Salt River Project Resource Planning

Technical Working Group

Dan Schaefer | July 10th, 2024

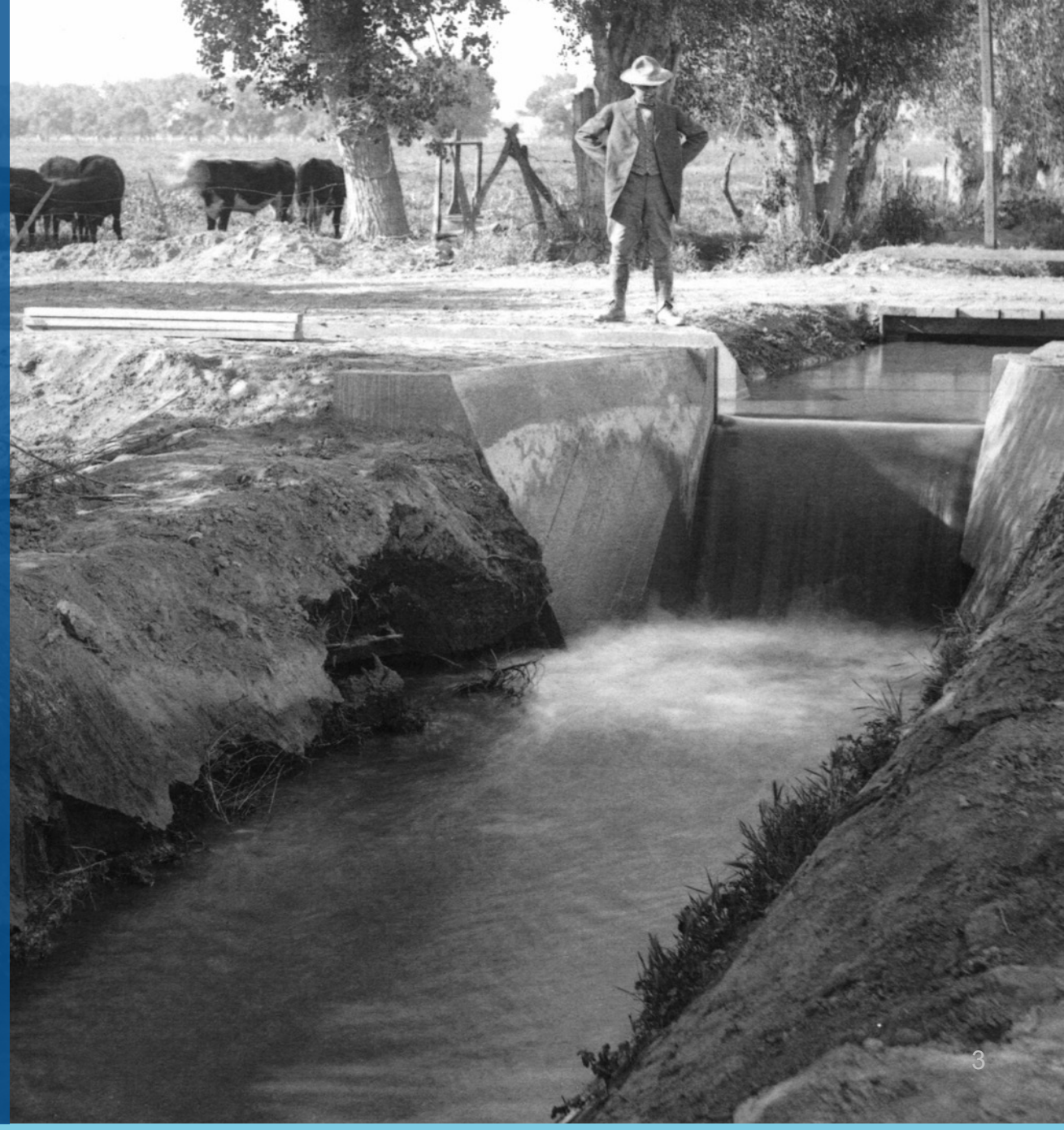
Dan.Schaefer@srpnet.com

Overview and Key Takeaways

- One of the fastest growing utilities in the country serving millions of people in the Phoenix Area.
- The growth rate of demand is accelerating at an unprecedented rate.
- Intermittent generation is driving significant changes in operations and planning.
- Bringing on new resources is challenging the ability to meet future demand.
- The grid is changing and the approach to planning is changing with it.

What is SRP?

- Established in 1903 by the Bureau of Reclamation (one of the first five in the United States)
- It's made up of two separate organizations: the 'Association,' a private water corporation founded in 1903, and the 'District,' a provider of electricity founded in 1937.

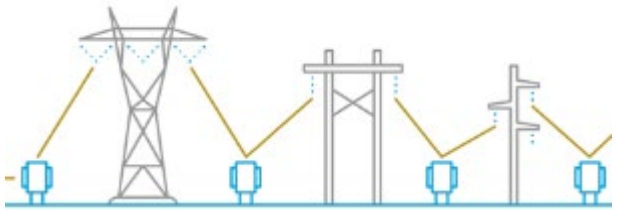


What is SRP?

