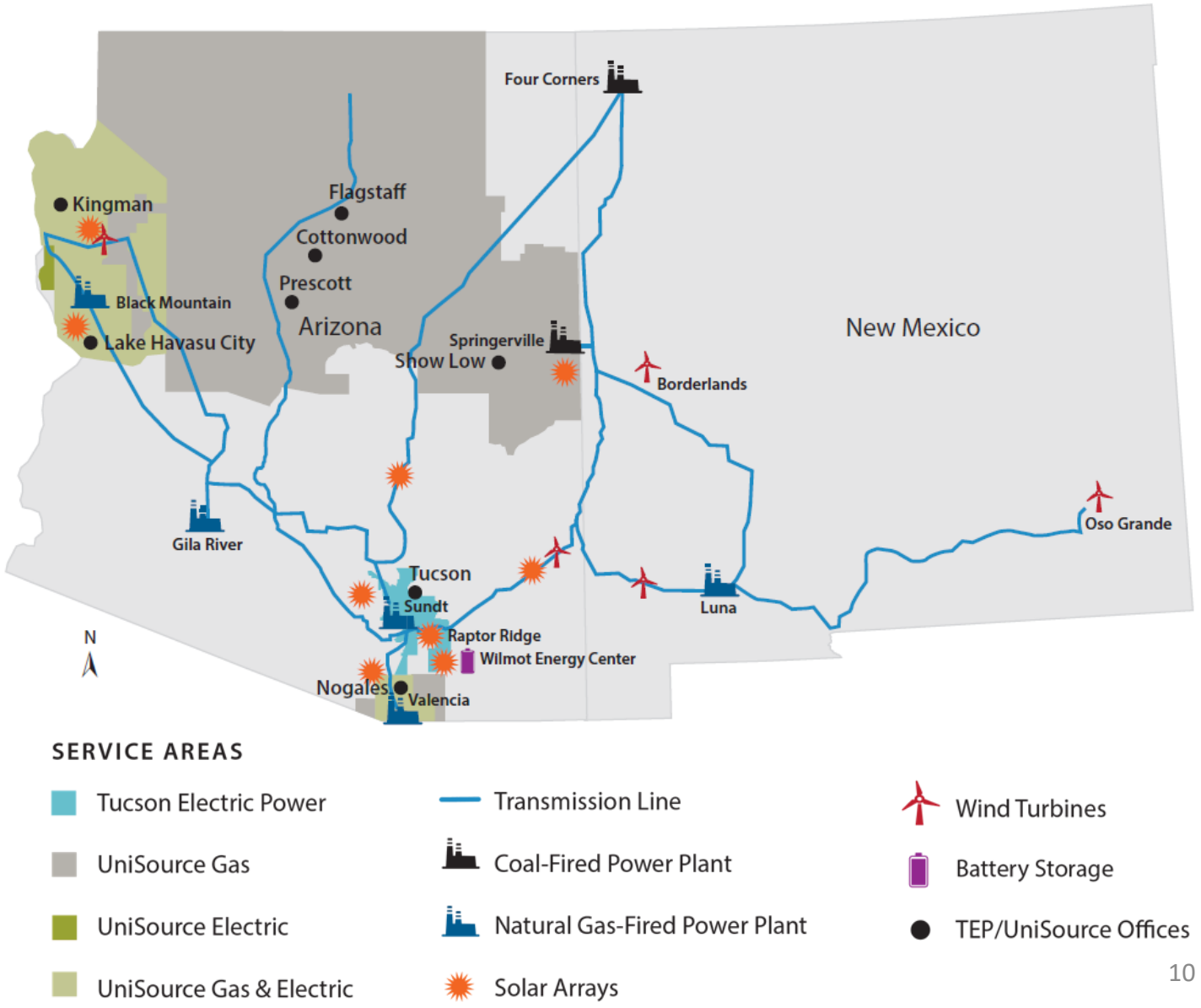
Company Overview

Tucson Electric Power

- 1,600+ employees
- 446,000 customers in Pima County + Fort Huachuca U.S. Army Base in Cochise County
- Serving Tucson 125+ years

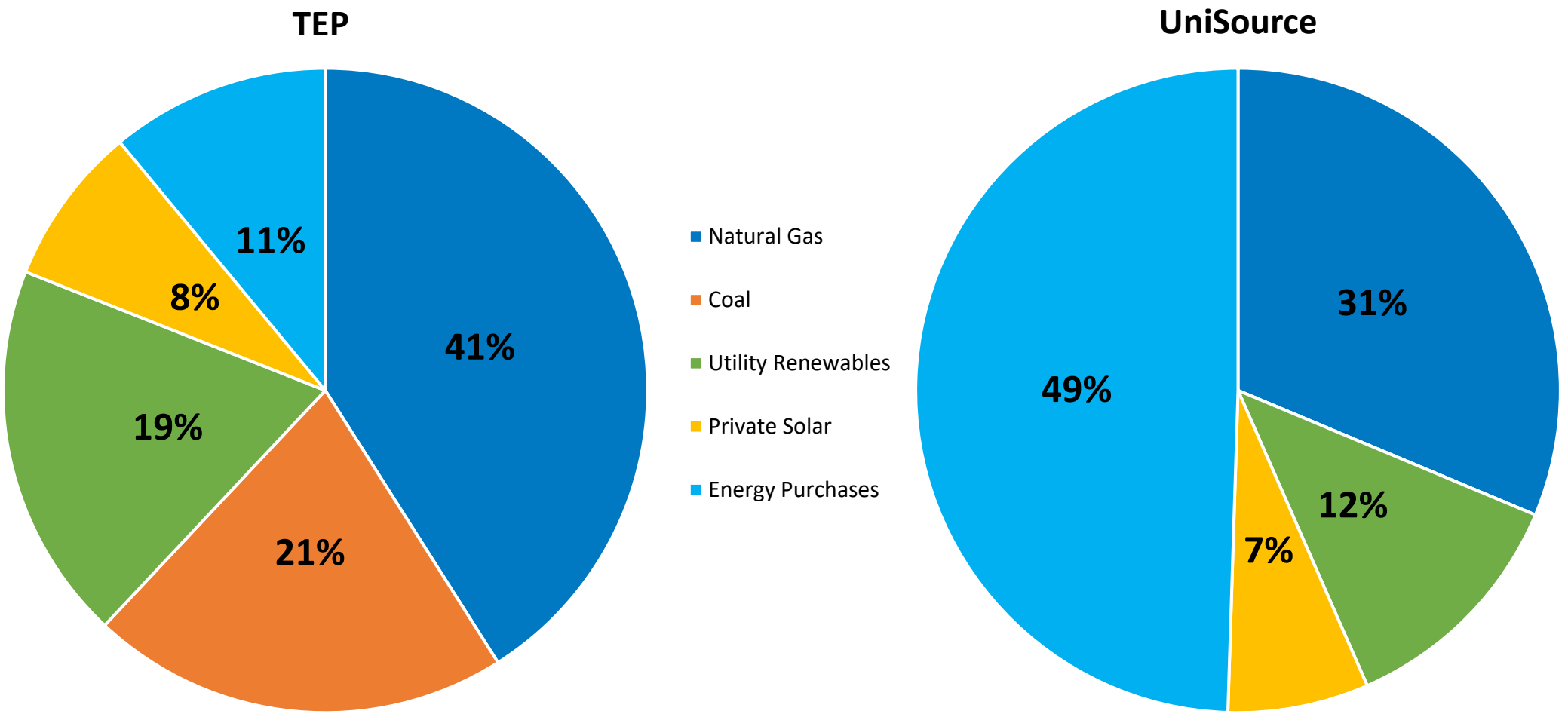
UniSource Energy Services

- Electric and natural gas service
- 320+ employees
- 269,000 customers in Northern and Southern Arizona



Setting the Table for Clean Energy Transition – TEP

2023 Energy Mix



Clean Energy Transition

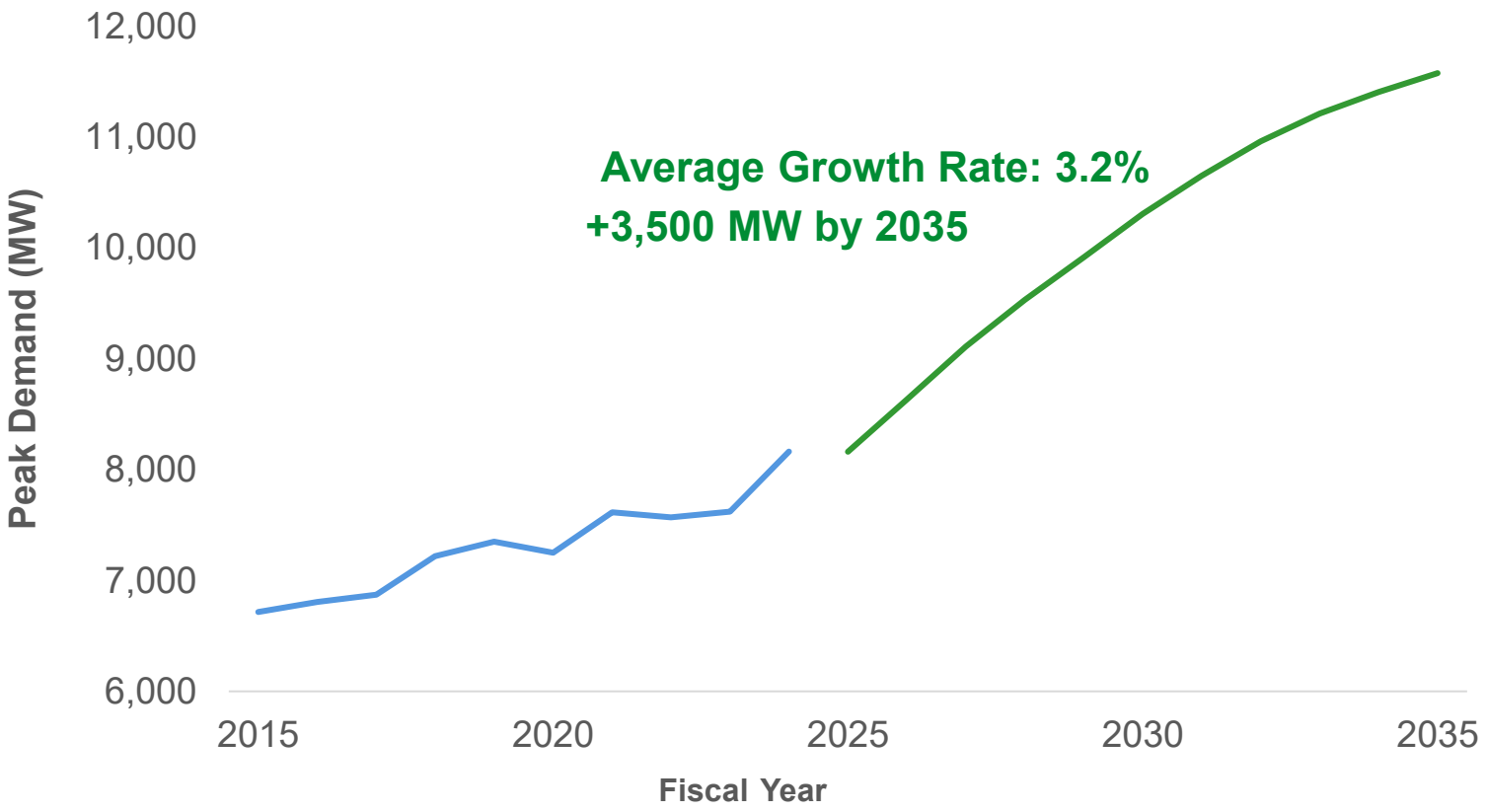
- Operational challenges
- Technological challenges
- Consumer interests
- Investor interests
- Government regulation
- Coal community transition

