

NASPI

Work Group Meeting and Vendor Show

Chris Janick | Sr. Director - Power Delivery | Salt River Project

April 4, 2023

New to Phoenix Safety



HANDS-FREE ARIZONA

ARIZONA'S NEW CELL PHONE LAW PROHIBITS

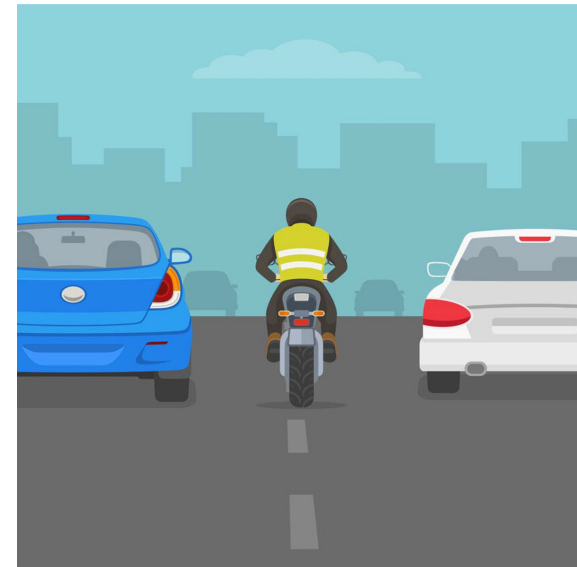
- ✗ Holding or supporting a wireless device while driving
- ✗ Writing or reading any text-based communication while driving
- ✗ Watching, recording, or broadcasting video while driving

EXEMPTIONS

- Takes effect immediately, penalties begin 01/01/2021
- Hands-free, voice-to-text
- Stopped at a traffic light
- Reporting an emergency



Every Vehicle, Every Time.



New to Phoenix Safety

Harmless



Harmful



New to Phoenix Safety



Hike Smart

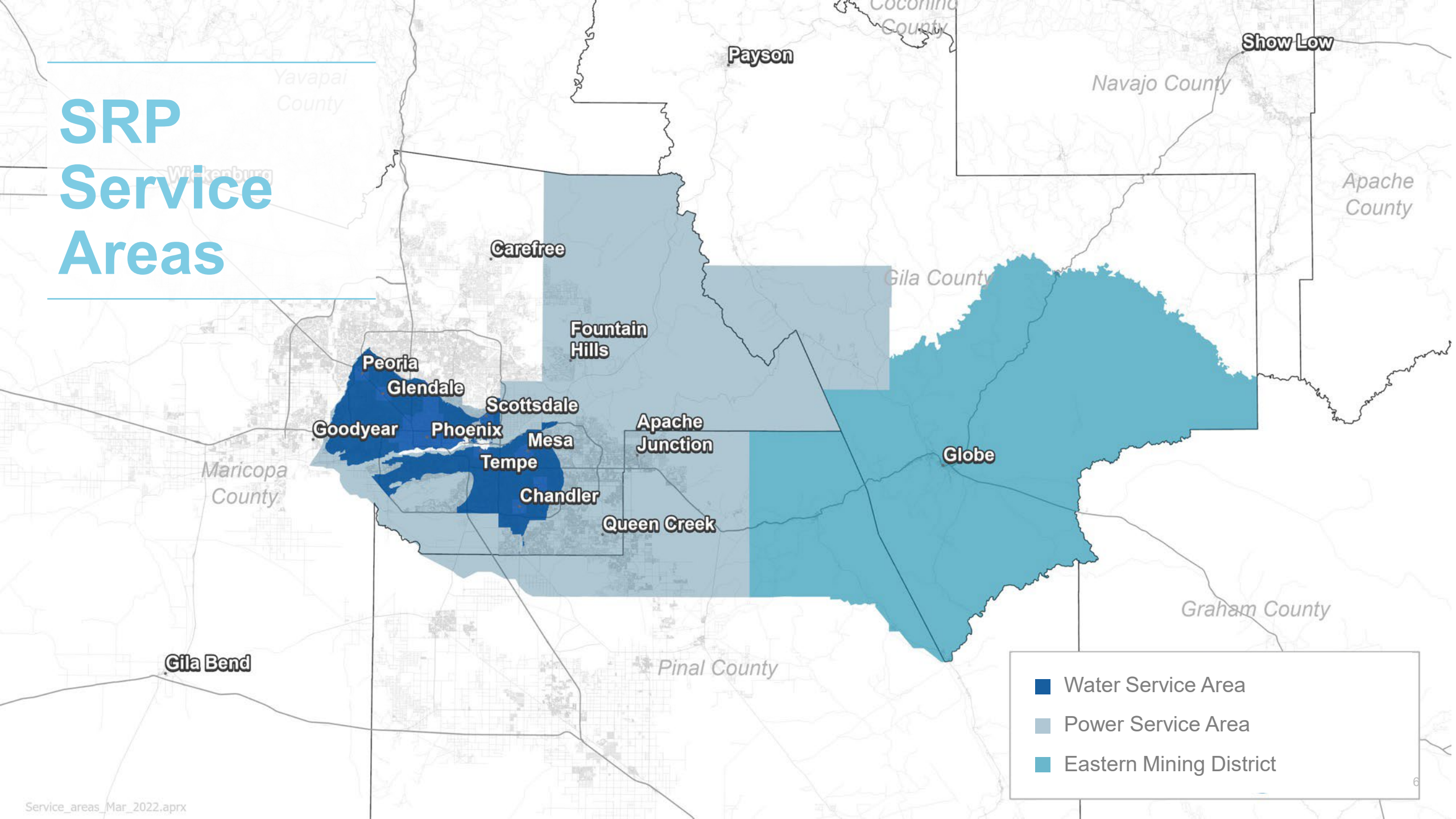
- Know your limits
- Plan your hike
- Hike with supplies
- Keep track of time/distance, yield to uphill hikers, take breaks
- Don't hike alone, tell someone where you are going and when you expect to be back

