California Energy Progress: SB 100 Looks Forward

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The Energy Commission is committed to promoting a **clean, affordable, and reliable** energy supply for **all Californians.**

Senate Bill 100

Officially titled “The 100 Percent Clean Energy Act of 2018,” Senate Bill 100 (SB 100, De León):

1. Sets a 2045 goal of powering all retail electricity sold in California and state agency electricity needs with renewable and zero-carbon resources.
2. Updates the state’s Renewables Portfolio Standard to ensure that by 2030 at least 60 percent of California’s electricity is renewable.
3. Requires the CEC, CPUC, and CARB to use programs under existing laws to achieve 100 percent clean electricity and issue a joint policy report on SB 100 by 2021 and every four years thereafter.

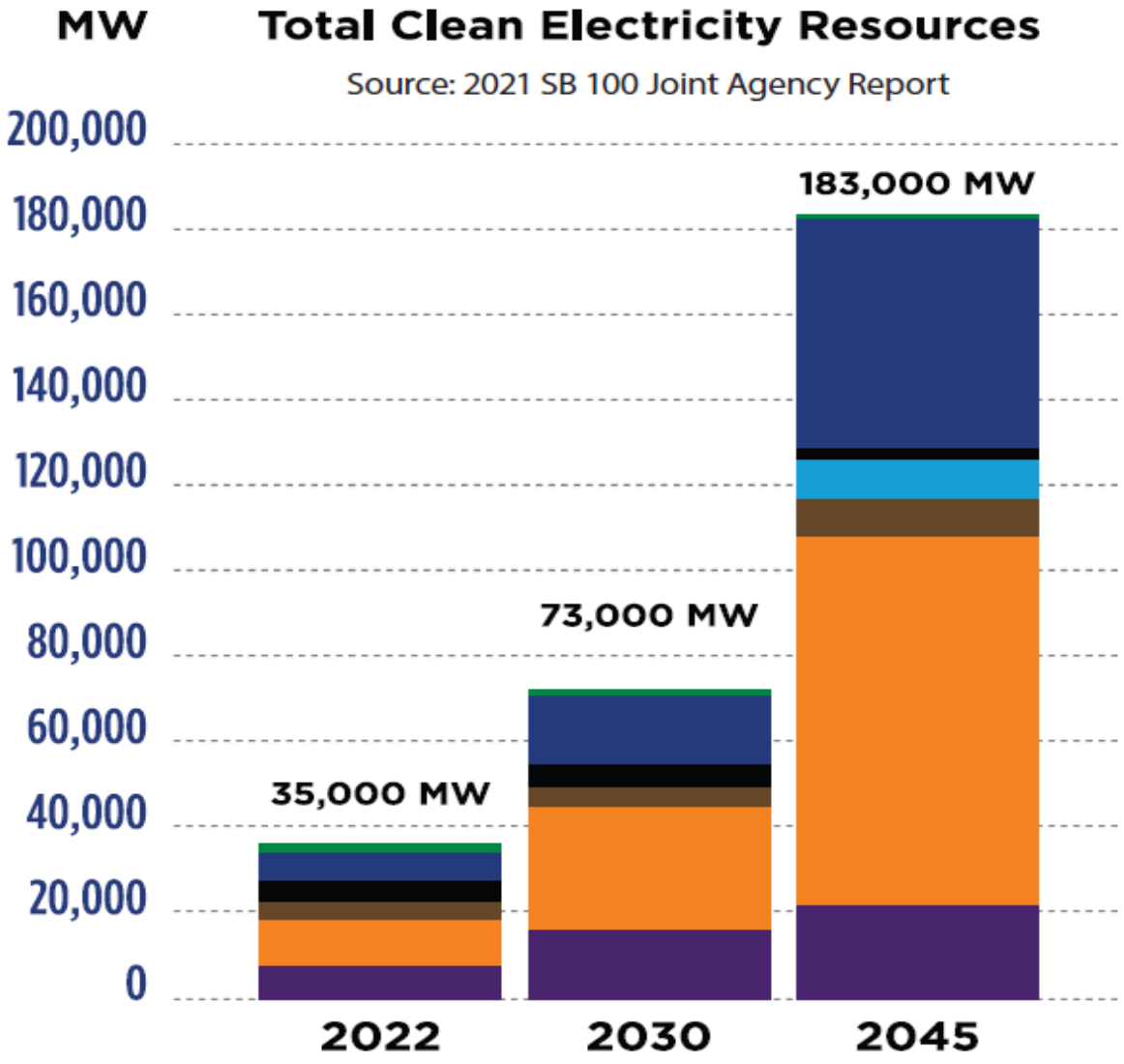
To provide 100% clean electricity by 2045,

