



INTEGRATED SYSTEM PLANNING: A DISTRIBUTION SYSTEM PERSPECTIVE

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ESIG Spring Technical Workshop

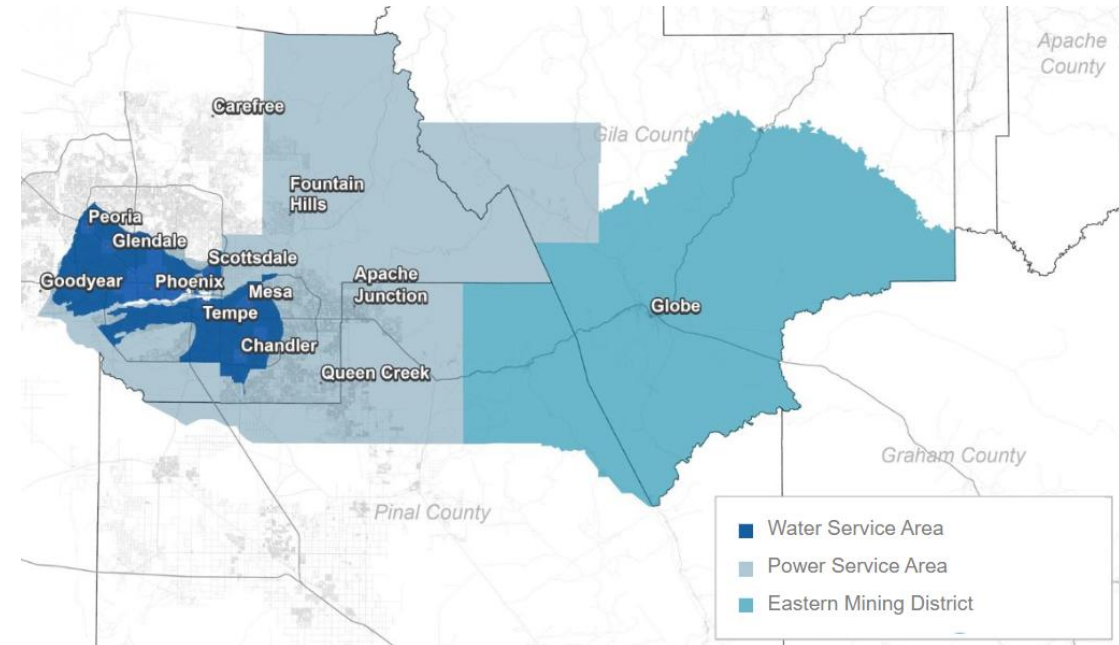
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Salt River Project (SRP)

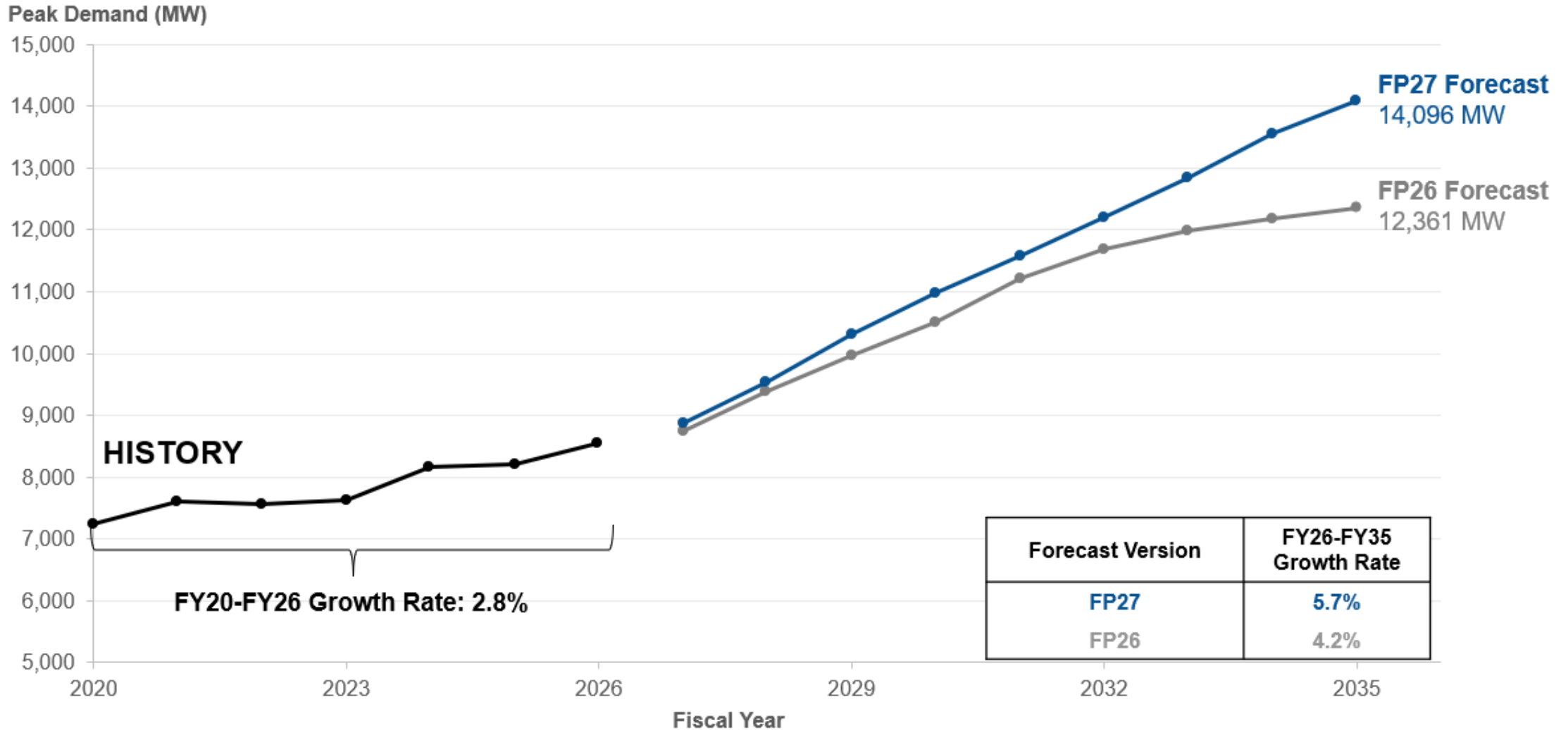
- One of the nation's largest **public power** utilities, **vertically integrated**
- Provides **water and power** to more than **1.1M+** customers
- The largest raw-water supplier, delivering **~ 750,000 acre-feet** of water annually
- Electric service area covers **2,900 square-mile**
- New system peak = **8,542 MW** on Aug. 7