How do utilities plan for the future? - SRP


SRP Planning Slides

Key Drivers for Resource Changes

Significant Load Growth



More Ambitious Carbon Reduction Goals

By 2035: Reduce the amount of CO2 emitted by generation (per MWh) by 82% from 2005 levels by 2035

By 2050: Net zero carbon emissions

Considerations for New Resource Additions

Reliability

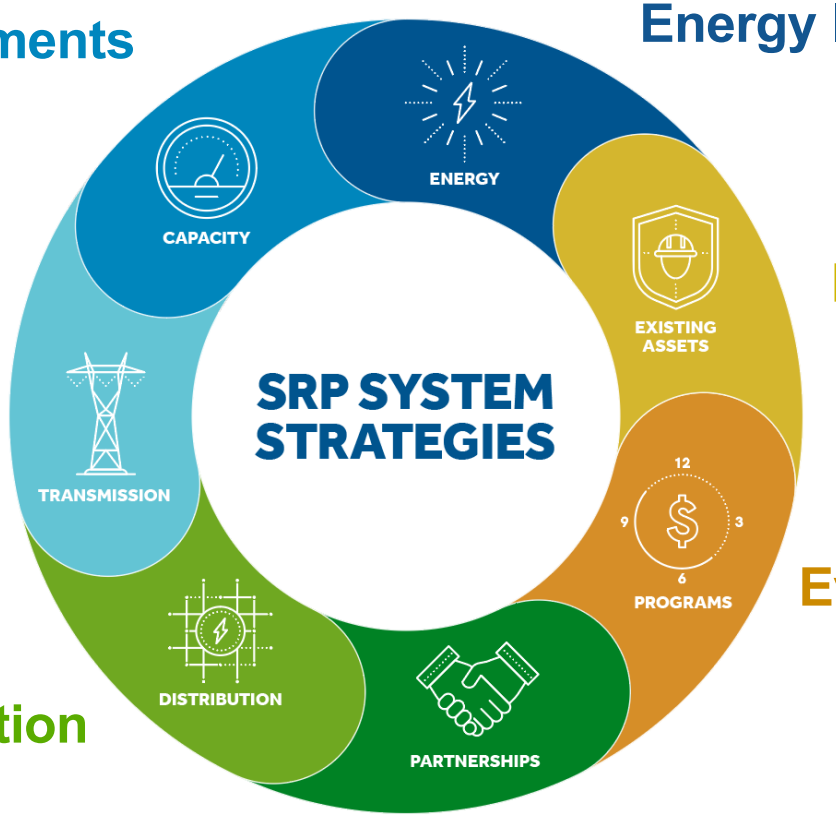
Sustainability Commitments

Affordability

Integrated System Plan Strategies

Capacity Investments

Energy Investments



Strategic Investment & Reinforcement of Existing Assets

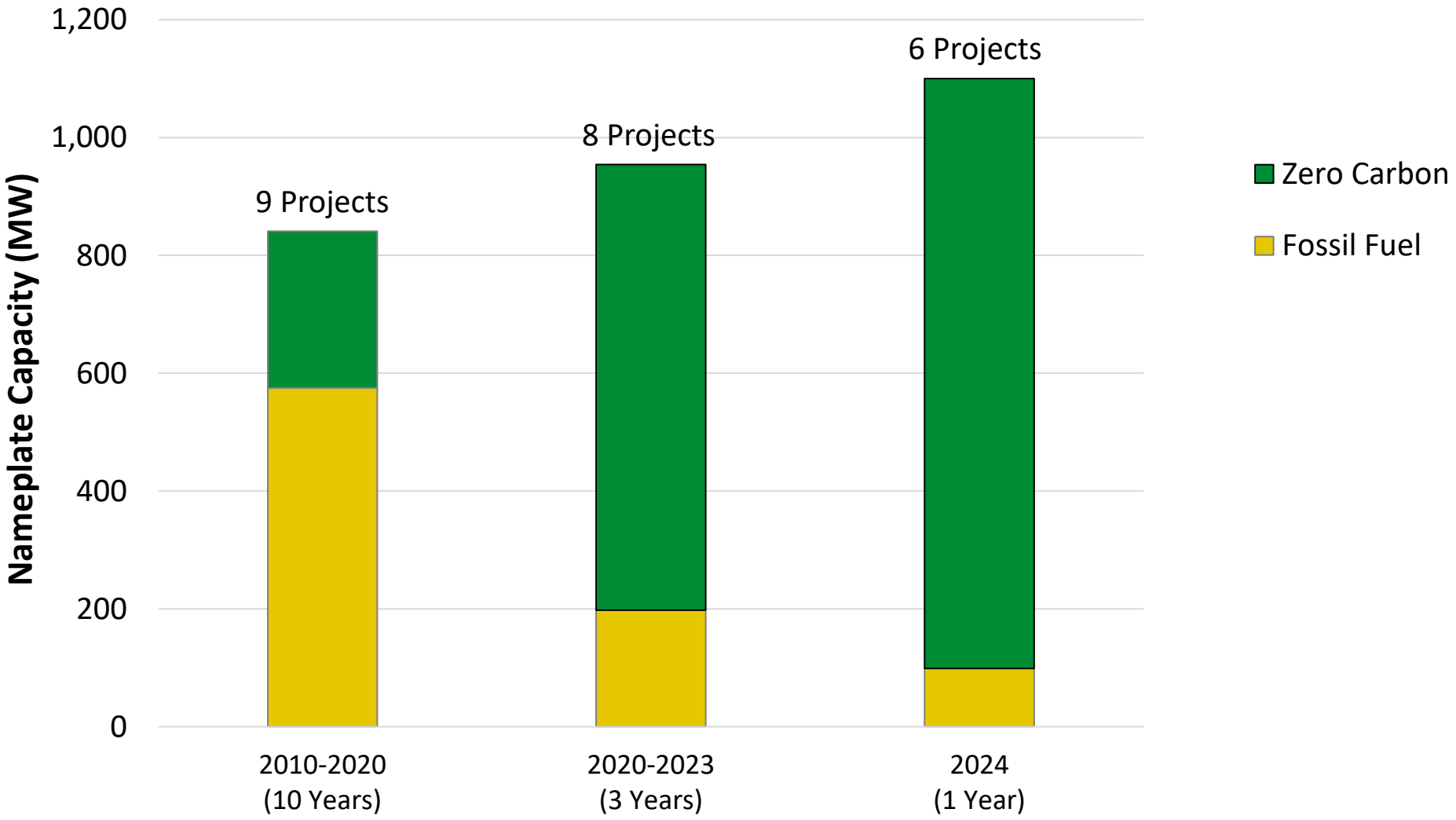
Proactive Transmission

Evolution of Customer Programs & Pricing

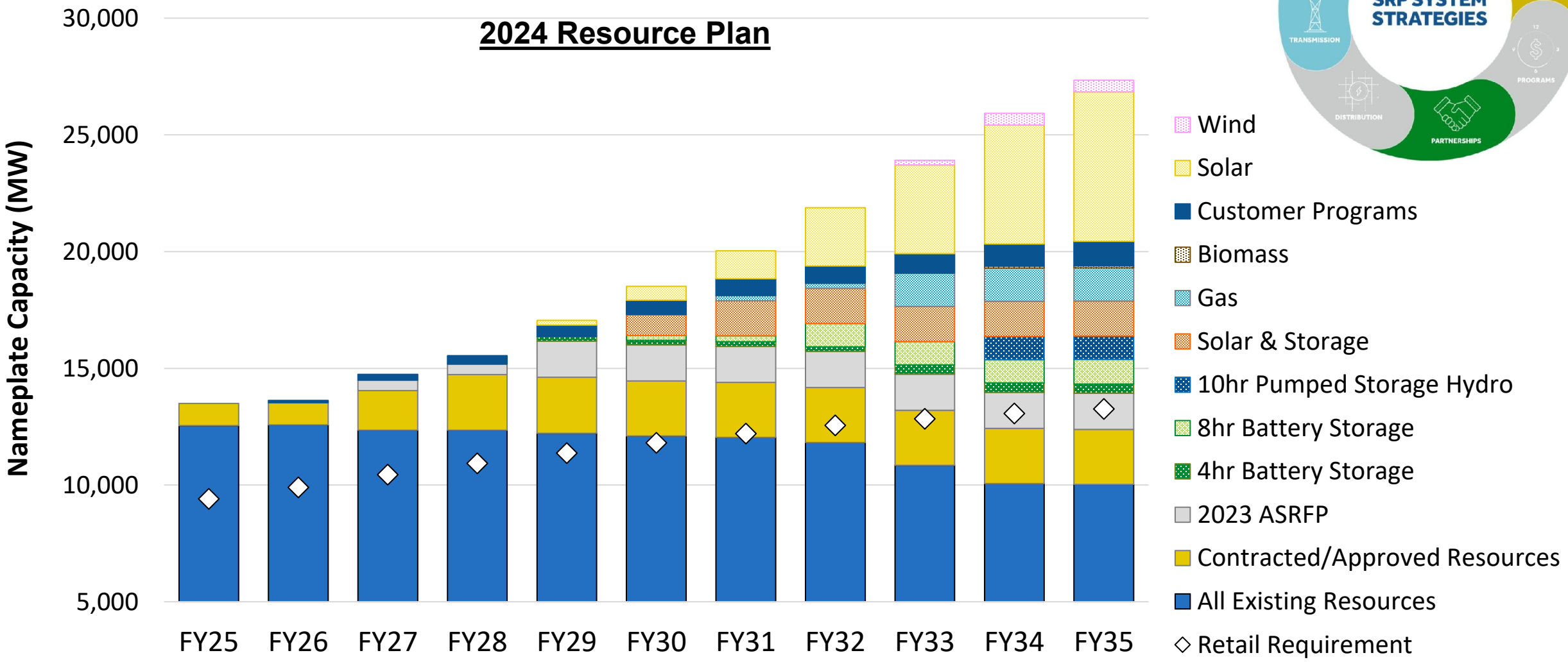
Distribution Innovation

Partnerships & Suppliers

SRP is adding new resource projects at an unprecedented pace…



And the pace will need to continue…



Implementation Priorities

- Annual All-Source Procurement Processes
- Self-Build Options
- Solar Development Partnership
- Early Development of Long-Lead Assets

How do utilities secure the power? - APS

All-source RFP guiding principals

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  - Objective
  - Fair
  - Flexible to diverse resources
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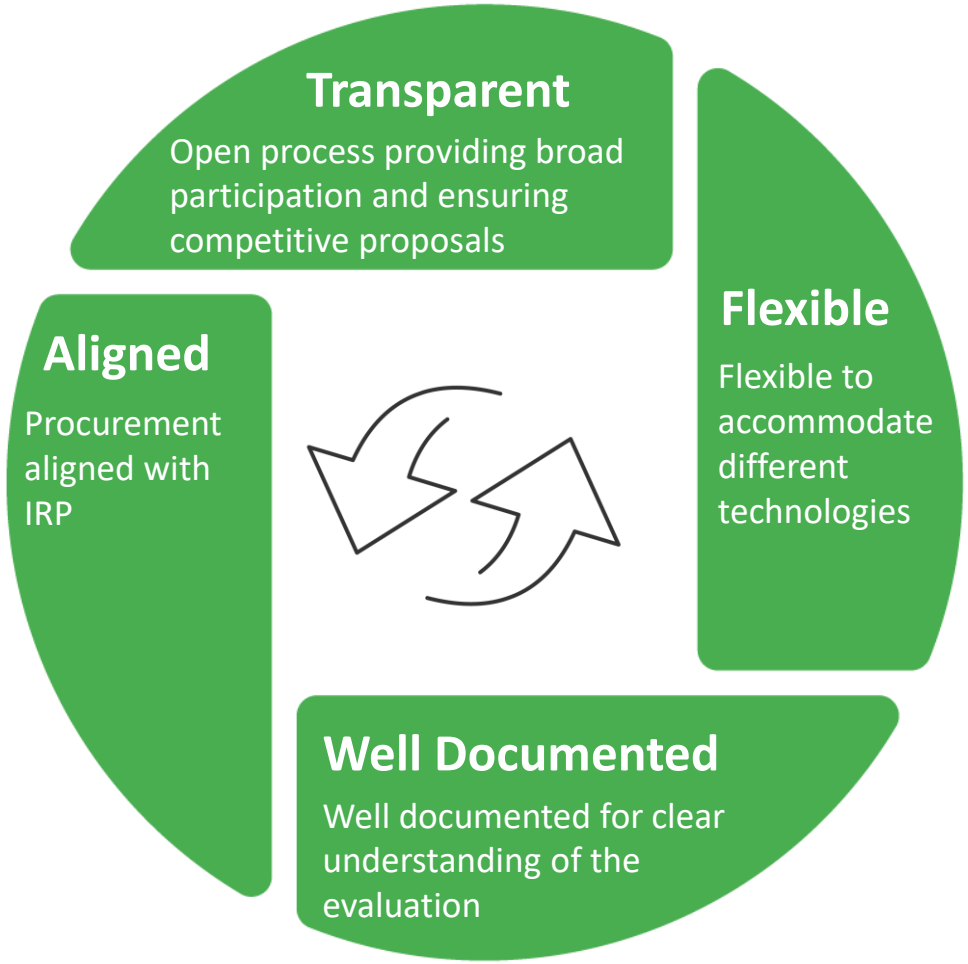
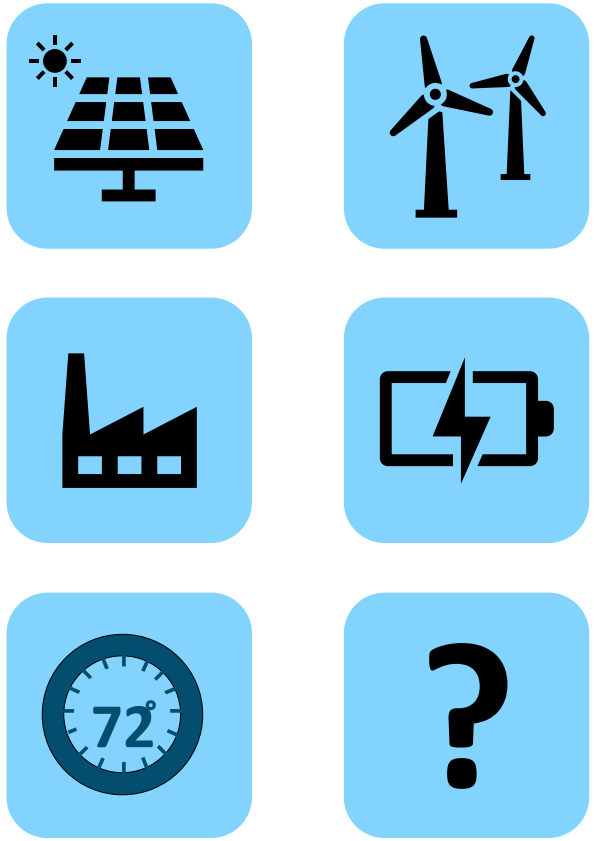


Resource options in an all-source RFP

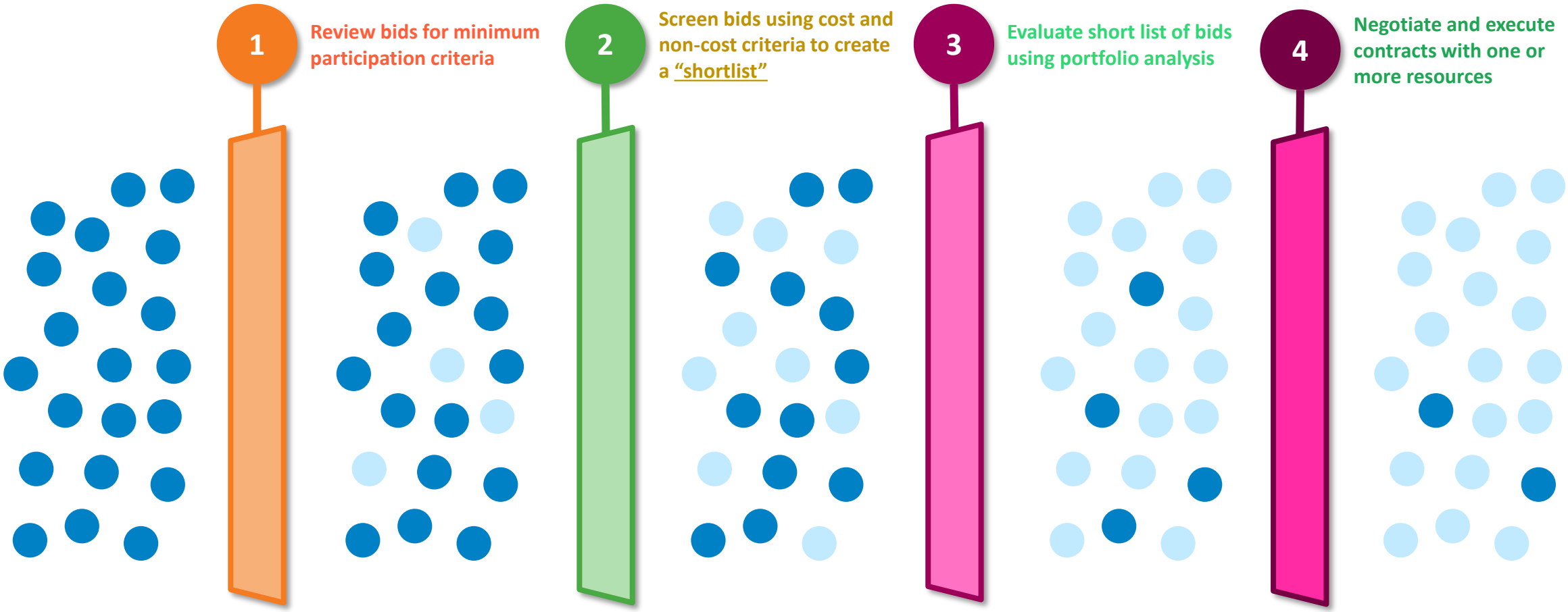
- All-source RFPs are designed to allow all resources to compete on a level playing field, including:
  - Renewables (solar, wind)