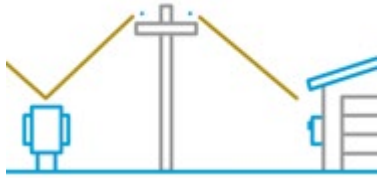
- One of the nation's largest public power utilities
- Provide reliable, affordable water and power to more than **2 Million** people
- One of the largest raw-water supplier in the Valley, delivering about **800,000** acre-feet of water annually
- Managing a **13,000** square-mile watershed

Traditional Electric Grid

Generation



Transmission

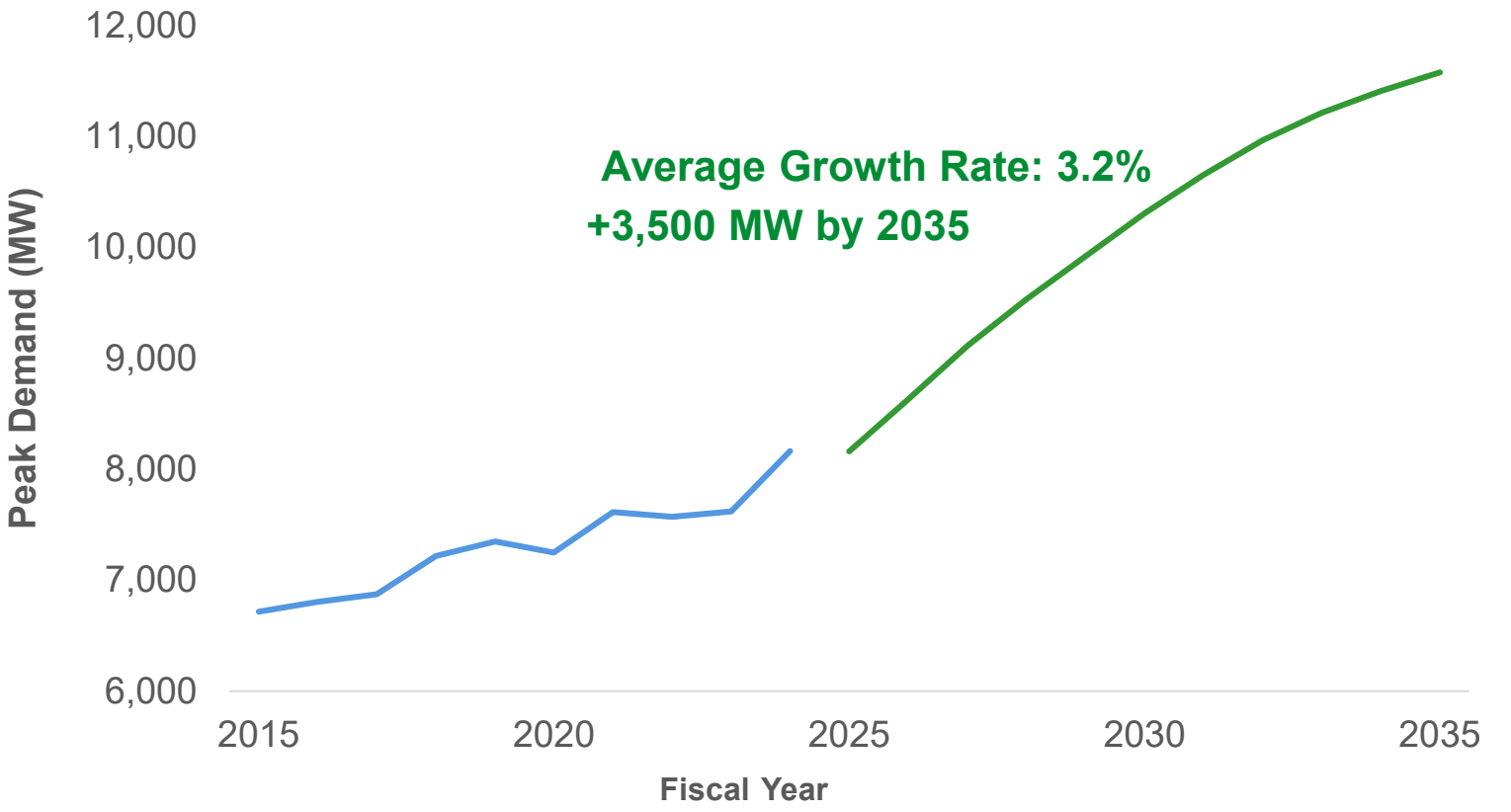


Distribution

Customers

Key Resource Planning Considerations