California will build an unprecedented amount of new utility-scale clean energy resources

Totals represent new and existing resources. The 2021 SB 100 Joint Agency Report projects the need for 148,000 MW of new resources by 2045.

In addition, California also expects new capacity from energy efficiency, customer solar and demand response.

- Biomass
- Battery Storage
- Geothermal
- Offshore Wind
- Long Duration Energy Storage
- Utility-Scale Solar
- Wind



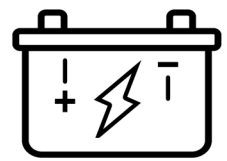
To Achieve Clean Energy

Development Needs To Rapidly Accelerate

Solar & Wind

3X

Solar and wind build rates need to nearly triple*



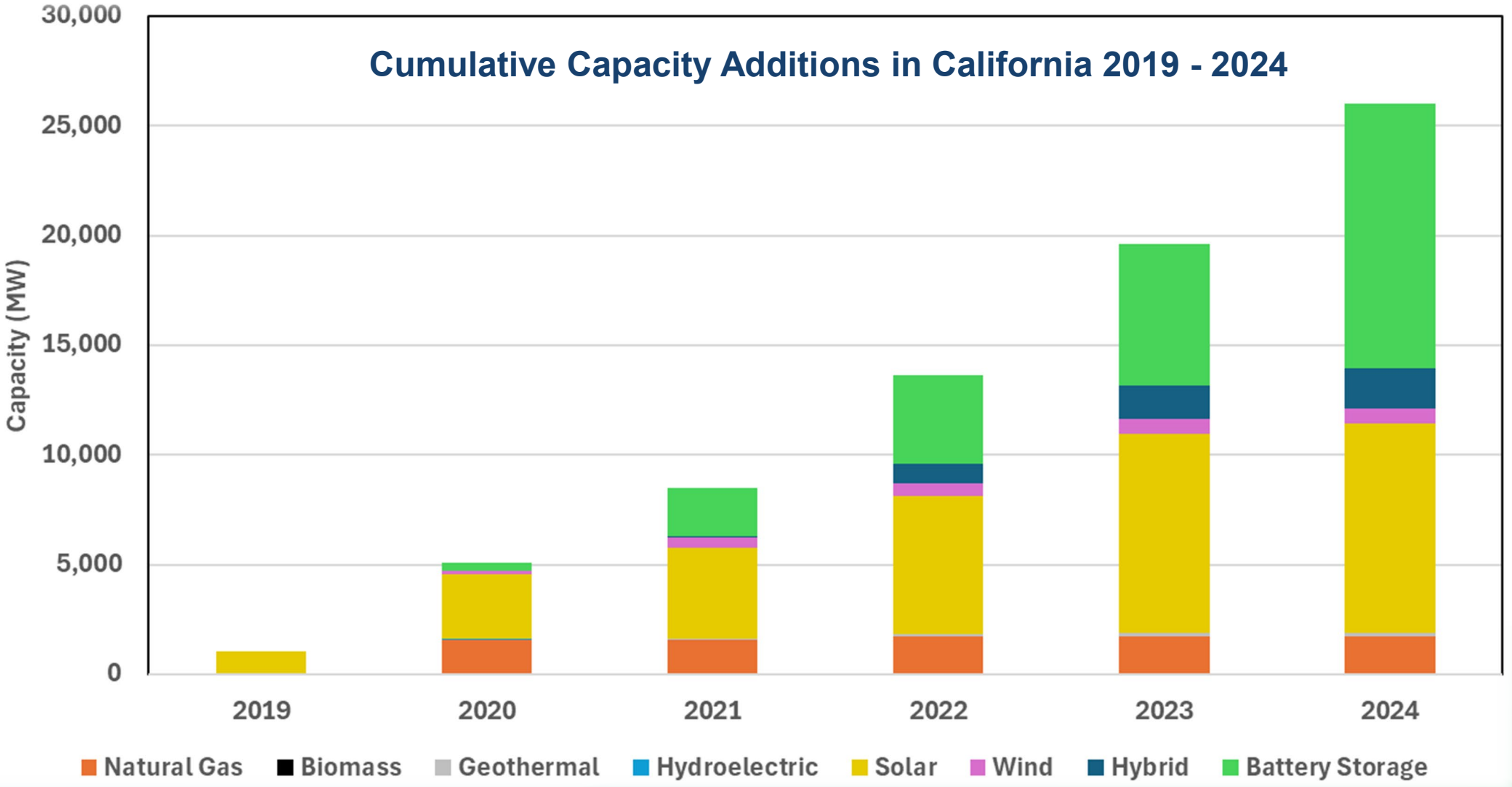
Battery

8X

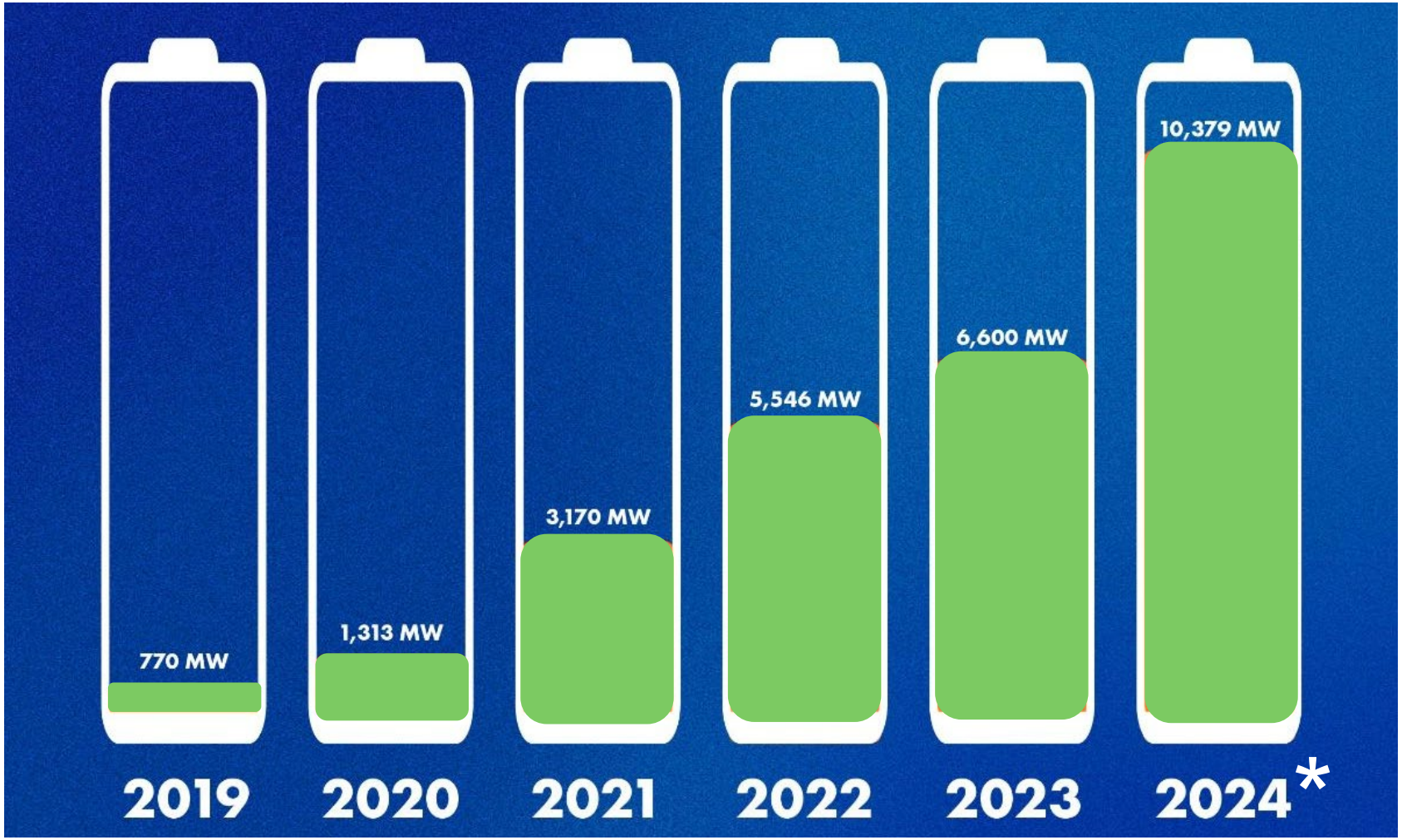
Battery storage build rates need to increase by nearly eightfold**