  - Storage (batteries, other emerging technologies)
  - Hybrid resources
  - Demand-side resources (EE, DR)
  - Natural gas
- Each resource provides a unique combination of values:
  - **Energy:** the ability to deliver power to the grid throughout the year
    - Clean/carbon-free vs. fossil
  - **Capacity:** the ability to deliver power to the grid when needed most for reliability
  - **Flexibility:** the ability to contribute to balancing supply and demand



All-source RFP process

15-30 days	7-30 days	7-60 days	15-200 days	14-300 Days
Utility Develops and Issues RFP	Bidder Submits Questions	Bidder Submit Proposals	Utility Evaluates Proposals	Utilities Execute Contracts
Utilities establish rules, guidance, and criteria for RFPs to solicit competitive bids to meet an identified need	During this period, bidders submit clarifying questions to tailor bids	Bidders submit proposals and utilities evaluate bids based on relative costs, benefits, and other factors to identify a winning bid. Bidders must have signed a confidentiality agreement and paid their bid fee to move forward.	Evaluation times vary the most due to different evaluation approaches. Some require multiple rounds of evaluations, some seek pre-approval from their regulating body, and some have interim Q&A sessions. Bidders that take exception to APS requirements such as collateral requirements, performance guarantees and otherwise submit non-conforming proposals may be removed from further consideration.	After negotiations, utilities will execute contracts and seek regulatory approval where necessary.