Significant Load Growth



Forecasted growth in annual energy – 4.6% per year through 2035

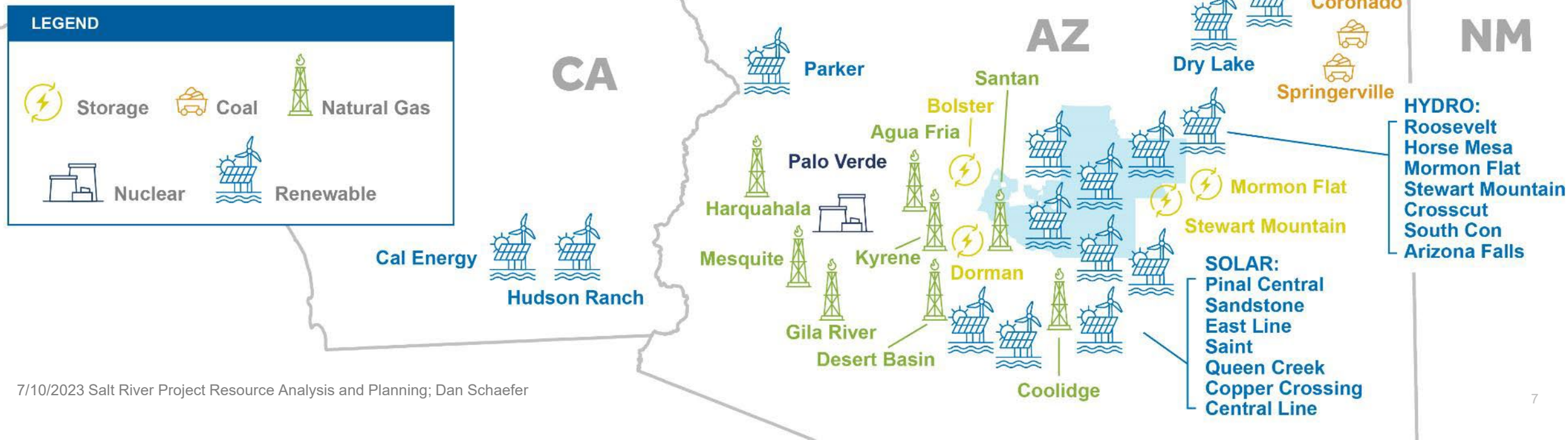
More Ambitious Carbon Reduction Goals

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

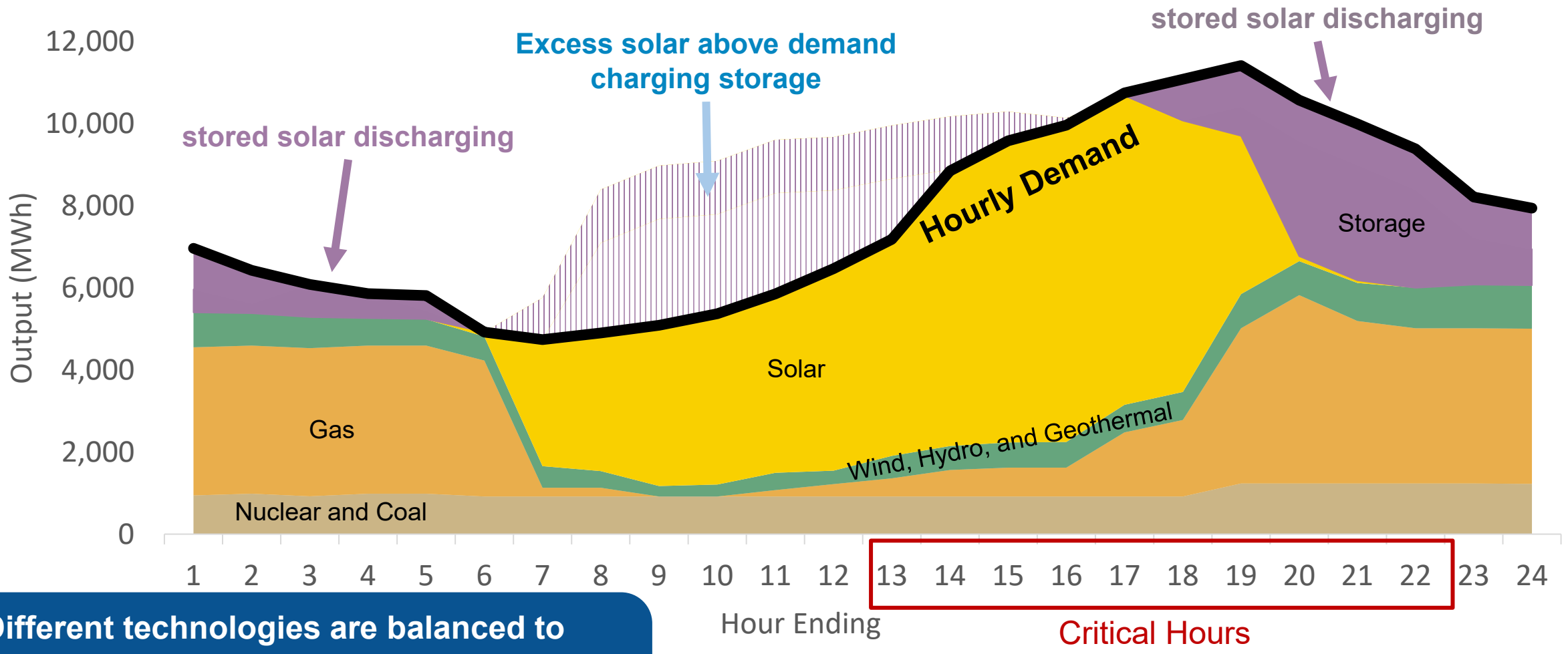
By 2050: Net zero carbon emissions

SRP's load growth is accelerating at an unprecedented rate. Energy growth is forecasted to accelerate faster than peak annual demand. The system is rapidly changing as SRP is simultaneously decarbonizing generation.