Mission Statement

SRP serves our customers and communities by providing reliable, affordable and sustainable water and energy.

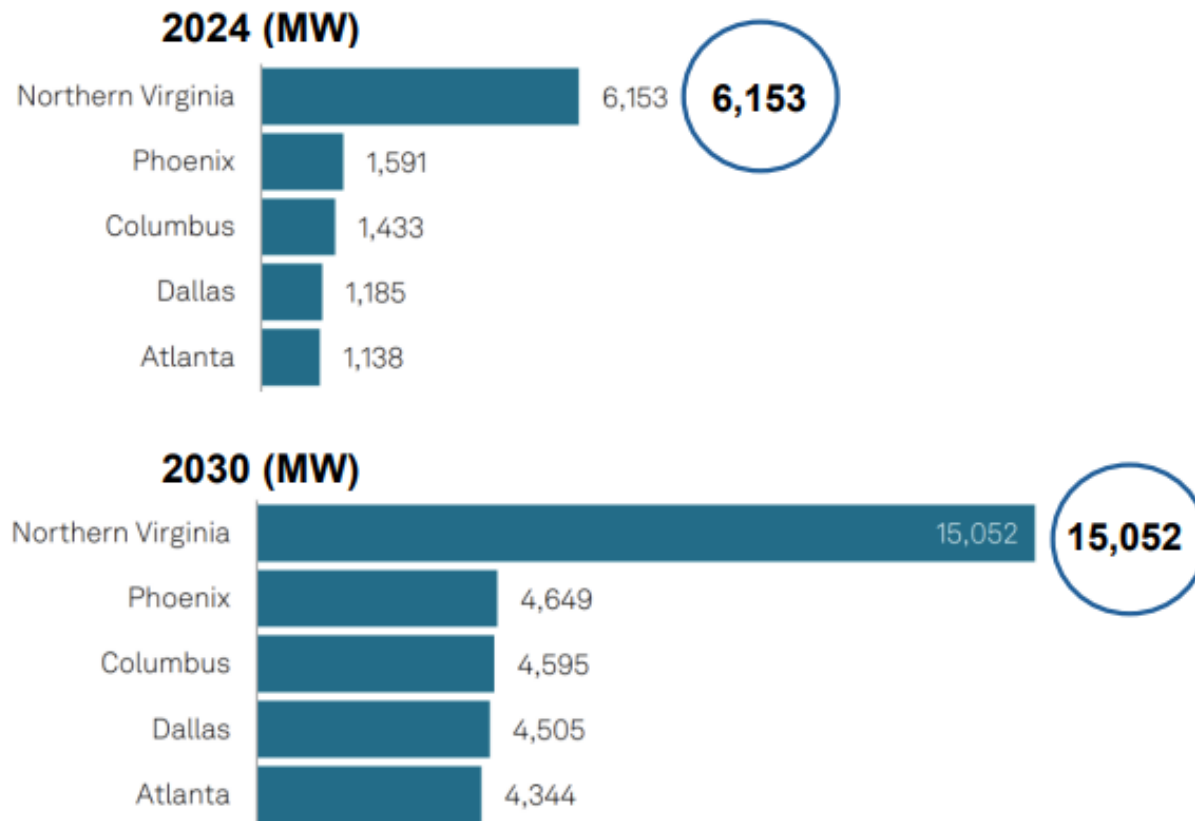