SRP

- One of the nation's largest public power utilities
- Provides reliable, affordable, and sustainable water and power to more than **2 Million** people
- The largest raw-water supplier in the Phoenix metro area, delivering about **800,000** acre-feet of water annually
- Peak power demand of **7,600 MW** and growing rapidly



SRP Service Areas



Strong Economic Growth Ahead

Maricopa County is the fastest growing county in the U.S.

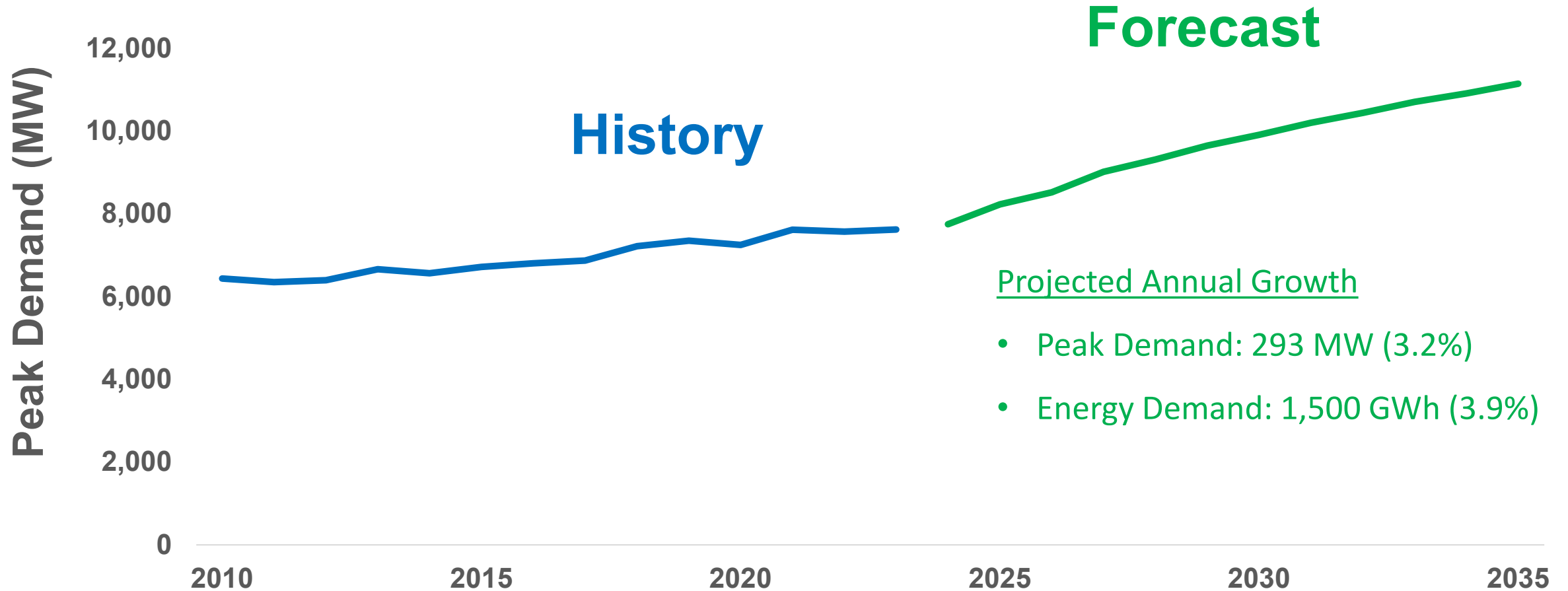
Phoenix is #1 U.S. city for domestic migration