SRP Resources Today



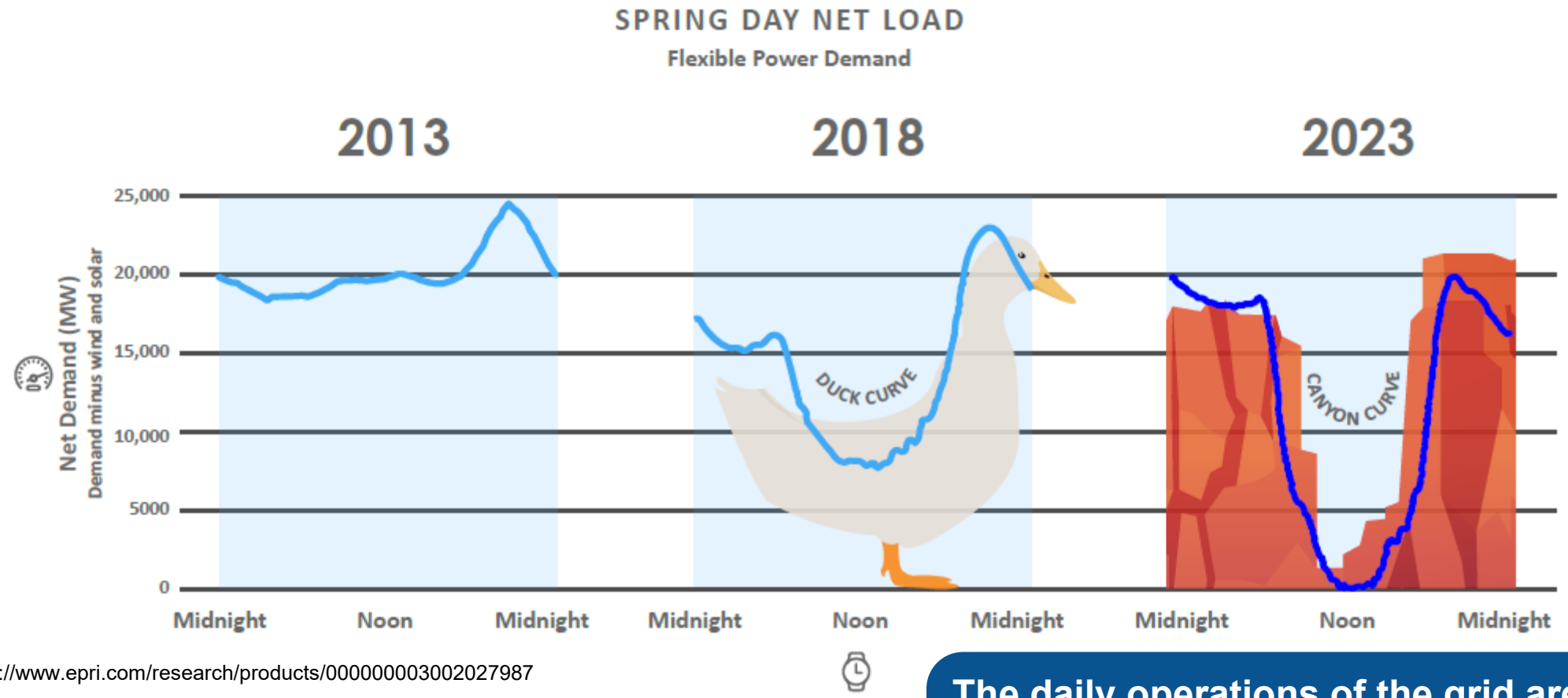
FP25 Demand Forecast



Different technologies are balanced to meet demand in each hour, optimizing reliability, affordability and sustainability. Critical hours of reliability are 13-22.