System Peak Load Forecast



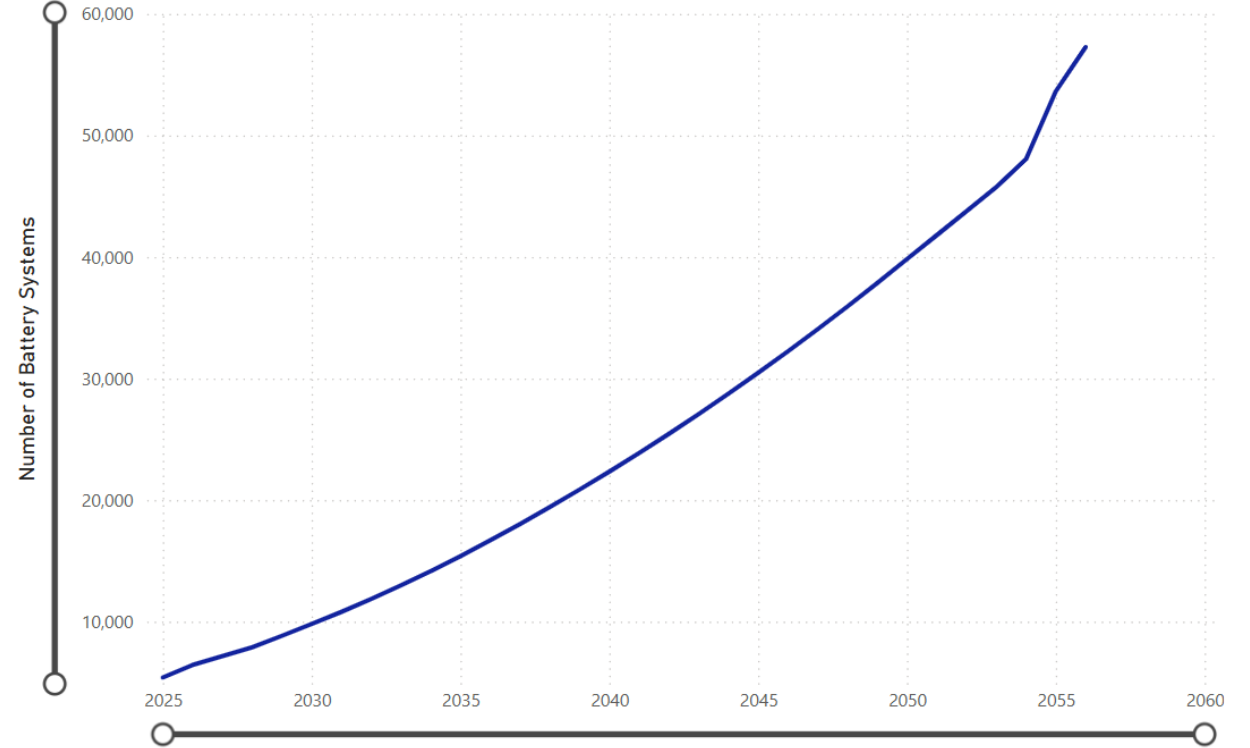
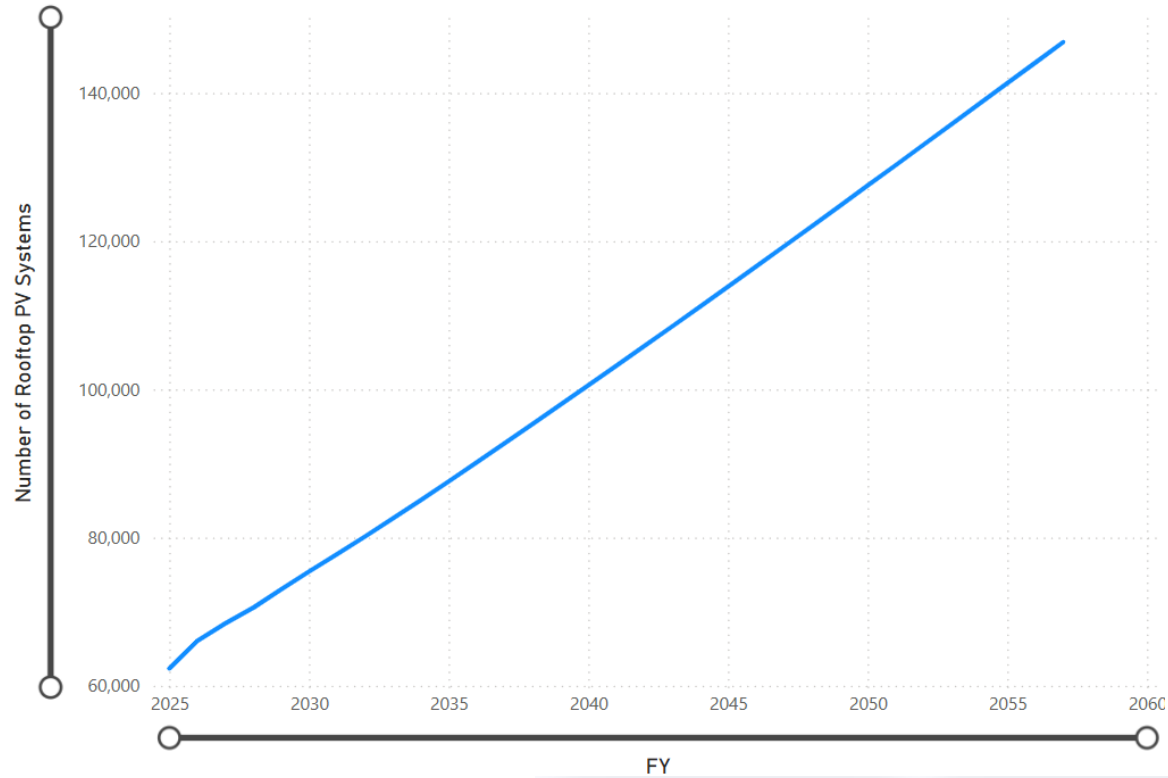
Strong Economic Growth