*Based on 10-year average | **Based on 2020

Over 26 GW New Resources Since 2019

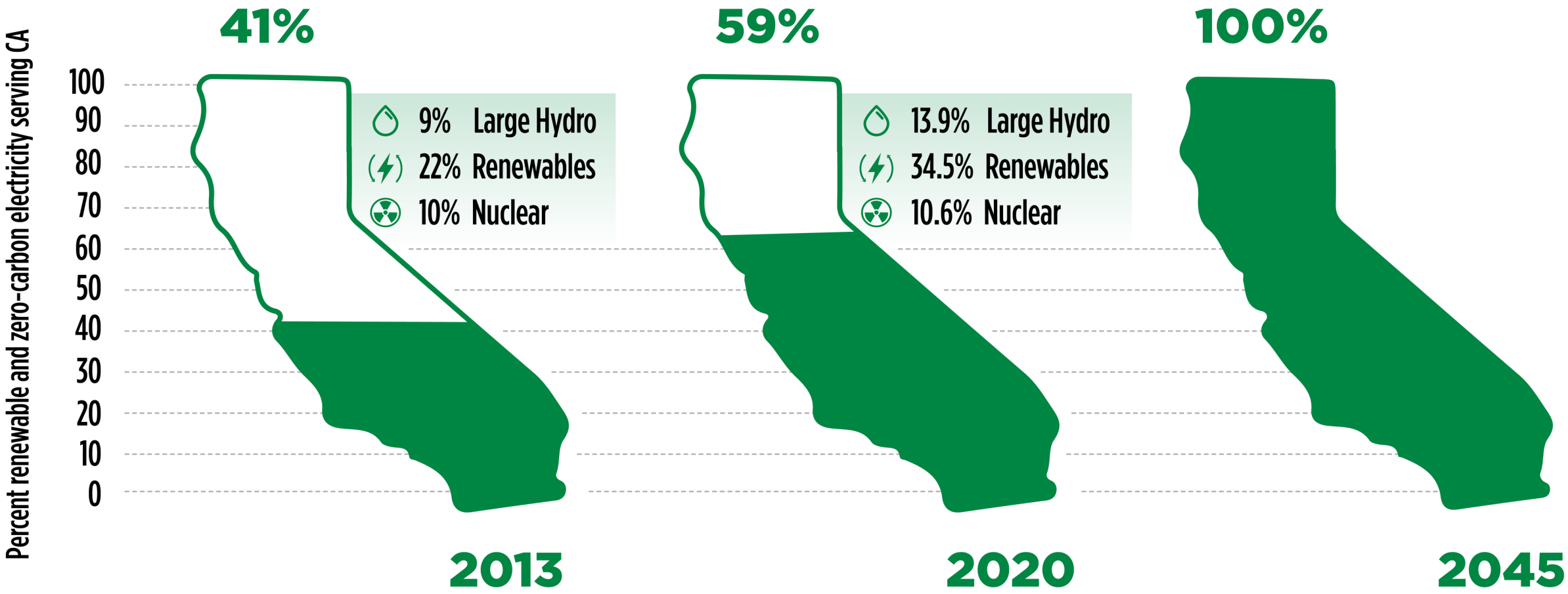


Over 10,000 MW of Energy Storage