* Modeling result – actual daily operations will differ

Evolving Daily Demand Profile

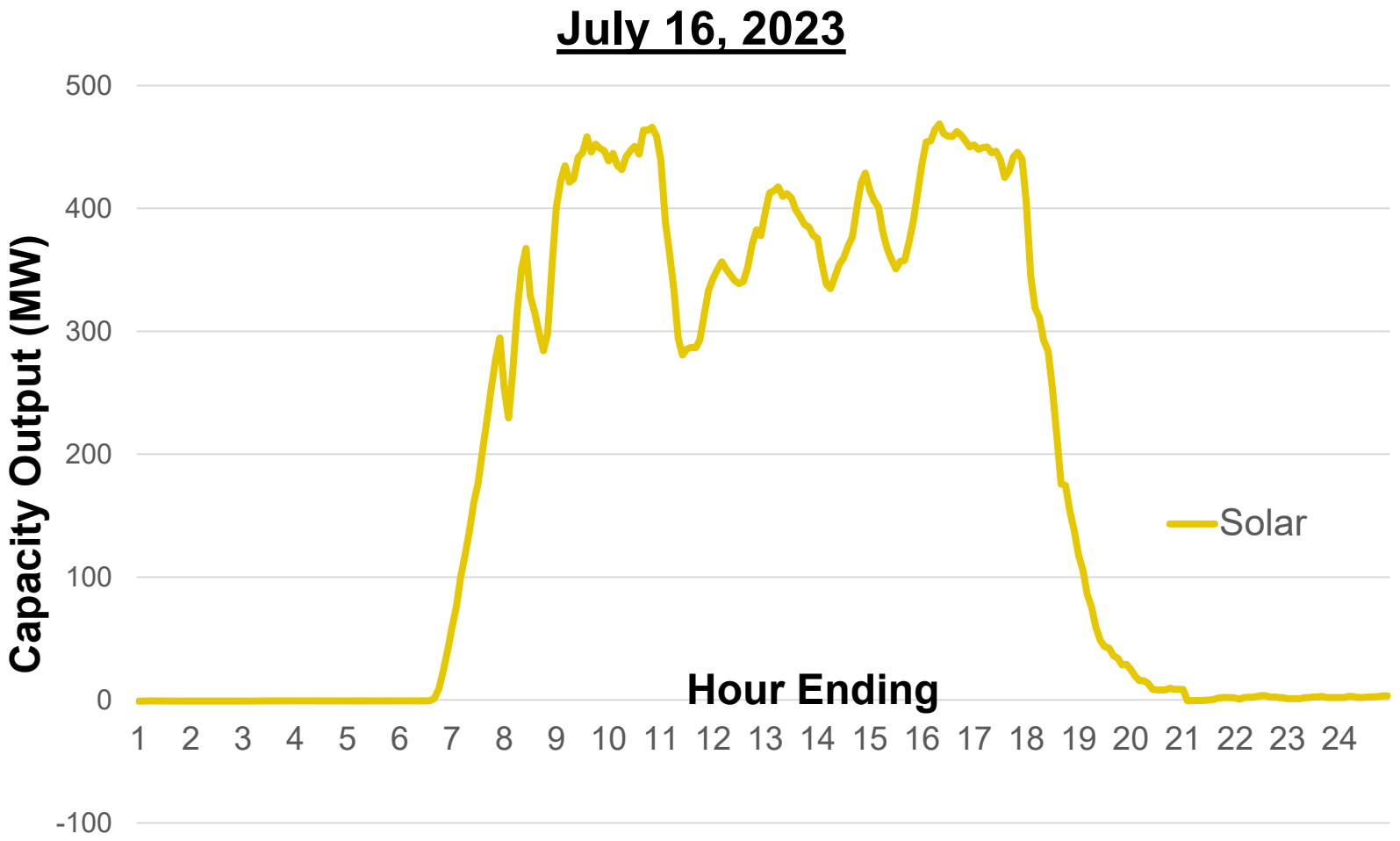


https://www.epri.com/research/products/000000003002027987

The daily operations of the grid are evolving dramatically and quickly. This change is driving reliability challenges to a few critical hours.

Intermittency Increase Variability

Generation and Load are volatile in real time.



Integrated System Plan: System Strategies

Energy Investments
Invest in renewable resources and storage manage fuel consumption, and drive carbo and water reductions.

Capacity Investments
Invest in firm generation, including natural gas, to support reliability and manage affordability, while also supporting advancement of emerging firm technologies

Proactive Transmission
Proactively plan to expand transmission infrastructure to enable generator interconnections and load growth.

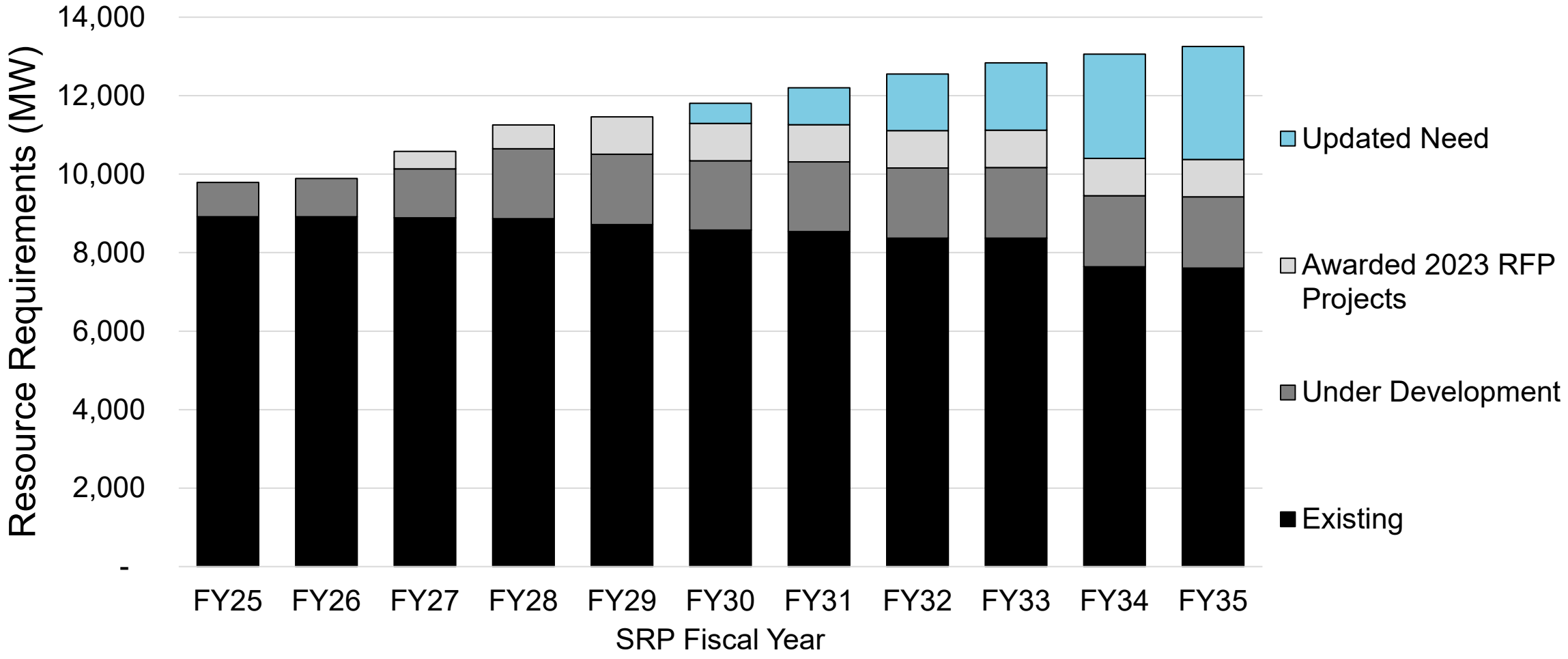
Distribution Innovation
Ensure distribution grid readiness to maintain reliability and enable customer innovations to drive carbon reductions.