Top U.S. Data Center Markets



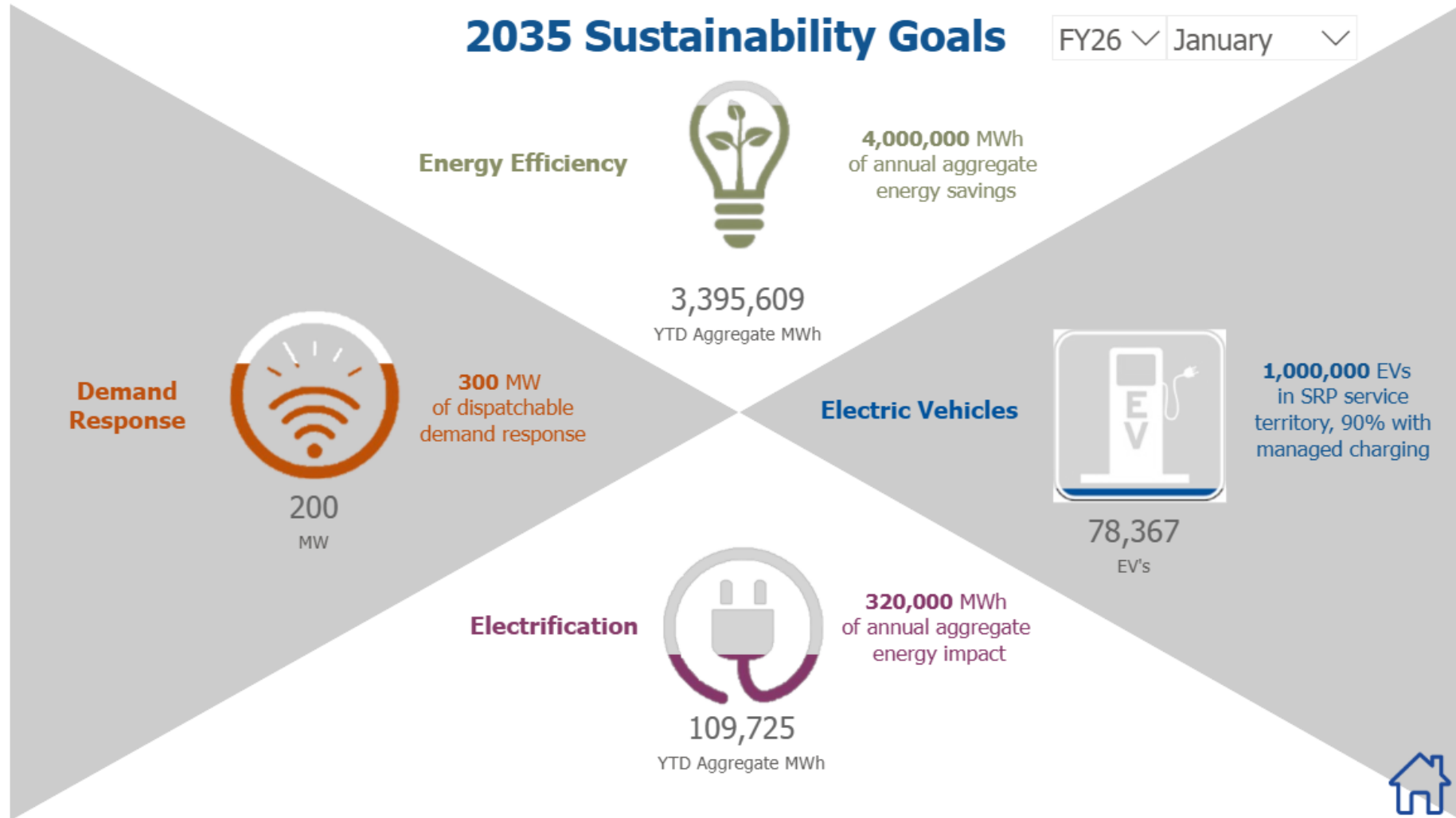
- Greater Phoenix has a population of 5.2 million and is expected to **grow to 6.1 million** by 2034.
- Phoenix was **fourth** in housing permits for 2024.
- Metro Phoenix is **No. 1** in the nation for **manufacturing** growth in the past five years