Evaluation process



Evaluation process narrows the pool of prospective bidders through a number of steps, culminating with contract negotiations and execution

2024 all-source RFP

- Preparing to launch in Q4 2024
- Resource need is still being determined but will likely be close to the 2023 ASRFP in scope
- Resource Targets:
  - Near term (2028 – 2030)
  - Mid to long-term (2031+)
- Unique opportunities still being evaluated

Example Resources Requested
Hybrid
Energy Storage
Solar
Wind
Thermal
Energy Efficiency
Demand Response

Ariz. Admin. Code § R14-2-705 - Procurement

A. Except as provided in subsection (B), a load-serving entity may use the following procurement methods for the wholesale acquisition of energy, capacity, and physical power hedge transactions:

- A. Purchase through a third-party online trading system;
- B. Purchase from a third-party independent energy broker;
- C. Purchase from a non-affiliated entity through auction or an RFP process;
- D. Bilateral contract with a non-affiliated entity;
- E. Bilateral contract with an affiliated entity, provided that non-affiliated entities were provided notice and an opportunity to compete against the affiliated entity's proposal before the transaction was executed; and
- F. Any other competitive procurement process approved by the Commission.

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:

- A. The load-serving entity is experiencing an emergency;
- B. The load-serving entity needs to make a short-term acquisition to maintain system reliability;
- C. The load-serving entity needs to acquire other components of energy procurement, such as fuel, fuel transportation, and transmission projects;
- D. The load-serving entity's planning horizon is two years or less;
- E. The transaction presents the load-serving entity a genuine, unanticipated opportunity to acquire a power supply resource at a clear and significant discount, compared to the cost of acquiring new generating facilities, and will provide unique value to the load-serving entity’s customers;
- F. The transaction is necessary for the load-serving entity to satisfy an obligation under the Renewable Energy Standard rules; or
- G. The transaction is necessary for the load-serving entity's demand-side management or demand response programs.

C. A load-serving entity shall engage an independent monitor to oversee all RFP processes for procurement of new resources.

2023 ASRFP Scoring Matrix

Categories	Criteria	Weightage	Total Points	Points	Proposed Scoring
Resource Alignment	**Dispatchability**	25%	500	100	**100**- APS has full dispatchability
					25- APS has limited dispatchability
					0- APS has no dispatchability
Resource Alignment	**Carbon Emissions Profile**			200	**200**- zero emissions
					50- Greater than zero but less than average APS emissions rate (lbs/MWh)
					0- Greater than average APS emissions rate (lbs/MWh)
Resource Alignment	**Load Factor Impacts**			100	*This category will only give bonus points for being available fully or partially during the High Energy and Capacity Value hours.*
					100- Available all hours from HE17 to HE22 from June to September at full capacity (100% capacity factor)
					Points will be reduced by a formula to capture actual capacity factor of the project during those hours only.
					HE = Hour ending; (4 pm-10 pm).
Resource Alignment	**Flexibility**			100	**100**- Ramp rates of 10% per minute of nameplate capacity or higher
					25- Ramp rates of at least 3% per minute of nameplate capacity
					0- Ramp rates less than 3% per minute of nameplate capacity
Technology/ Project Risk	**Site Control**	12.50%	250	50	**50**- Respondent possess direct ownership of the site, free and clear with no encumbrances OR Respondent is a lessee on an existing lease of the site with no encumbrances or, in the case of demand-side resources, Respondent provides sufficient evidence that 25% or more of its projects or programs are committed at the time of Proposal submittal.
					0- Respondent possess direct ownership of the site, with encumbrances OR Respondent is a lessee on an existing lease of the site, with encumbrances OR Respondent possesses an exclusive and non-contingent option to purchase or lease the site or, in the case of demand-side resources, Respondent provides sufficient evidence that less than 25% of its projects or programs are committed at the time of Proposal submittal.

2023 ASRFP Scoring Matrix

Categories	Criteria	Weightage	Total Points	Points	Proposed Scoring
Technology/ Project Risk	**Interconnection Status**			100	**100**- Executed IA/Negotiations or no interconnection required
					75- FIS completed or, in the case of demand-side resources, 50% of participants in the project or program portfolio are interconnected or do not require interconnection
					25- SIS completed or, in the case of demand-side resources, 25% of participants in the project or program portfolio are interconnected or do not require interconnection
					0- Has not yet applied for interconnection or, in the case of demand-side resources, less than 25% of participants in the project or program portfolio are interconnected or do not require interconnection
Technology/ Project Risk	**Supply Chain**			100	**100**- Proposal is for an existing project or program; or, in the case of a new project or program, no major equipment is needed OR Respondent has less than 50% of major equipment of system sourced from countries subject to Antidumping Duty and Countervailing Duty (AD/CVD) orders AND is in compliance with the Uyghur Forced Labor Prevention Act (UFLPA) AND Respondent has a preferred supplier agreement for Proposal OR has procured or ordered at least 50% of major equipment for the project or program
					50- Less than 50% of major equipment of system sourced from countries subject to AD/CVD orders OR Respondent is not in compliance with UFLPA AND Respondent has a preferred supplier agreement for Proposal OR has procured or ordered at least 50% of major equipment for the project or program
					0- More than 50% of major equipment sourced from countries subject to AD/CVD orders OR Respondent is not in compliance with UFLPA OR. Respondent does not have a preferred supplier agreement for proposal OR has procured or ordered less than 50% of major equipment for the project or program

2023 ASRFP Scoring Matrix

Categories	Criteria	Weightage	Total Points	Points	Proposed Scoring
Respondent Risk	**Respondent Commercial Experience**	12.50%	250	100	*For existing or new/to-be constructed projects*
					100- Respondent has previously developed a project or program with a capacity over 75% of proposed project or program size AND has previously contracted for the proposed contract structure
					50- Respondent has previously developed a project or program with a capacity at least 50%-75% of proposed project or program size AND has previously contracted for the proposed contract structure
					25- Respondent has previously developed a project or program with a capacity of less than 50% of proposed project or program size AND has previously contracted for the proposed contract structure
					0: Respondent has only previously developed a project with a capacity between of less than 50% of proposed project or program size AND has not contracted for the proposed contract structure
Respondent Risk	**Respondent Safety**			50	**50**- Respondent has NONE of the following: Worker's Experience Modification Rating (EMR) > 1.0, and OSHA Total Recordable Injury Rate (TRIR) - TRIR >2.0, or, if no EMR or TRIR rating, ISNetworld grade of "A" or "B"
					25- Respondent has ONE of the following: EMR > 1.0 OR TRIR > 2.0
					0- Respondent has both of the following: EMR > 1.0 AND TRIR > 2.0 or, if no EMR or TRIR rating, ISNetworld grade of less than "B" OR no ISNetworld subscription
Respondent Risk	**Financial Strength**			100	**100**- The Bidder has obtained financing for at least 3 projects of similar technology and size; has proven financial capability with a favorable bond rating; and provided 3 years of financial statements demonstrating it is financially capable; is not in bankruptcy proceedings; or any current or threatened formal dispute with APS.
					50- The Bidder has financed at least 1 project of similar technology and size; has demonstrated reasonable financial capability based on financials and/or has a favorable bond rating; is not in bankruptcy proceedings or any current or threatened formal dispute with APS.
					0- None of the above
Cost	**Reliable LCOC**	40%	800	800	**800** points for top decile. 100-point reduction for each subsequent decile in LCOC value. Minimum score 100 points.
Cost	**LCOE**	10%	200	200	**200** points for lowest LCOE. 1% reduction in point for every 1% increase in LCOE value. Minimum score 50 points.