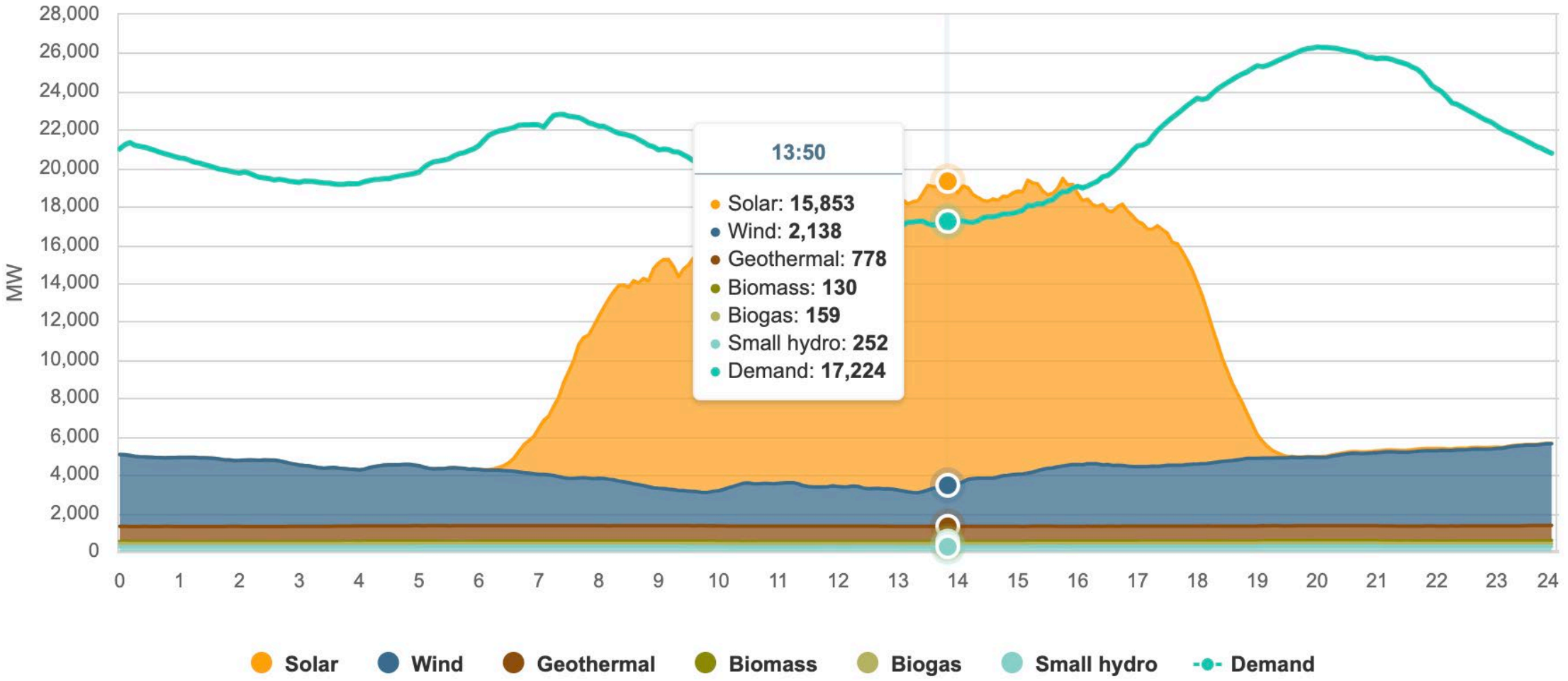


*As of May 2024

Progress to 100% Clean Electricity

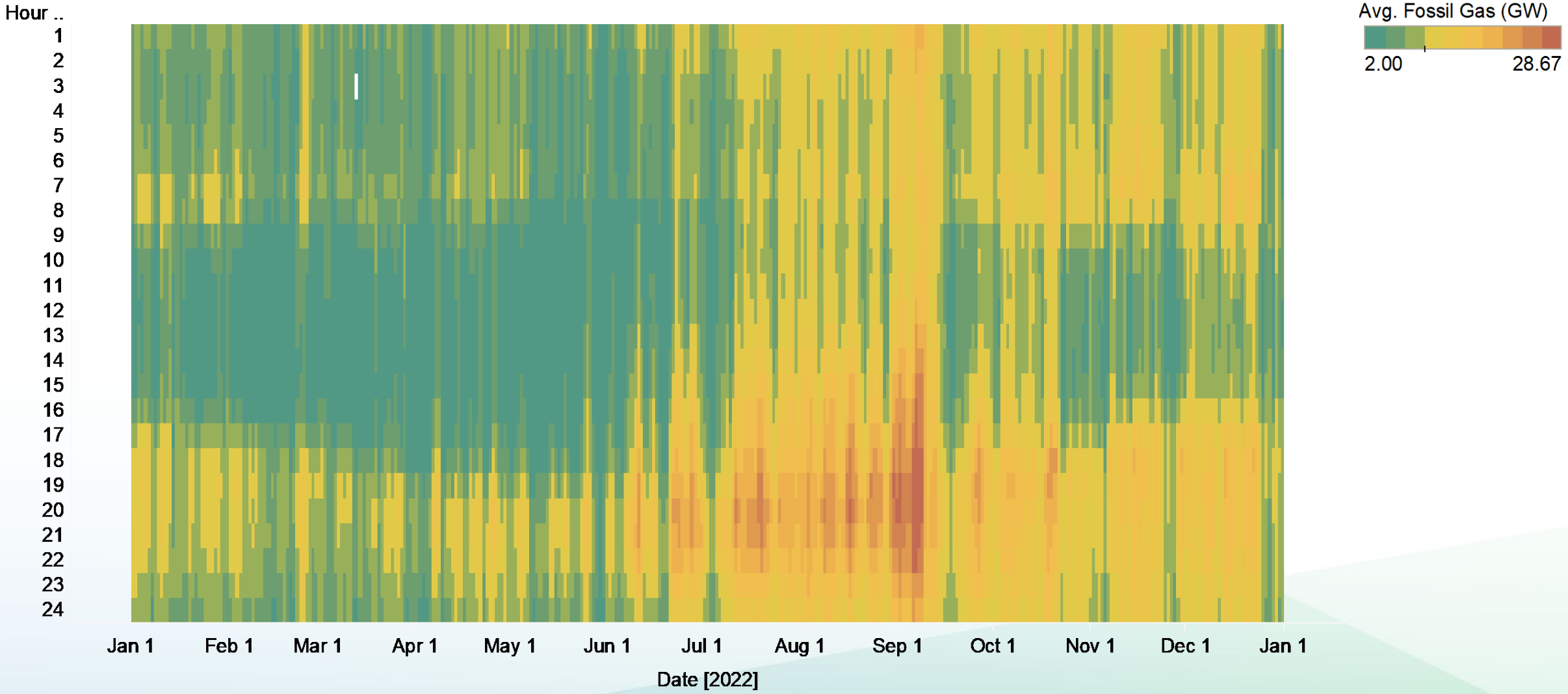


Over 1000 Hours 100% Clean Energy so Far in 2024