DER Adoption Trends: Increased Rooftop PV and Battery



Customers with DER	Customers with Batteries	Total Battery Capacity MW AC	Total Solar Capacity MW AC
63,931	7,899	50.63	446.73

2035 Customer Program Goals



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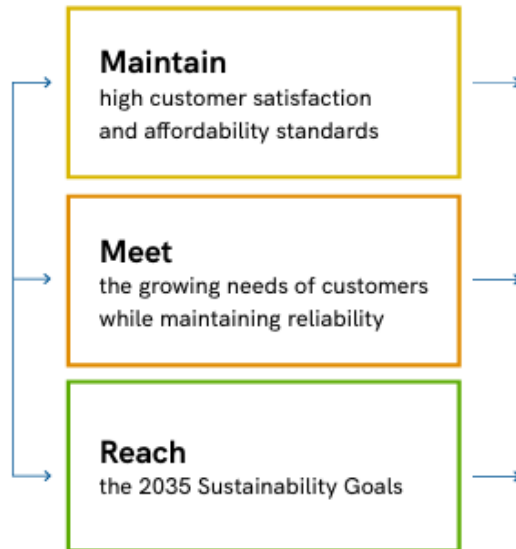
2023 Integrated System Plan → Update Review Pending

An Integrated System Plan (ISP) is the holistic roadmap for the power system of the future, which considers evolving customer needs for reliability, affordability and sustainability and achieves our 2035 goals.