Significant industrial customer growth

Housing permits are at the highest levels since mid-2000s

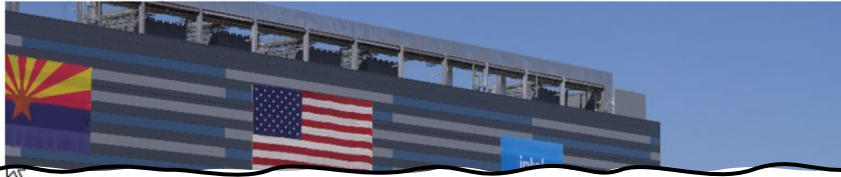


SRP's System Growth



Intel \$20B Arizona Plant Expansion Aimed at Fixing Microchip Shortage

By James Leggate



BUSINESS

Korean electronics giant LG announces huge expansion of plans for battery factory in Queen Creek

Published 9:55 a.m. MT March 24, 2023 | Updated 11:00 a.m. MT March 24, 2023



An artist's rendering shows some of the buildings planned at LG Energy Solution's battery manufacturing plant in Queen Creek. Courtesy Of Ware Malcomb

ECONOMY

As Arizona data center is still under construction, Meta announces expansion to Mesa location



Russ Wiles

Arizona Republic

Published 4:35 p.m. MT May 4, 2022



The New York Times

How Arizona Is Positioning Itself for \$52 Billion to the Chips Industry

The state has become a hub for chip makers including Intel and TSMC, as the government prepares to release a gusher of funds for the strategic industry.

EastValley.com

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SPOTLIGHT FEATURED

Mesa lands big Google data center

By Jim Walsh, Tribune Staff Writer Jul 1, 2019 0



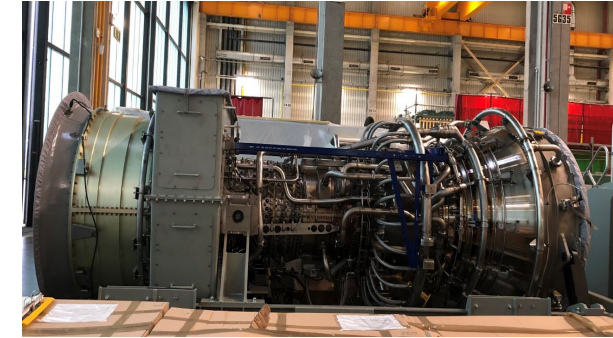
Meeting Near-Term Needs with “AND” Strategy