Strategic Investment & Reinforcement of Existing Assets
Reinforce and maximize value of existing infrastructure with strategic investments to manage affordability, and ensure future performance, grid security and resilience.

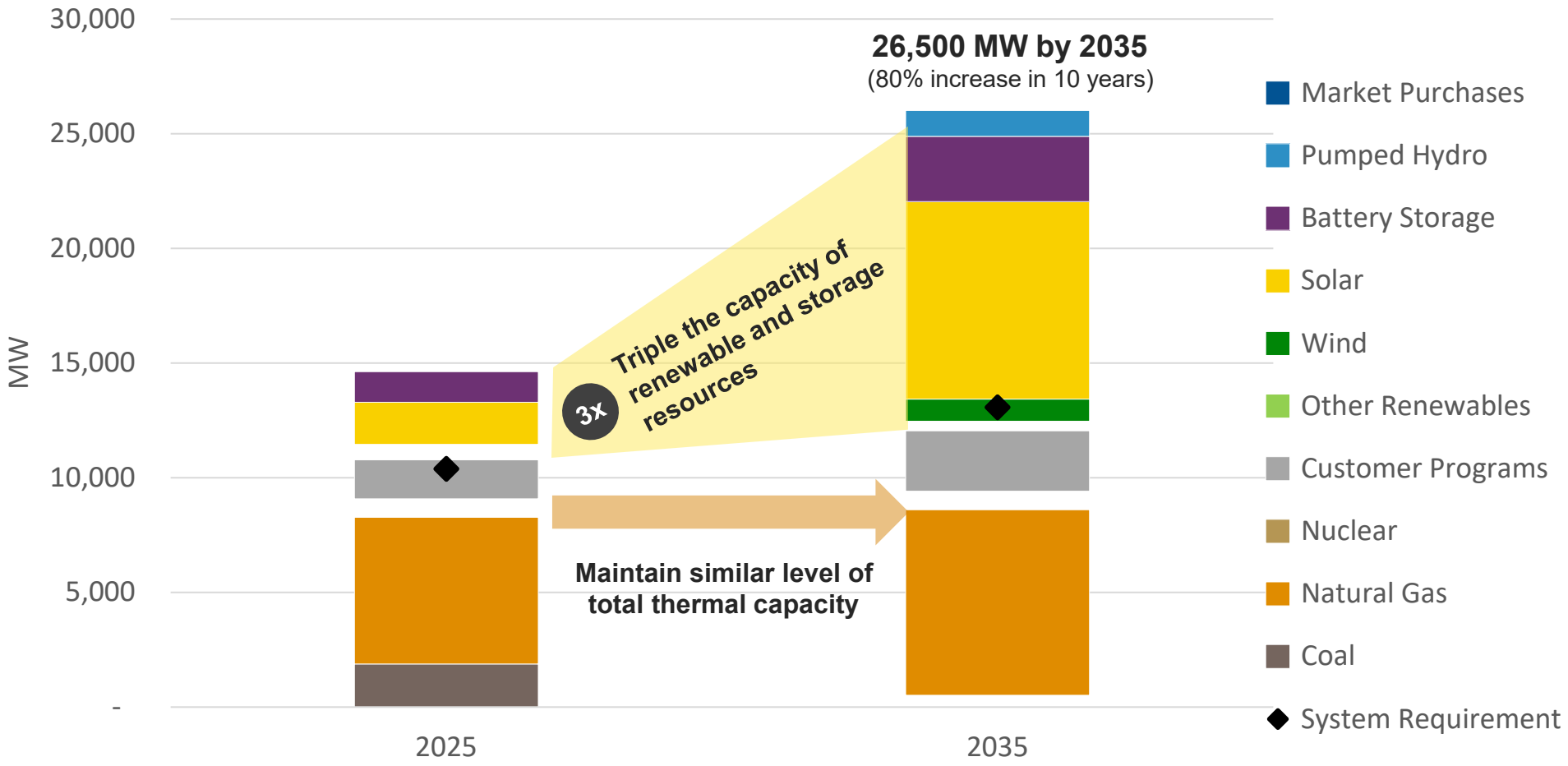
Evolution of Customer Programs & Pricing
Evolve pricing and customer programs to improve economy-wide carbon reductions and pace infrastructure development, while recognizing customers' diverse needs.