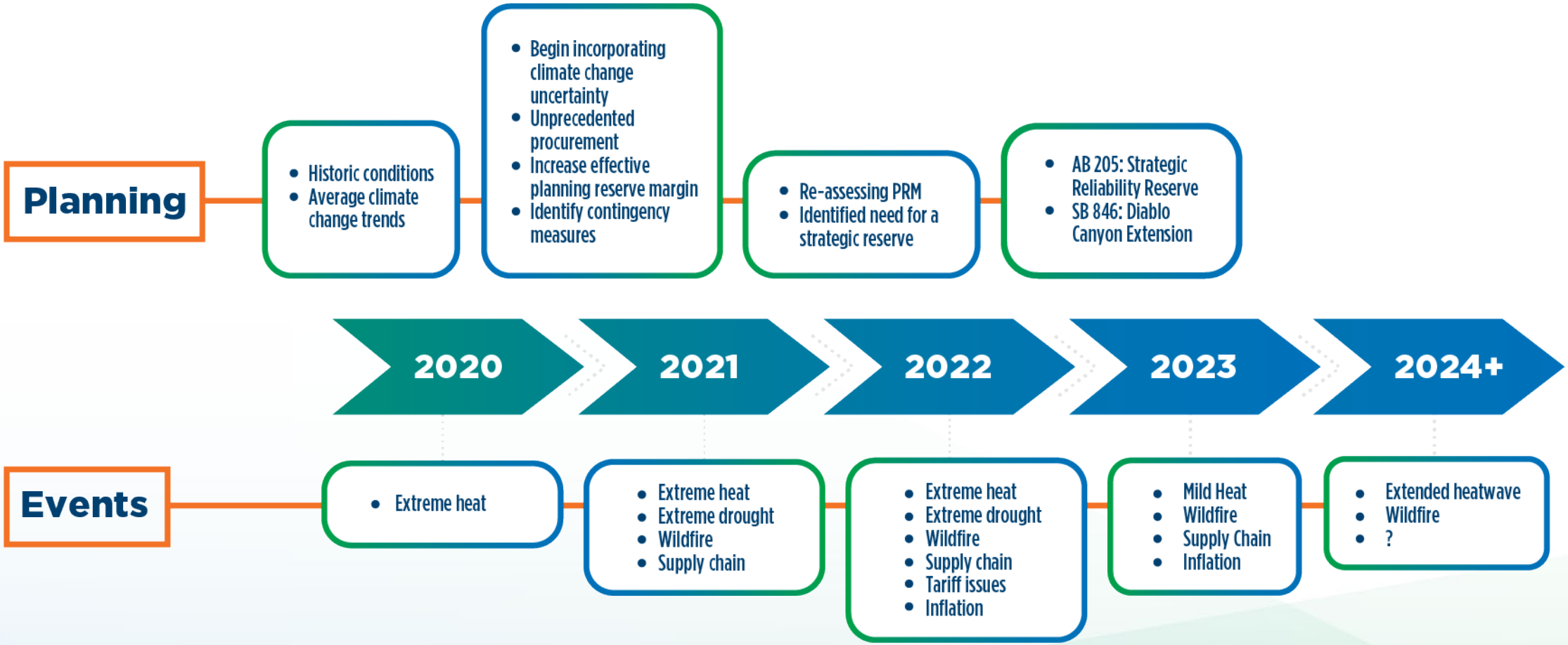
Source: CAISO

Gas Generation Remains Critical



Source: California ISO Generation & Curtailment, 2022

Changing Grid Conditions