How we continue working together? – All

Utility Partners Perspectives Part 2

January 9, 2025– SRP and APS

About SRP

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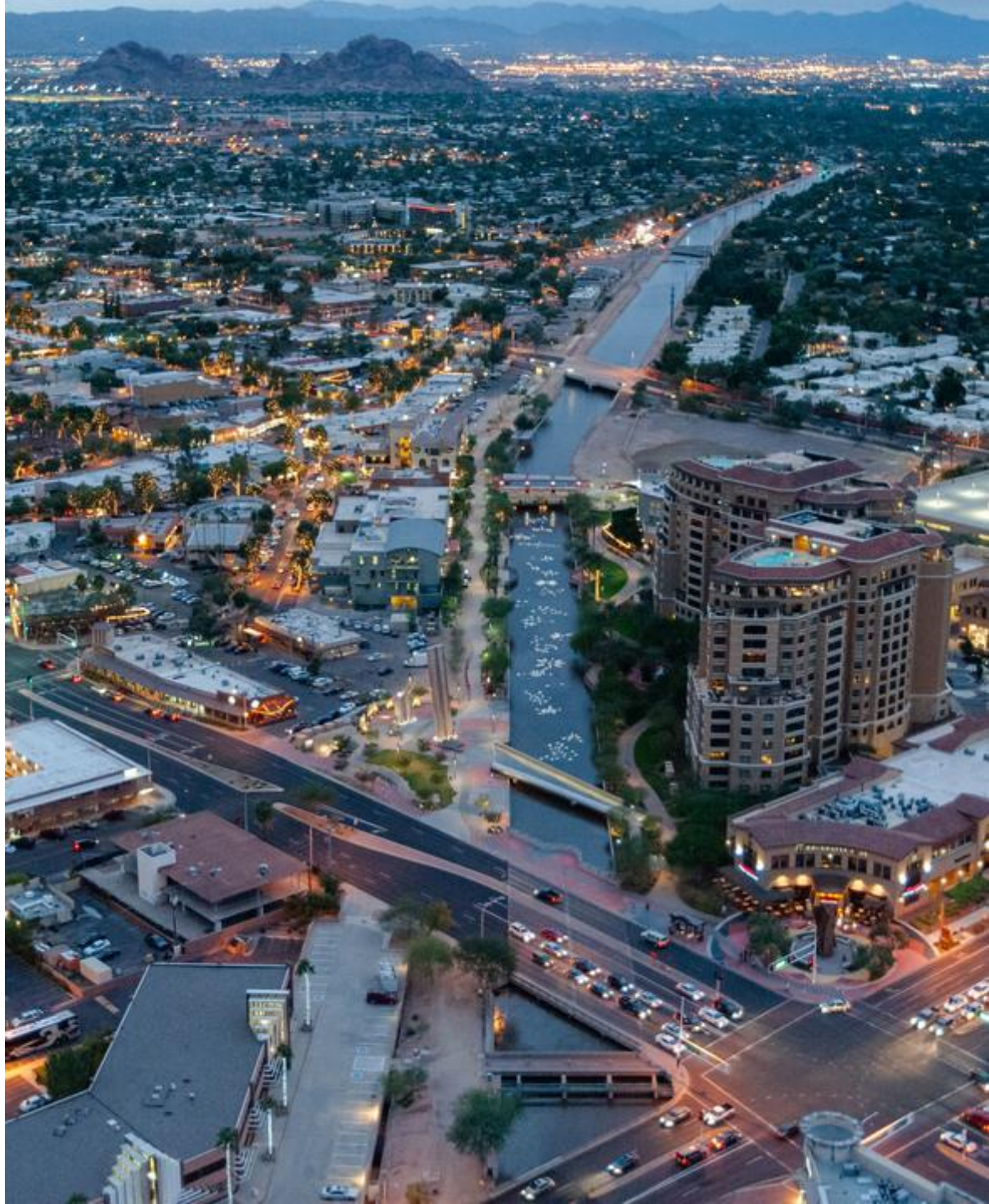

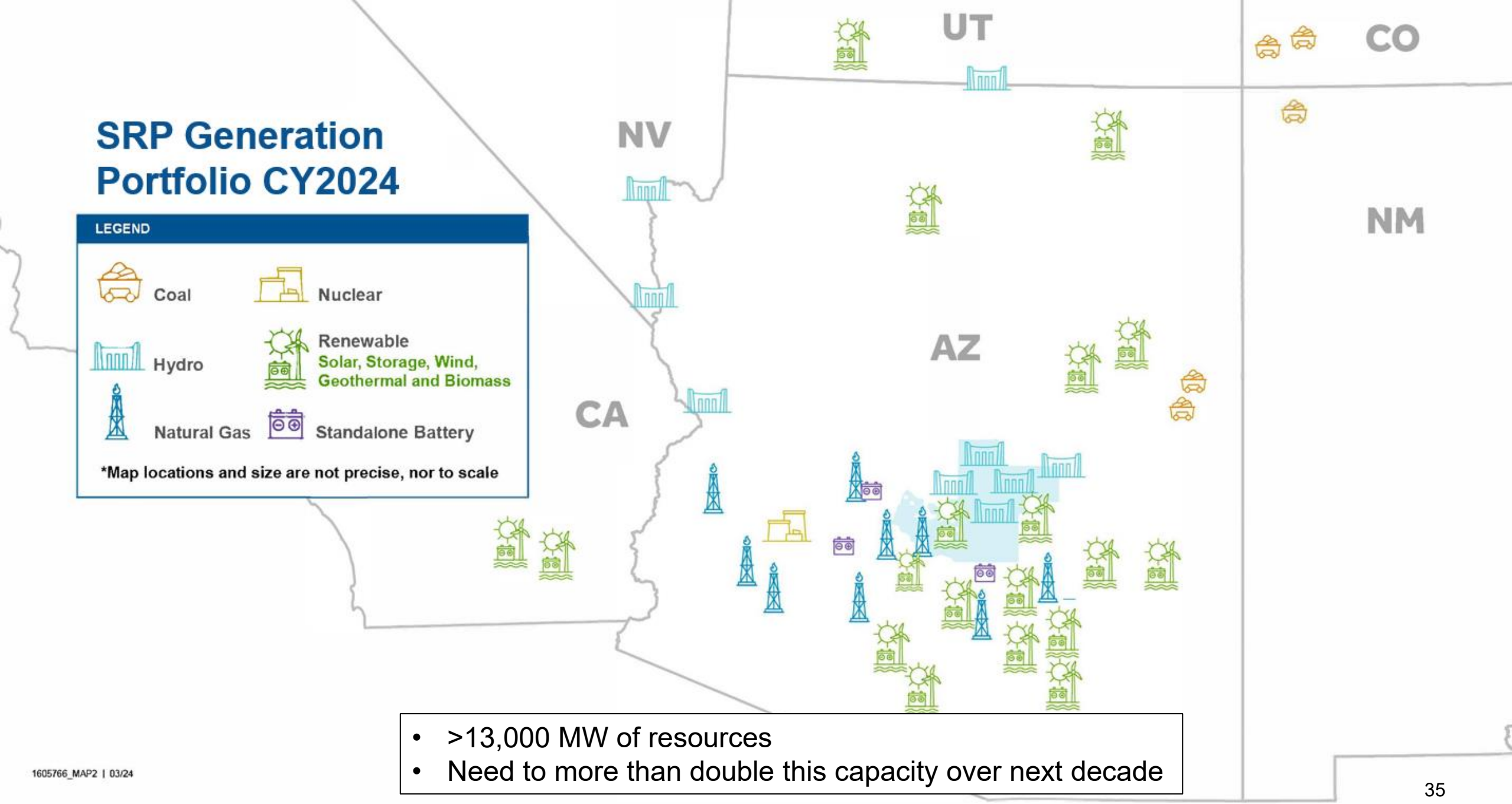

- >13,000 MW of resources
- Need to more than double this capacity over next decade

Introductions

- Jason Spitzkoff: Manager, Transmission and Distribution Engineering
  - Email: Jason.spitzkoff@aps.com
- Rebecca Crawford: Supervisor, Transmission Contracts and Services
  - Email: Rebecca.crawford@aps.com
- Gary Nolan: Manager, Regulatory Compliance
  - Email: Gary.Nolan@aps.com