Partnerships & Suppliers
Explore partnerships, supply chain and development solutions that manage cost and availability to meet the pace of transformation.

Resource Needs to Serve Peak Demand

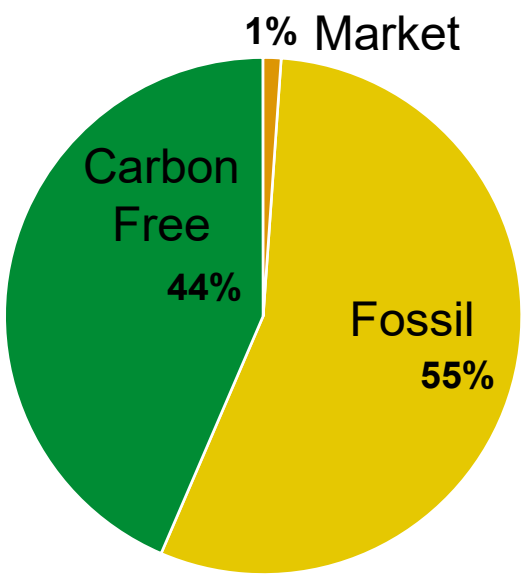


Integrated System Plan – Balanced System Plan

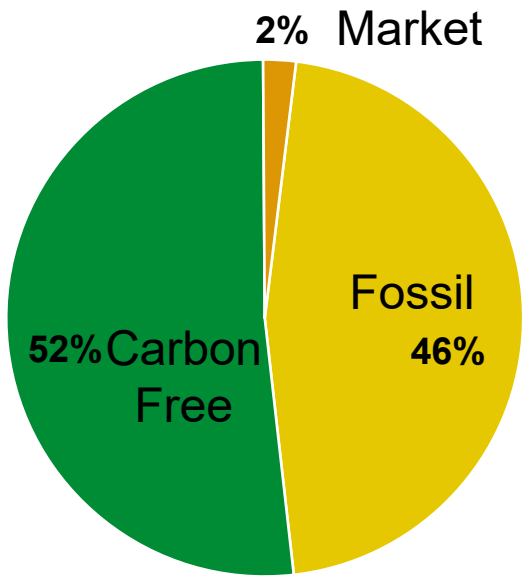


Transformational Change in SRP's Energy Generation Mix

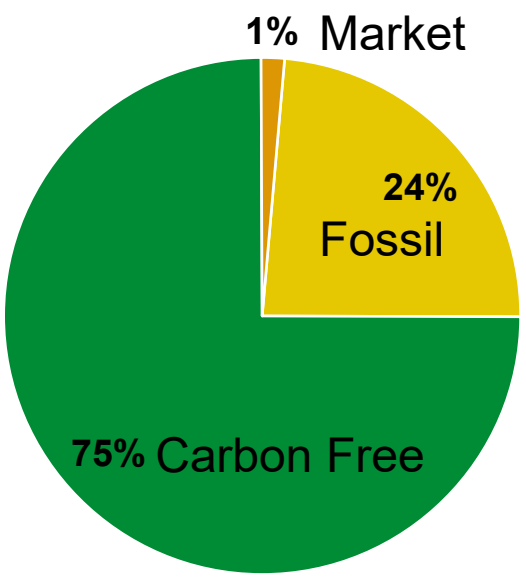
FY25



FY30



FY35



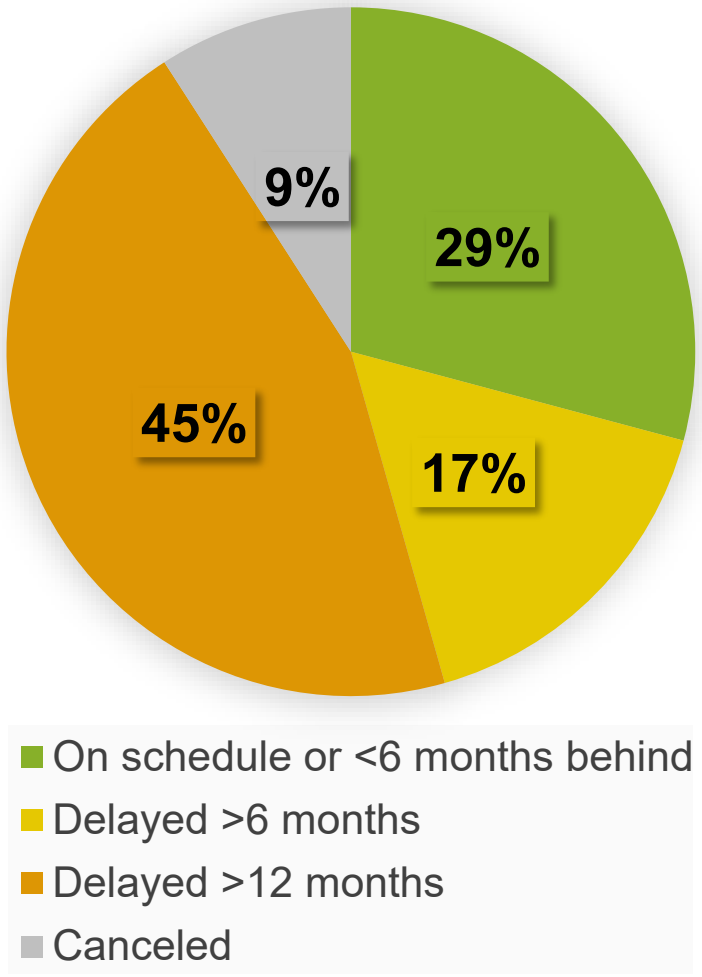
* Energy mix may change based on load growth and resource mix