Solar Additions
2025 MW by 2025



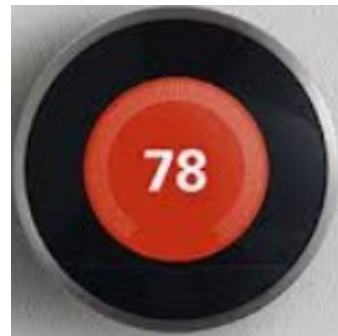
Battery Storage
+1,098 MW by 2025



Flexible Natural Gas
+99 MW by 2025



Palo Verde Nuclear
+114 MW by 2024



Demand Response
188 MW by 2025



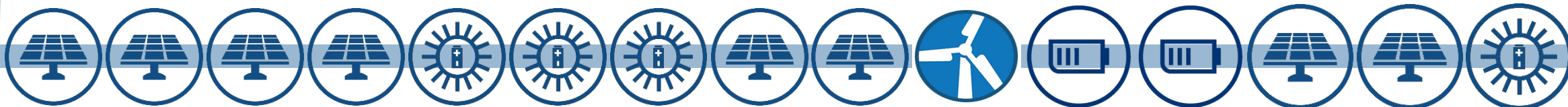
Wind
+161 MW by 2024



Natural Gas Upgrades
190 MW by 2024

Renewable and Energy Storage Additions

2020



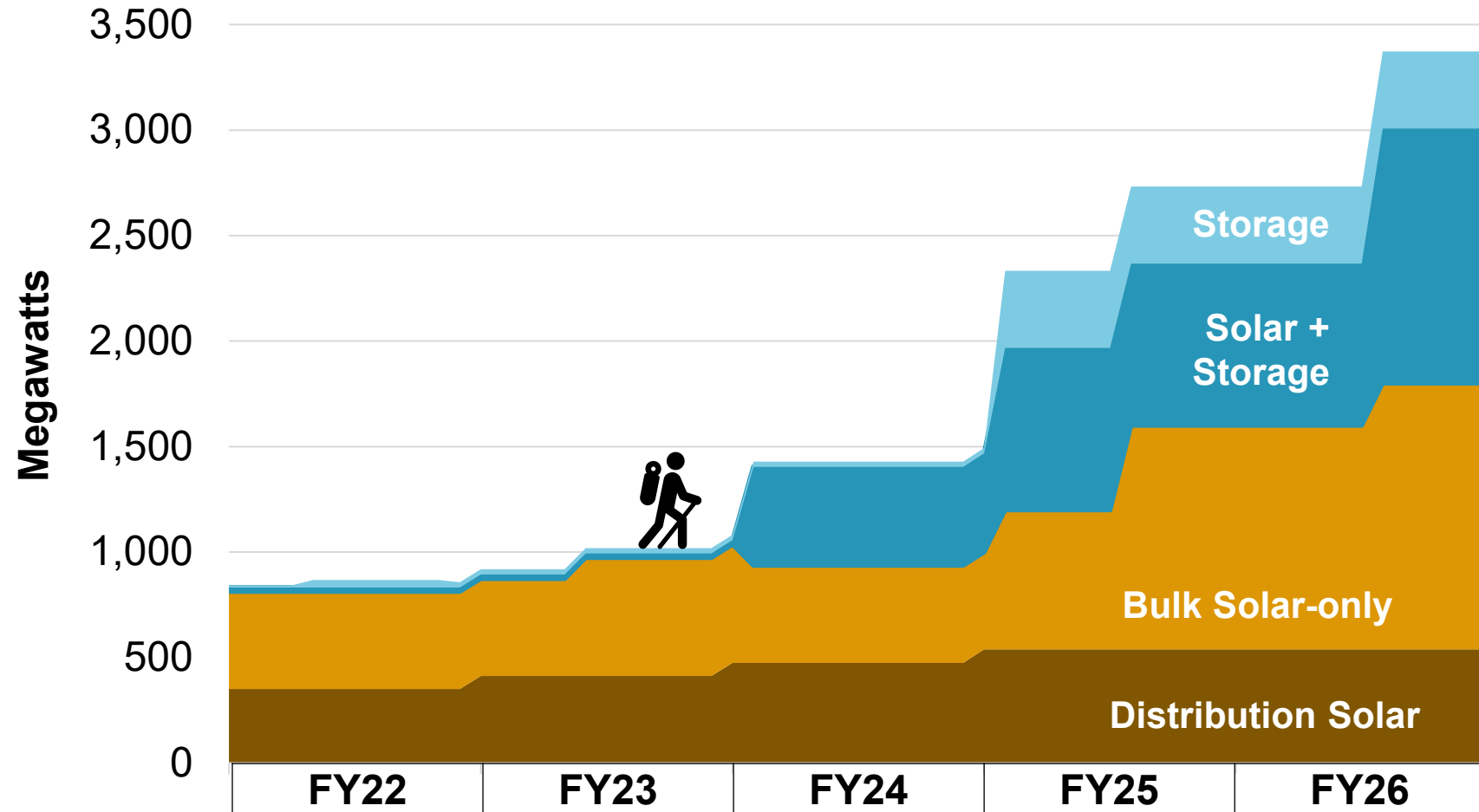
2025