APS **SERVICE TERRITORY**

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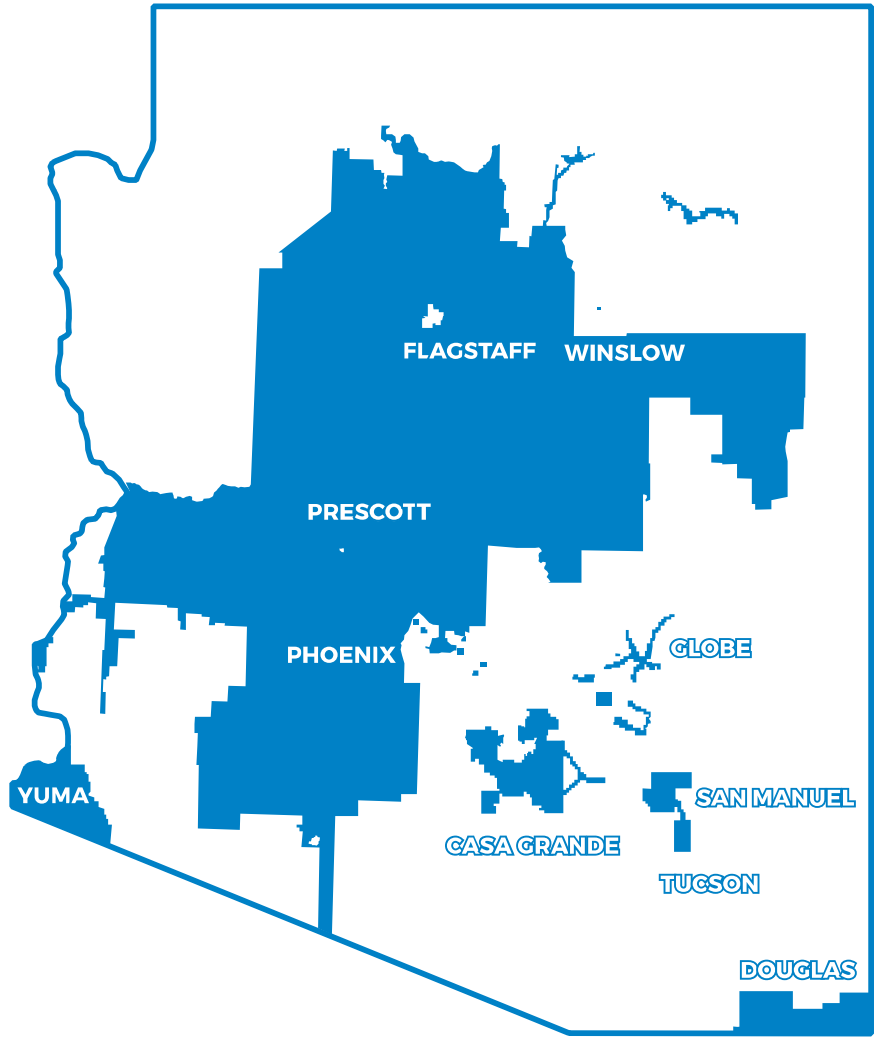
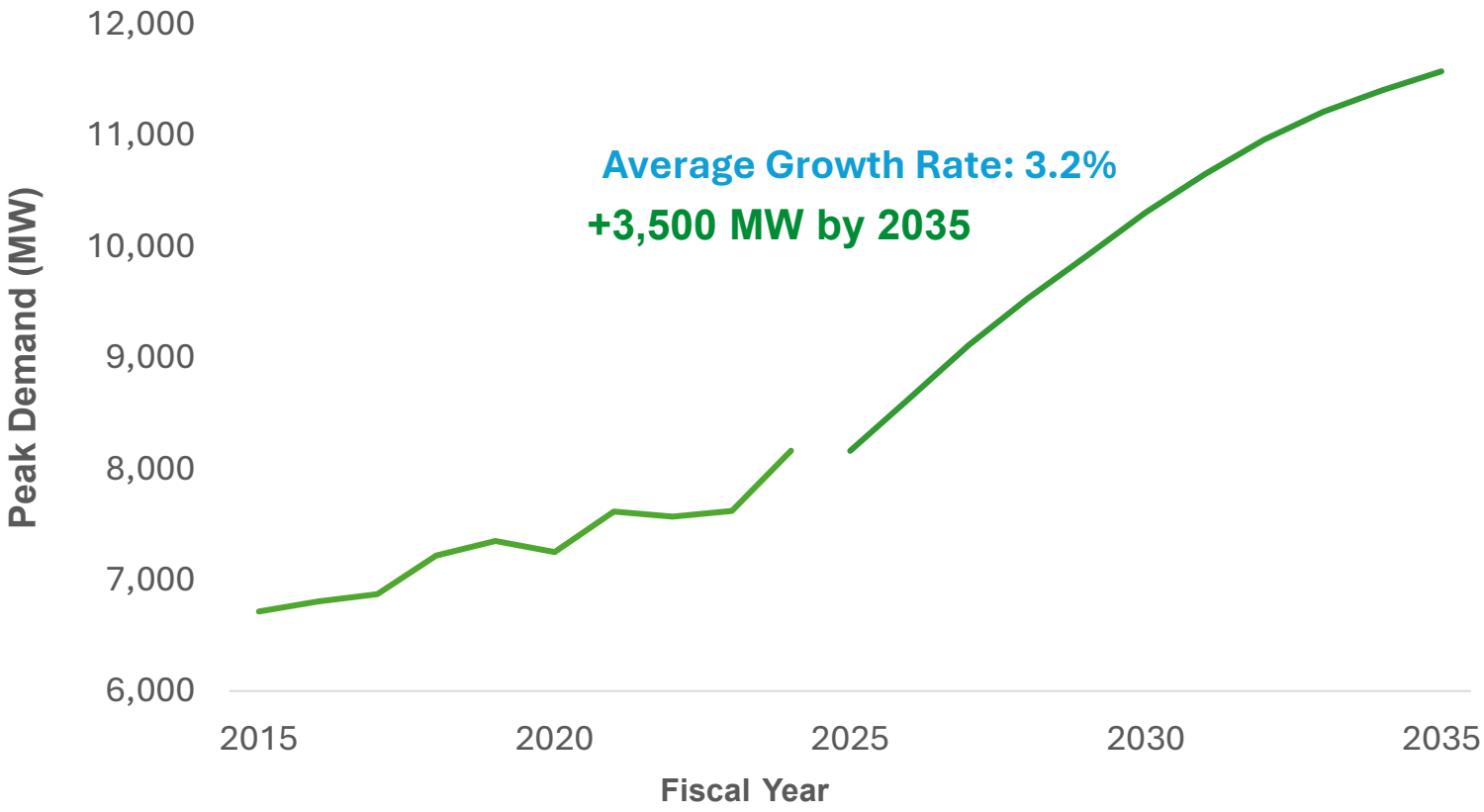


Brief Recap: The RFP process

- SRP

Key Drivers for SRP's Power Generation Needs

Significant Load Growth



More Ambitious Carbon Reduction Goals

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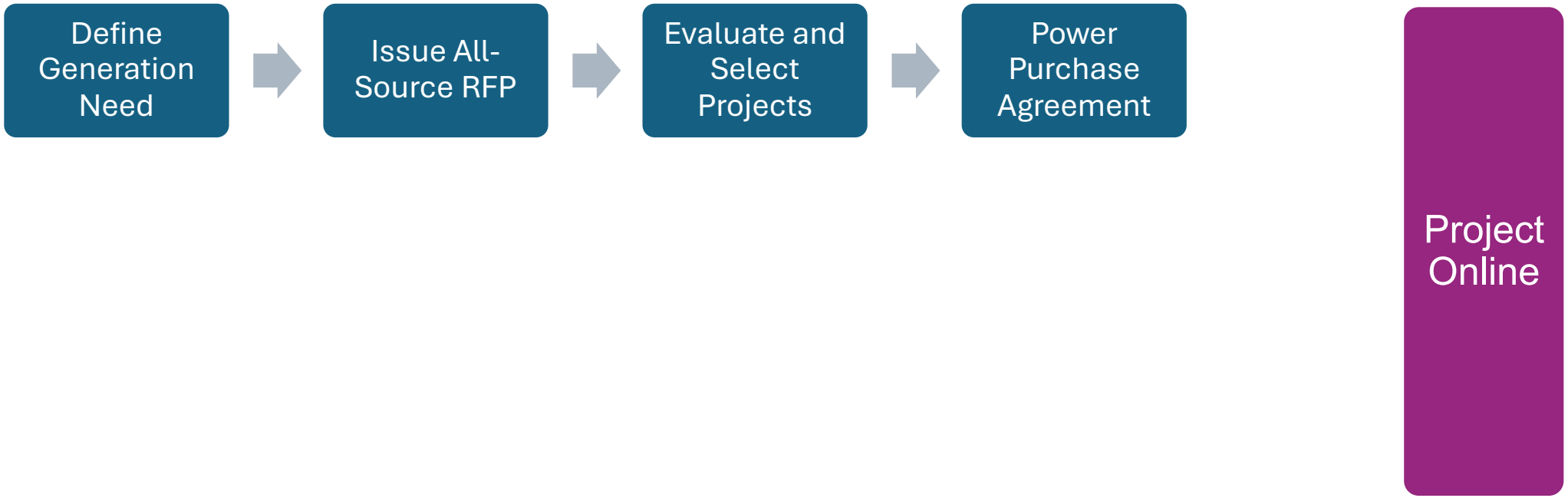
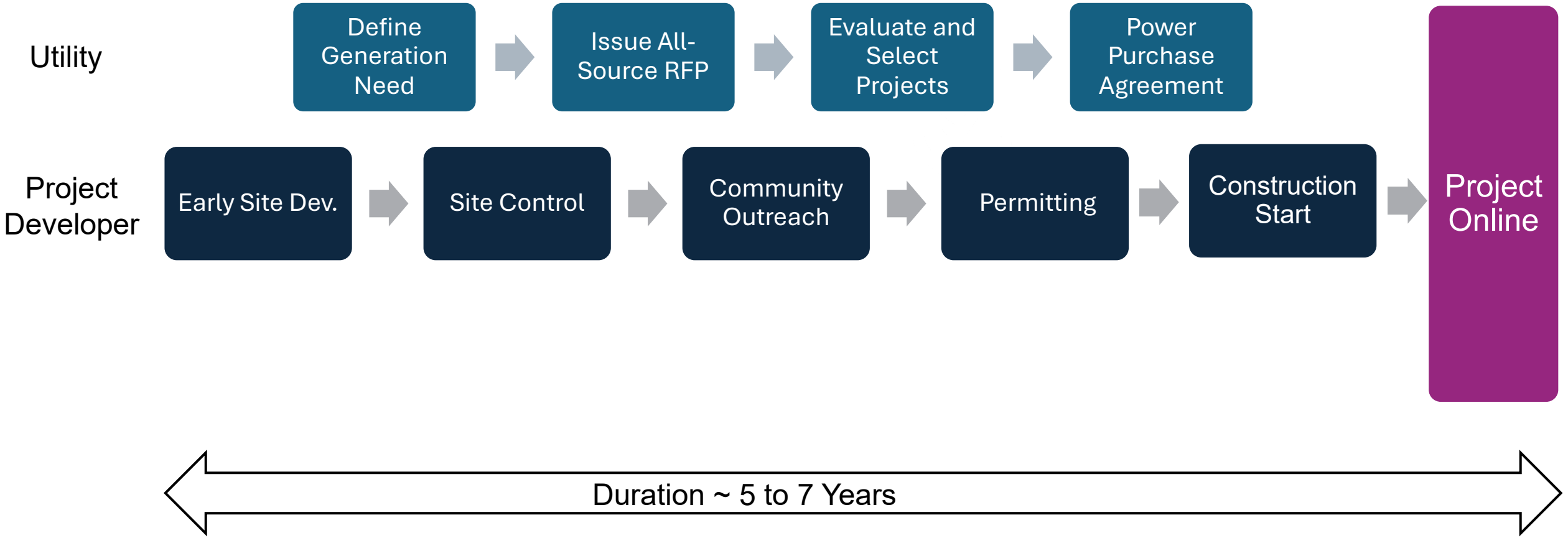
Power Generation Procurement / Development Process *

Utility



* General process flow. Timing and sequence of steps can vary based on project specifics.