thank you!

SRP also continues to experience delays

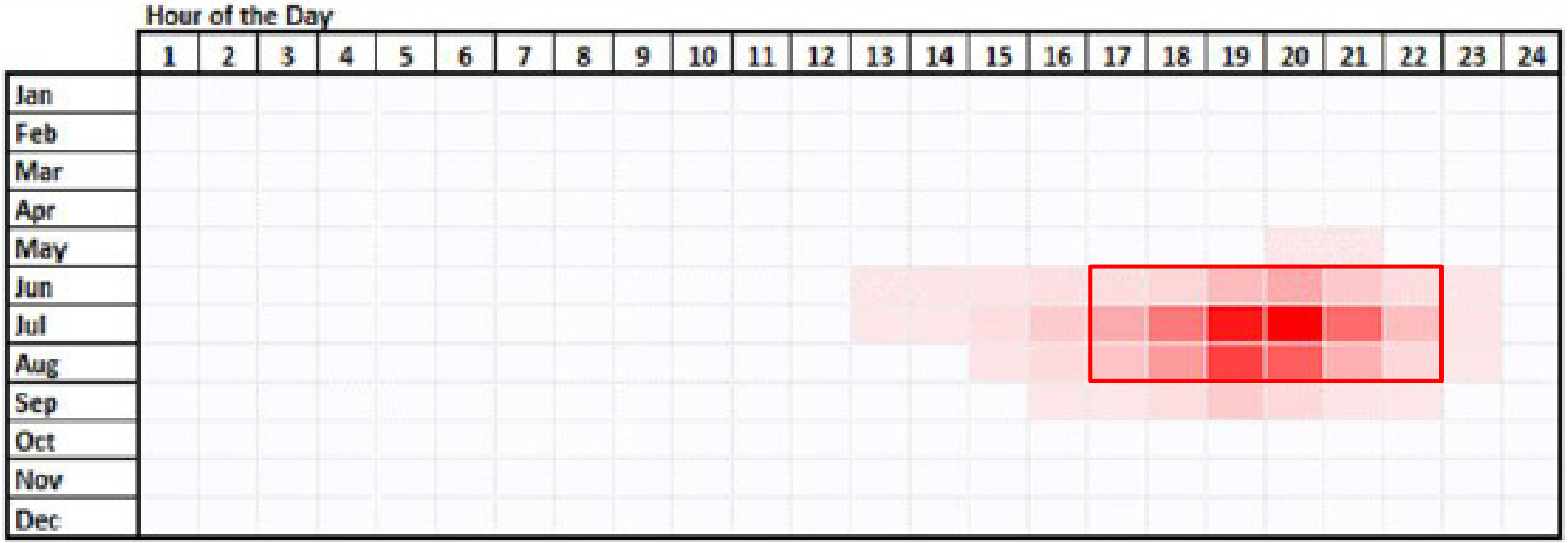
- SRP continues to experience delays with bringing new resources online
  - Ongoing supply chain constraints
  - Lengthy interconnection process
  - Permitting issues
  - Summer commissioning challenges
- SRP is working diligently with developers to minimize delays

Status of New Resources Under Contract and in Development



Resource Insufficiency Risk

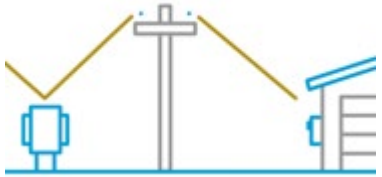
Figure 5-4. Relative periods of resource insufficiency by month and time of day, Existing and Committed resources in 2025[35]



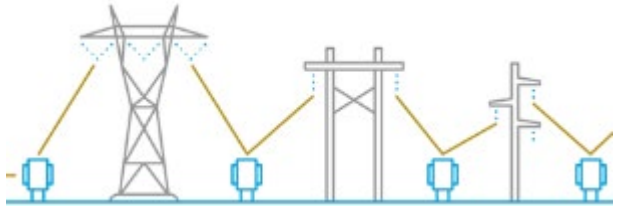
Traditional Utility Planning

Parallel Planning Processes

Customer Programs Design



Distribution Planning



Transmission Planning

Resource Planning

Integrated System Planning