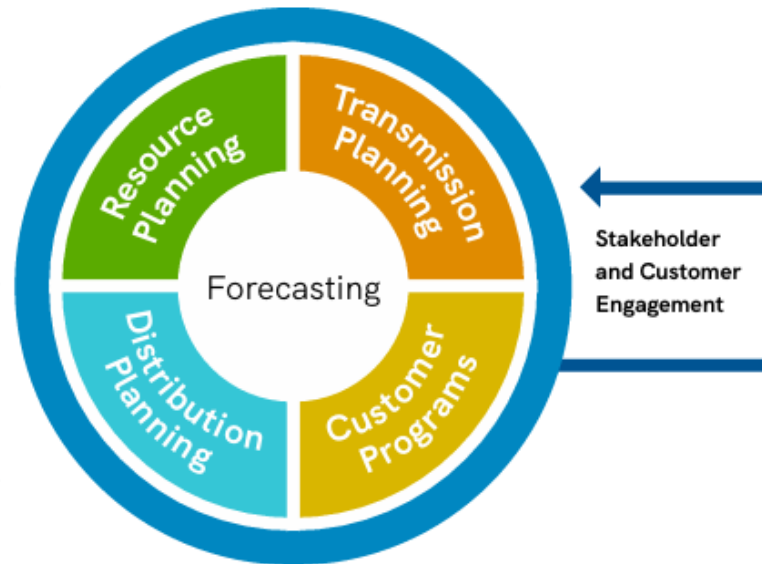
OVERARCHING MOTIVATION



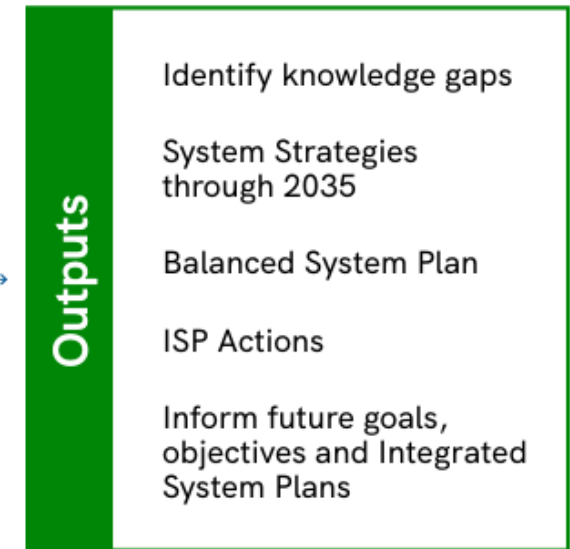
SPECIFIC GOALS



INTEGRATED SYSTEM PLAN: STUDY OF HOW TO ACHIEVE GOALS



THE WAY FORWARD



Outputs from Distribution Planning Process

Inputs

Load Forecast

Distribution System Model

New Customer Load

DER Interconnections

DER / EV Adoption



Outputs

6-Year Distribution System Plan

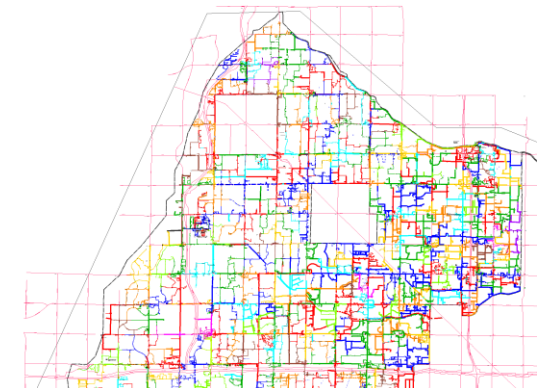
6-Year Infrastructure Upgrade Plan

10-Year Distribution System Plan

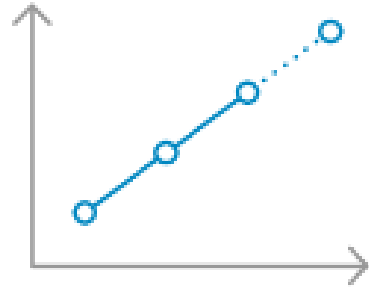
Summer Switching Plans



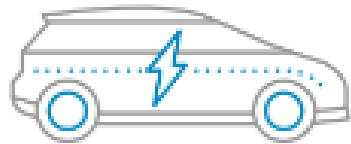
**2023
INTEGRATED
SYSTEM PLAN**



Challenges and Opportunities for Distribution Planning



- Bottlenecks with traditional system expansion and infrastructure upgrade

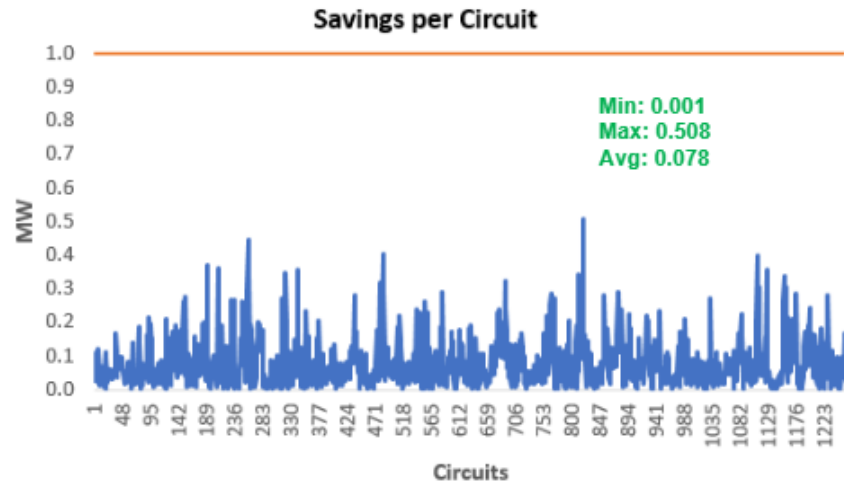


- Alternative solutions to balance growth, reliability and grid flexibility

- Flexible load management
- Customer offerings
- Enabling operational technology for DER orchestration