2020	2020	2022	2022	2023	2023	2023	2024	2024	2024	2024	2024	2024	2025	2025	By end of 2025
East Line	Saint	Central Line	West Line	Sonoran	Storey	Saint Battery	Randolph	Copper Crossing	Babbitt Ranch	Sierra Estrella	Superstition	Co Bar	Cameron	Additional Projects	+694MW
100MW	100MW	100MW	100MW	260MW	88MW	100MW	200MW	55MW	161MW	250MW	90MW	400MW	200MW		

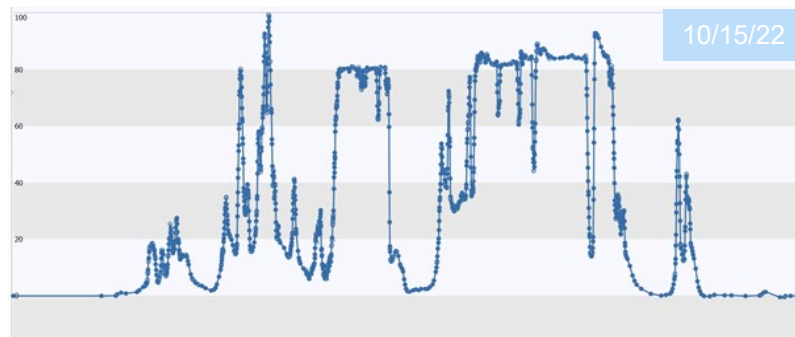
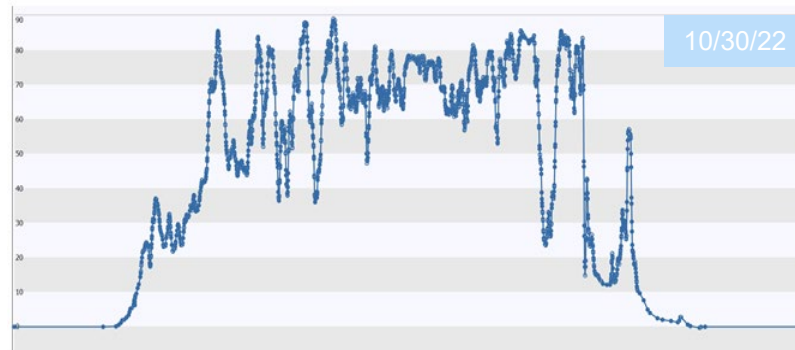
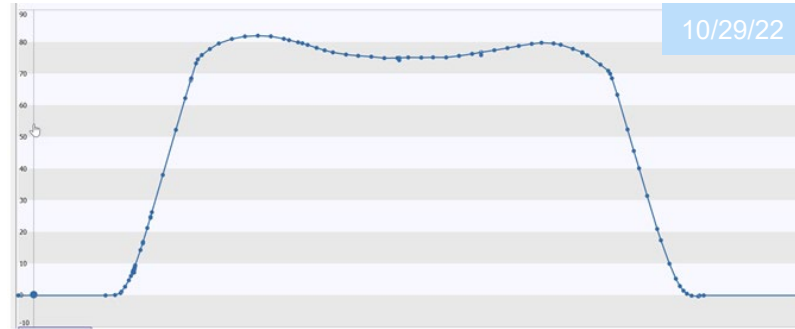