Power Generation Procurement / Development Process *



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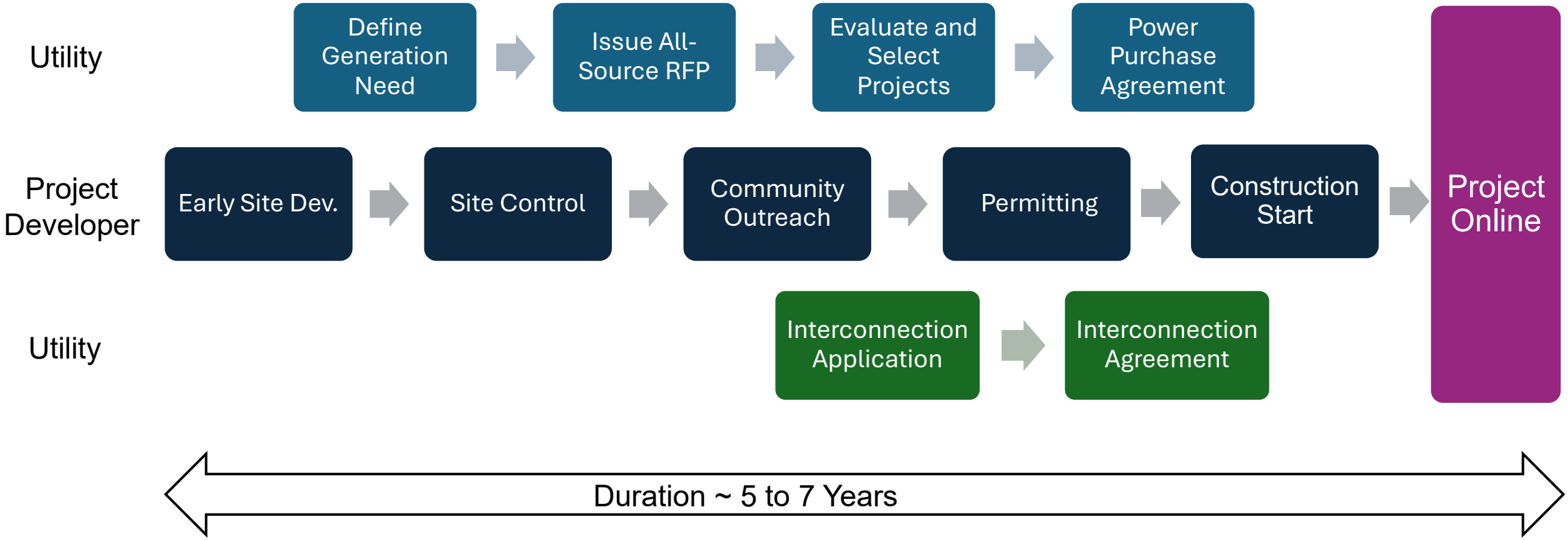

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Primer: How do we physically get the power to our customers?

<u>Interconnection Process Overview:</u>
How does the process work? What are the requirements?

- APS

Agenda

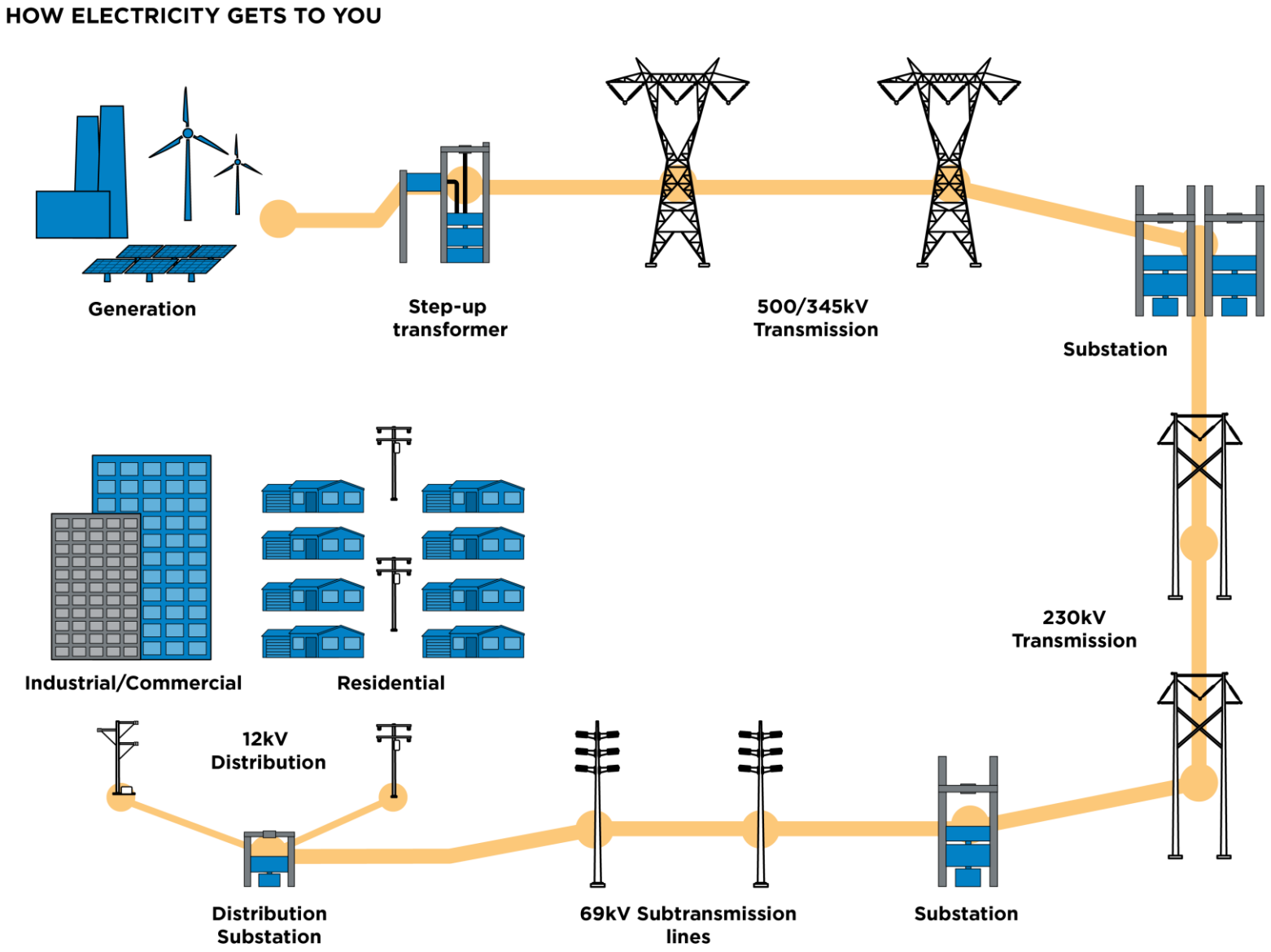
Transmission System Overview

High Level Overview of the FERC Interconnection Process

Current Queue

Q&A

Transmission System Overview



Common Terms

FERC

- Federal Energy Regulatory Commission

OATT

- Open Access Transmission Tariff
  - Attachment O (LGIA/Large Generator Interconnection Agreement)
  - Attachment P (SGIA/Small Generator Interconnection Agreement)

OASIS

- Open Access Same Time Information System
- APS public site for transmission service and information
- https://www.oasis.oati.com/azps/

FERC Generator Interconnection Process | |Why this matters to you

Customers who wish to engage in the business of **generating power and selling** to APS as well as other utilities both in and out of the state of Arizona **must engage in this process**

Generator interconnection process is designed to allow for both utilities and third-party developers to interconnect generation, but ensure that grid reliability is maintained

Four Major Requirements to a valid Interconnection Request
- Application
- Deposits
- Commercial Readiness Demonstration
- Site Control

Governed by the APS OATT

Large Gen

- >20MW
- Attachment O: Large Generator Interconnection Procedures and Agreement

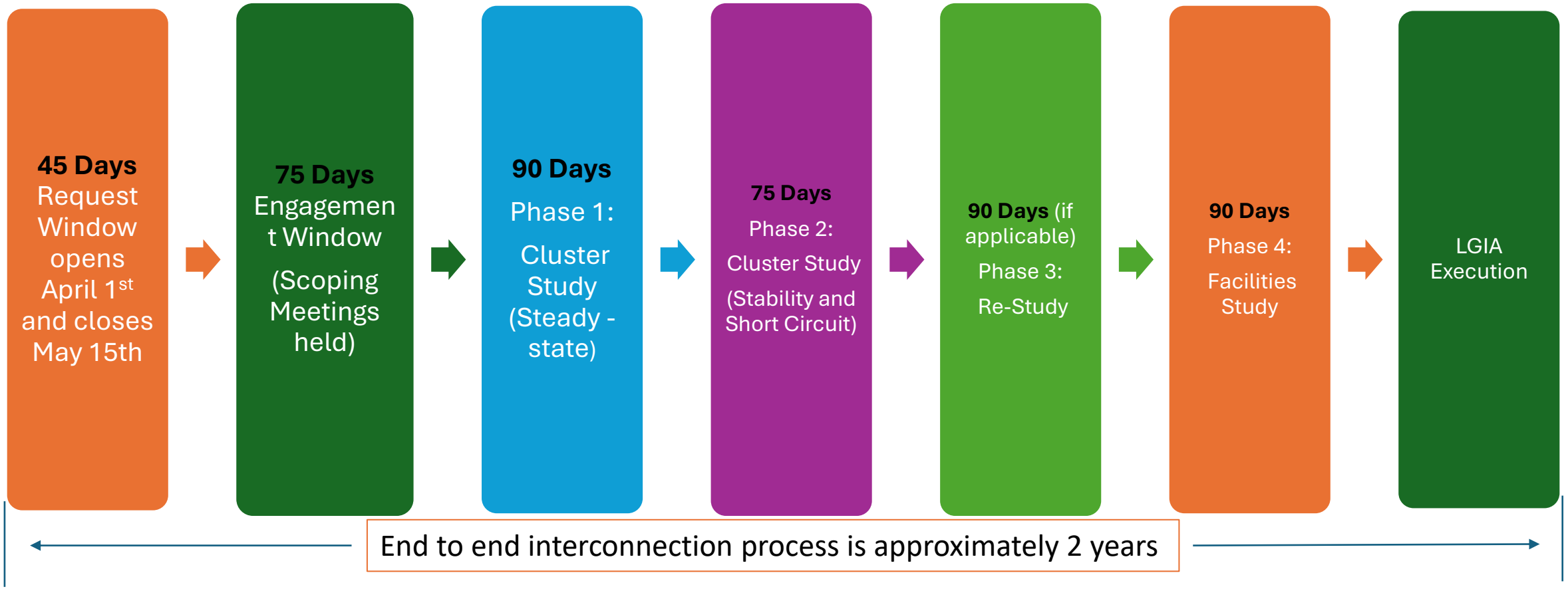
Small Gen

- <= 20MW
- Attachment P: Small Generator Interconnection Procedures and Agreement