Flexible Load Management for Locational Value



Bay	DOC Area	Lowest Voltage Found (V)	Volts to Move (V)	# of Taps	CVR Factor	Estimated load Reduction (MW)	% Estimated load Reduction
PRS 2	5	231.11	3.11	2	0.6	0.27	0.78%
MPN 3	5	232.68	4.68	3	0.6	0.39	1.16%
SN 3	3	230.19	2.19	1	0.6	0.10	0.39%
CLK 2	5	230.97	2.97	1	0.6	0.12	0.39%
HU 2	5	230.04	2.04	1	0.6	0.12	0.39%
ROG 2	5	231.54	3.54	3	0.6	0.37	1.17%

- **Bring Your Own Thermostat (BYOT)**
Increased customer enrollment and participation are required for impactful MW savings
- **Conservation Voltage Reduction (CVR)**
6 bays, 7 events → Inconclusive results;
Plan for system-wide CVR study

Advancing Customer Offerings to Enable Grid Flexibility

Residential Battery VPP Pilot Program Design

Parameter	SRP Pilot Program
Device Control	Aggregator: EnergyHub
Customer Eligibility	Battery customers with participating technologies
Performance Incentive	\$110/kW-year; paid out seasonally
Scheduling	Up to 80 events/year across two seasons Summer: May 1 – Oct 31 Winter: Nov 1 – Apr 30 Includes weekends and holidays; 4-hour max
Program Term	5-year pilot
Enrollment Cap	5,000 customers





EV Smart Charge Program

IN COLLABORATION WITH  WeaveGrid [Login](#)

Savings with every charge

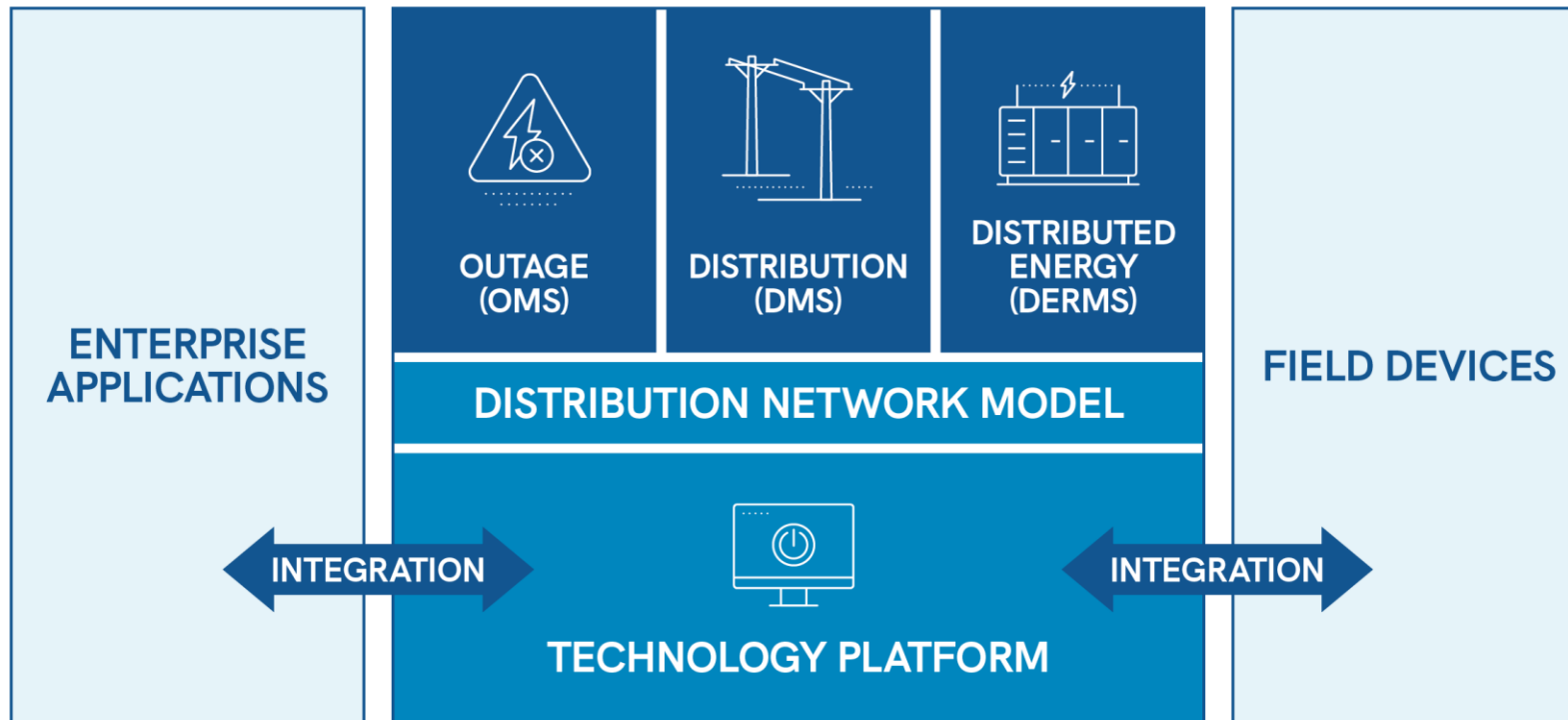


SRP EV Smart Charge™ Program Benefits

-  **\$50** enrollment reward and **\$50/year** bill credit for remaining enrolled
-  No need to remember off-peak rates and times with our smart schedules
-  Personalized EV charging reports and insights
-  Support your local electric grid by allowing WeaveGrid to schedule when your car charges