SRP's Version



Key Challenge of Solar Energy



Forecasting, analyzing, and responding to the **variability** and the **uncertainty** of solar energy are operational challenges

Transformation is Hard



SRP's Operational Readiness Approach

- **Operational Readiness** is the capability for SRP to operate the future grid **safely, reliably, and cost-effectively** as intermittent resources are added
- **Operational Readiness Strategy**
 - Clearly and accurately represents what SRP needs to do to operate this new future grid
 - Address the **who, what, where** and **why** with an emphasis on systems, processes and tools

May 03, 2021

SRP to more than Double its Utility Scale Solar to 2,025 Megawatts by 2025

Salt River Project today announced plans to more than double its 2025 utility-scale solar commitment to now add a total of 2,025 megawatts (MW) of new utility-scale solar energy to its power system by the end of fiscal year 2025, driven in part by dedicated customer demand for new renewables. This is more than 1,000MW beyond SRP's original 2025 commitment of 1,000MW, [announced](#) in November 2018. As part of this 1,025MW solar increase, 450MW is enabled by an SRP commercial customer to meet its renewable energy commitments. All the renewable energy purchased is expected to be from solar energy developments built in Arizona or on the Navajo Nation and will ultimately be used by SRP commercial and residential customers.

"As we plan for our customers' increasing need for energy and their desire for a cleaner environment, solar energy is a key solution that is significantly growing our sustainable generation portfolio," said SRP's CEO