FERC Approved

- Ensures Compliance
- Non-discriminatory and transparent process
- Customer information is confidential

Interconnection Process | General Timelines



Overview of the Queue | (as of 1/3/2025)

39,824	• MW in Queue*
101	• Total Projects in Queue (Active & Suspended)
26	• Projects in Construction
28	• Projects in Service

*Peak demand Summer 2024: 8,162MW

Northern AZ Area Specifics

Active Projects		
Q Number	**Max Electrical Output**	**Energy Source**
Q315	50 MW	Energy Storage

Projects in the Transitional Cluster		
Q444	60 MW	Solar + Energy Storage
Q524	30 MW	Solar
Q534	60 MW	Solar + Energy Storage
	Total = 150 MW	

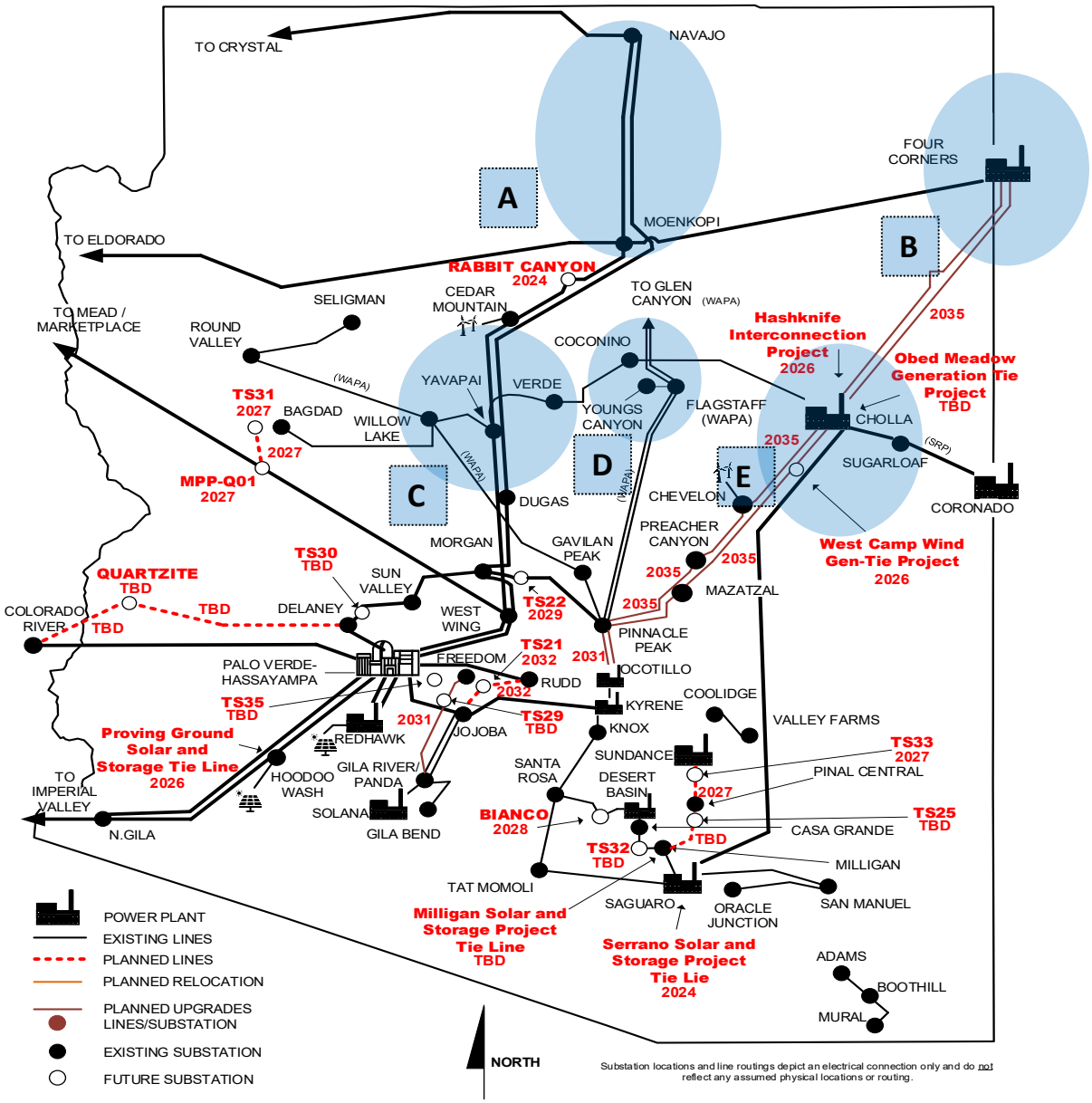
Four Corners/Cholla Area Specifics

Active Projects		
Q Number	**Max Electrical Output**	**Energy Source**
Q230	200 MW	Solar
Q259	400 MW	Solar + Energy Storage
Q270	200 MW	Solar + Energy Storage
Q271	75 MW	Energy Storage
Q275	1000 MW	Solar + Energy Storage
Q311	500 MW	Wind + Energy Storage
Q553	340 MW	Wind
Q557	75 MW	Solar + BESS
	Total = 2,790 MW	

Projects In Suspension		
Q Number	**Max Electrical Output**	**Energy Source**
Q318	1000 MW	Wind
Q319	1000 MW	Wind
Q320	1500 MW	Wind
	Total = 3,500 MW	

Projects in the Transitional Cluster		
Q Number	**Max Electrical Output**	**Energy Source**
Q333	230 MW	Solar + Energy Storage
Q347	500 MW	Wind
Q352	345 MW	Solar + Energy Storage
Q387	500 MW	Solar + Energy Storage
Q402	750 MW	Solar + Energy Storage
Q422	200 MW	Energy Storage
Q423	125 MW	Energy Storage
Q424	200 MW	Solar + Energy Storage
Q480	400 MW	Solar
Q497	300 MW	Wind
Q528	500 MW	Solar + Energy Storage
Q538	499.5 MW	Wind
Q539	499.5 MW	Wind
	Total = 5,249 MW	

Interconnection Requests | Geographic Area Summary



A – MOENKOPI/NAVAJO AREA

5 projects – 1,687 MW

B – FOUR CORNERS AREA

4 projects – 3,900 MW

C –YAVAPAI COUNTY AREA

21 projects – 9,028 MW

D – FLAGSTAFF AREA

16 projects – 6,015 MW

E – CHOLLA AREA

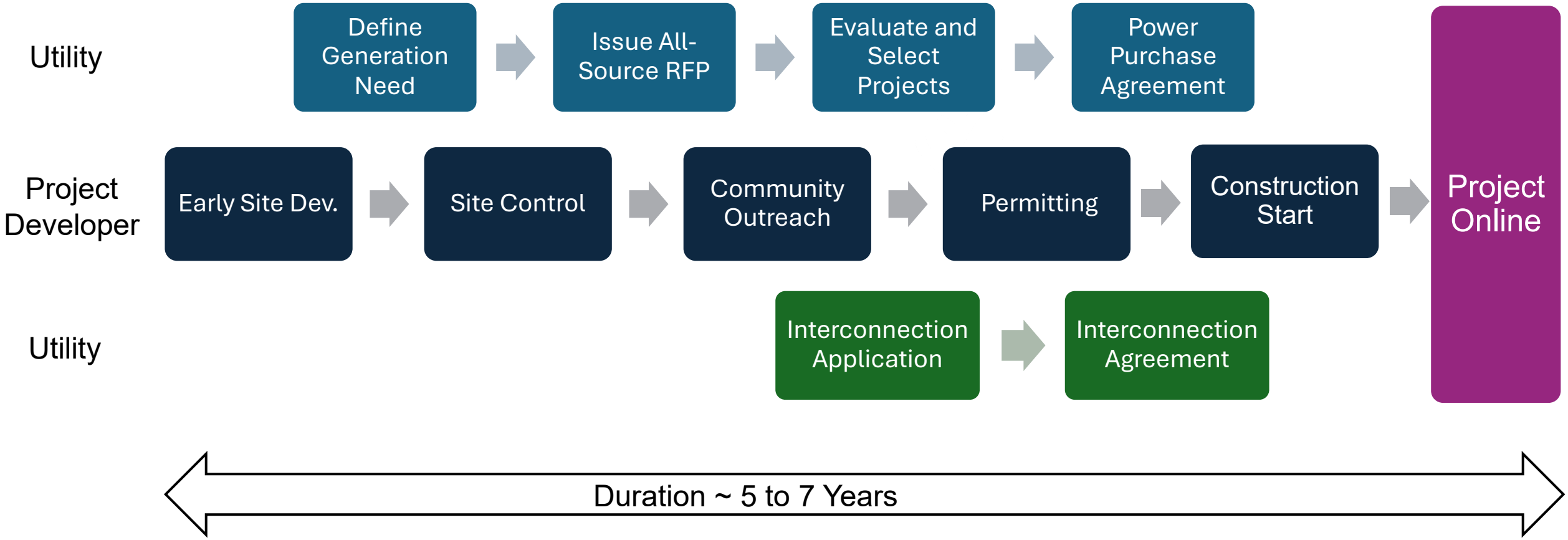
3 projects – 862 MW

Note: Generator Queue information as of 12/4/2024

Recap:

- SRP

Power Generation Procurement / Development Process *



* General process flow. Timing and sequence of steps can vary based on project specifics.

Time for Questions – All