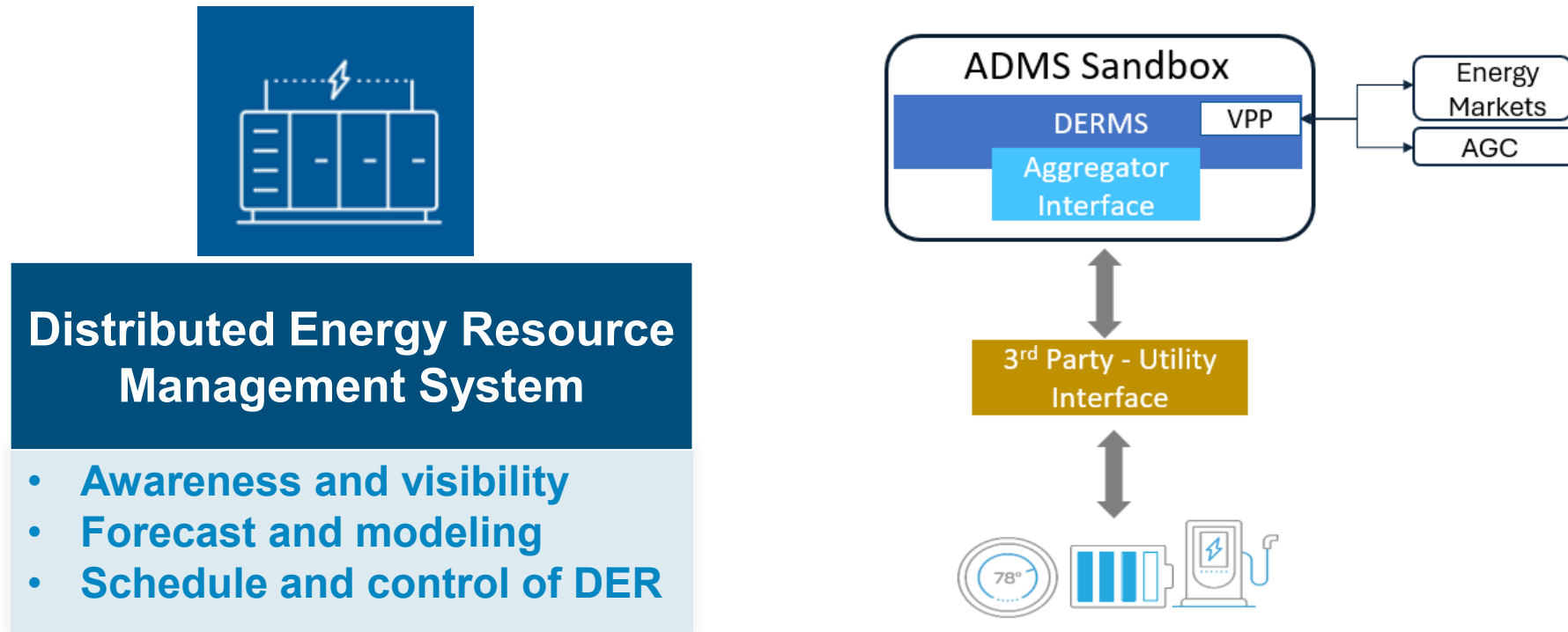
Operational Technology ADMS Deployment

Advanced Distribution Management System (ADMS) is a software platform that comprises a suite of applications used for real-time management of the electric distribution grid.



- Foundation launched in January 2025
- Advanced applications on the roadmap:
 - Volt Var Control and Volt Var Optimization
 - Microgrid Management
 - Virtual Power Plant

DERMS Enables Integration of DER into Distribution Operations



- **R&D projects:**

- Microgrid testing
- DER control and scheduling
- DER gateway

- **Grid DERMS integration with edge DERMS**

- **FTM interconnections**

SRP's Electric Distribution System...

- ...has been around over 100 years and plays a key role in supporting SRP customers
- ...shrewd practices and design decisions have enabled industry leading reliability
- ...requires effective planning, operations, maintenance and investment to remain an industry leader
- **...is undergoing unprecedented change requiring proactive strategy, innovation and effective prioritization**



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THANK YOU.