and General Manager Mike Hummel. "Doubling solar purchases over the



Operational Readiness Gaps



GENERATION

Dispatchability

Reserves

Grid Services

New Technology



TOOLS

Forecasting

Situational Awareness

Analysis

Software Integration



PEOPLE

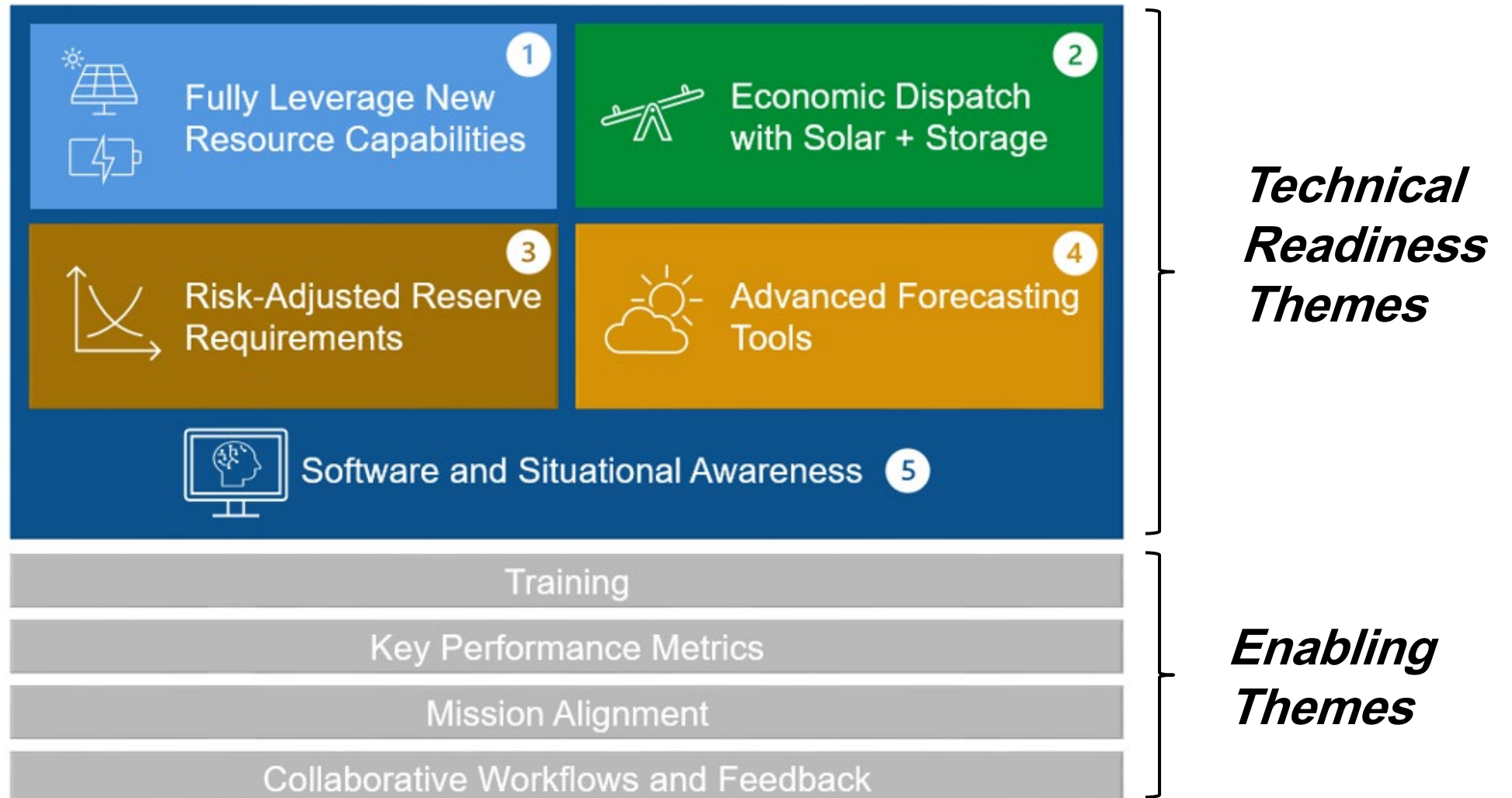
Training

Expertise






Collaboration & Feedback

Mission

Operational Readiness Themes



Operational Readiness Projects

 Fully Leverage New Resource Capabilities	 Economic Dispatch with Solar + Storage	 Risk Adjusted Reserve Requirements	 Advanced Forecasting Tools	 Software & Situational Awareness
1 Enable visibility and physical dispatch (Bolster Testing) ¹	4 Enhance IBR economic dispatch ¹	5 Develop and implement flex reserves capacity ¹	6 Advanced solar forecasting tools ¹	8 IBR data, communications and displays ¹
2 Add dispatch flexibility to IBR PPAs ¹	13 PCI/Aurora economic dispatch improvements ²	15 System variability analysis ²	7 Solar forecast integration ¹	9 Intra-hour solar variability ¹
3 IBR value stream analysis ¹	14 Fleet ramping capability analysis ²		16 Load forecasting improvements ³	17 Control room IBR video wall ²
10 TGO renewables desk evaluation ³				18 System power quality & inertia monitoring ³
11 DER integration & aggregation ³				19 EIM process and tools improvement ²
12 Inverter technical standards & integration inc relay settings for IBRs ²				20 Software infrastructure improvements ²

Tier Levels 1 – Reliability Critical 2 – Cost Effectiveness 3 – Process Efficiencies & Scalability

Distribution Grid Transformation Drivers

Grid Integrity

- More dynamic grid
- Bi-directional power flow
- New solutions available to address grid issues

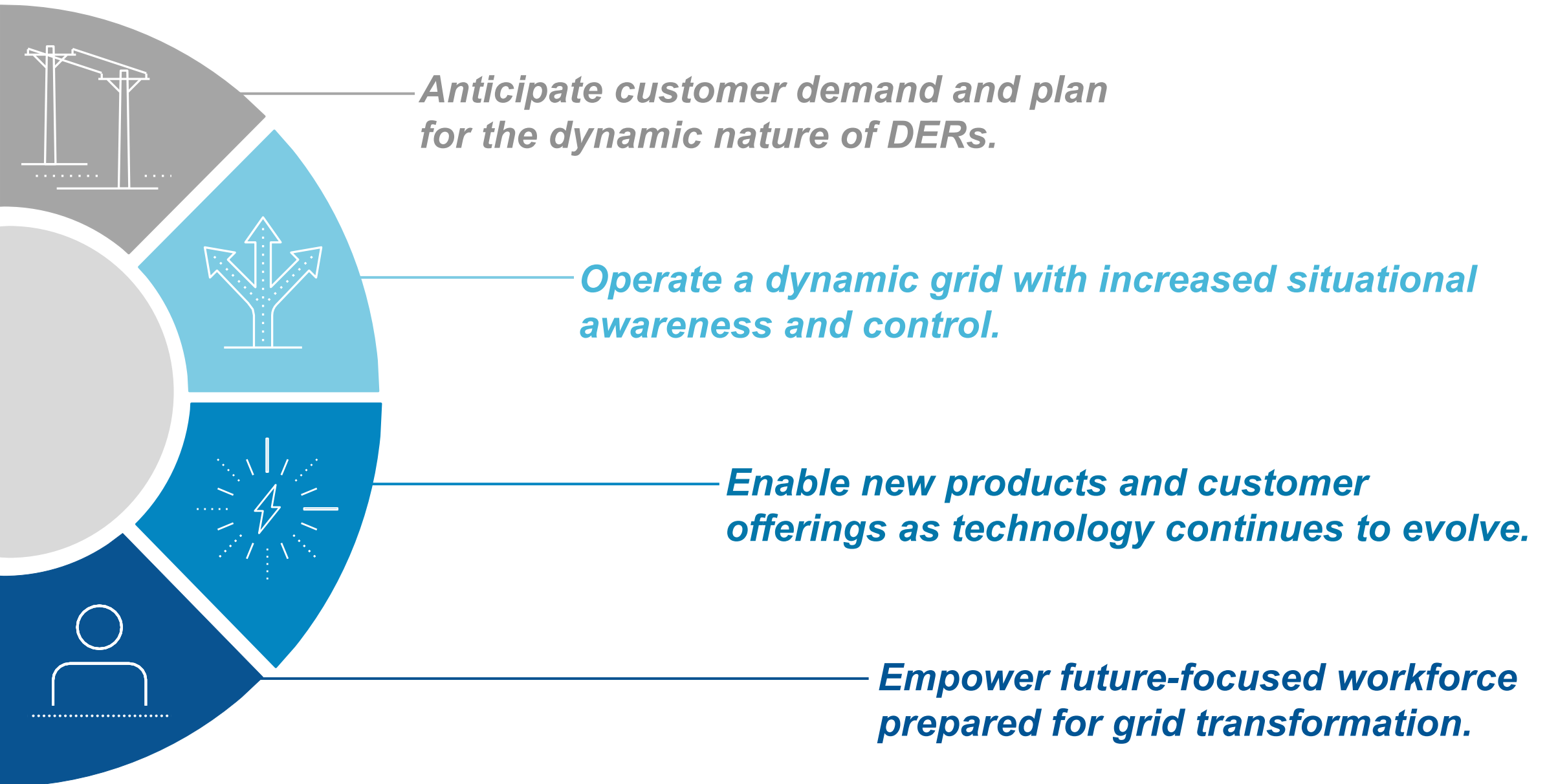
DER/EV Management

- Dispatchable & variable energy resources
- Flexible loads
- Customer integration

Customer Enablement

- Customer interconnection experience
- Enable customer programs
- Customer information

SRP's Distribution Enablement Vision



Successful Grid Transformation Requires



INNOVATION



GROWTH MINDSET



VOICE

thank you!