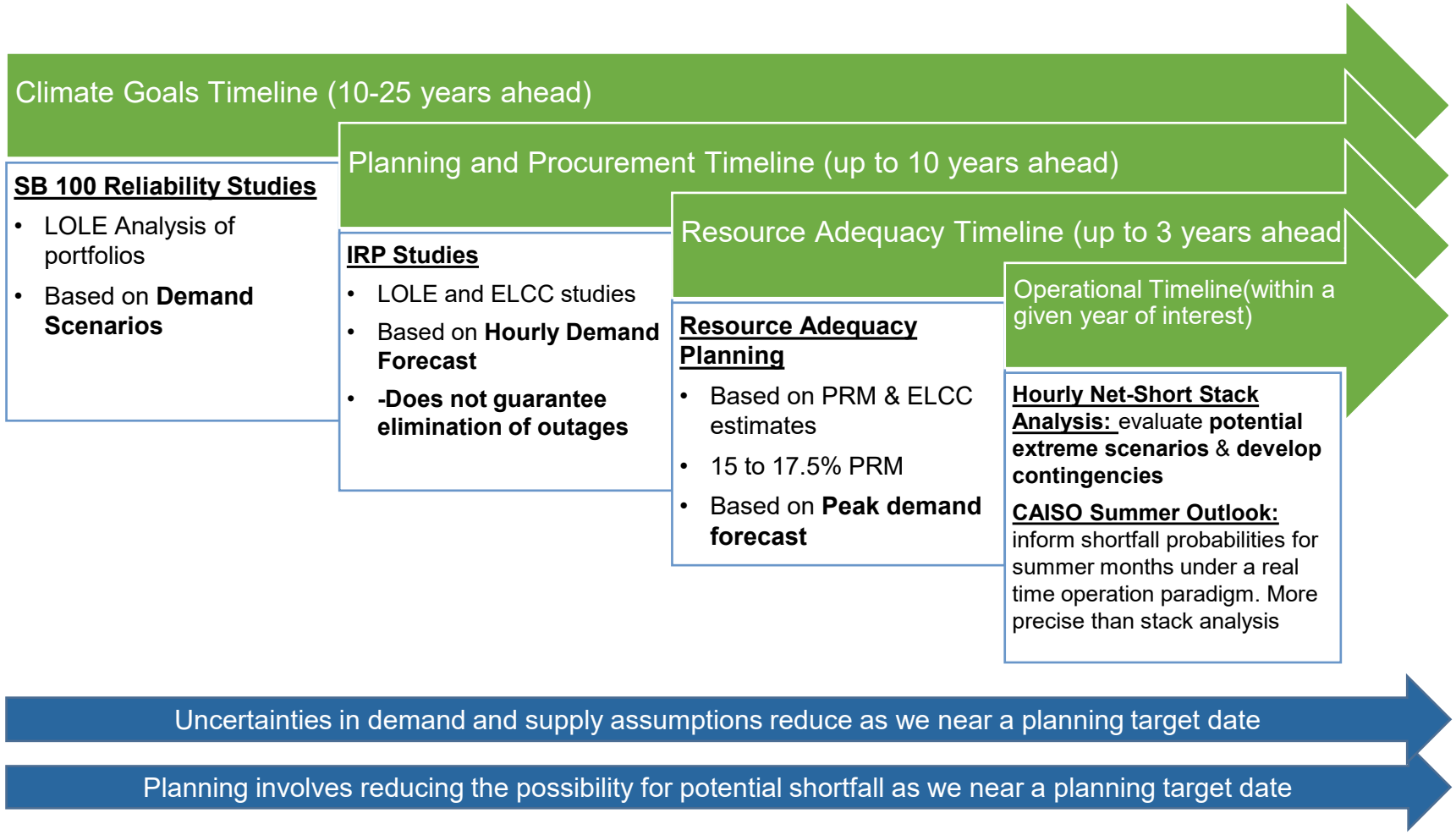
Actions to Address Grid Reliability

- **Improving Grid Planning Processes**
  - Improvements to forecasting for climate change-induced weather variability and electrification
  - Ordering sufficient and diverse energy resource procurement
  - Improvements to Resource Adequacy process and requirements

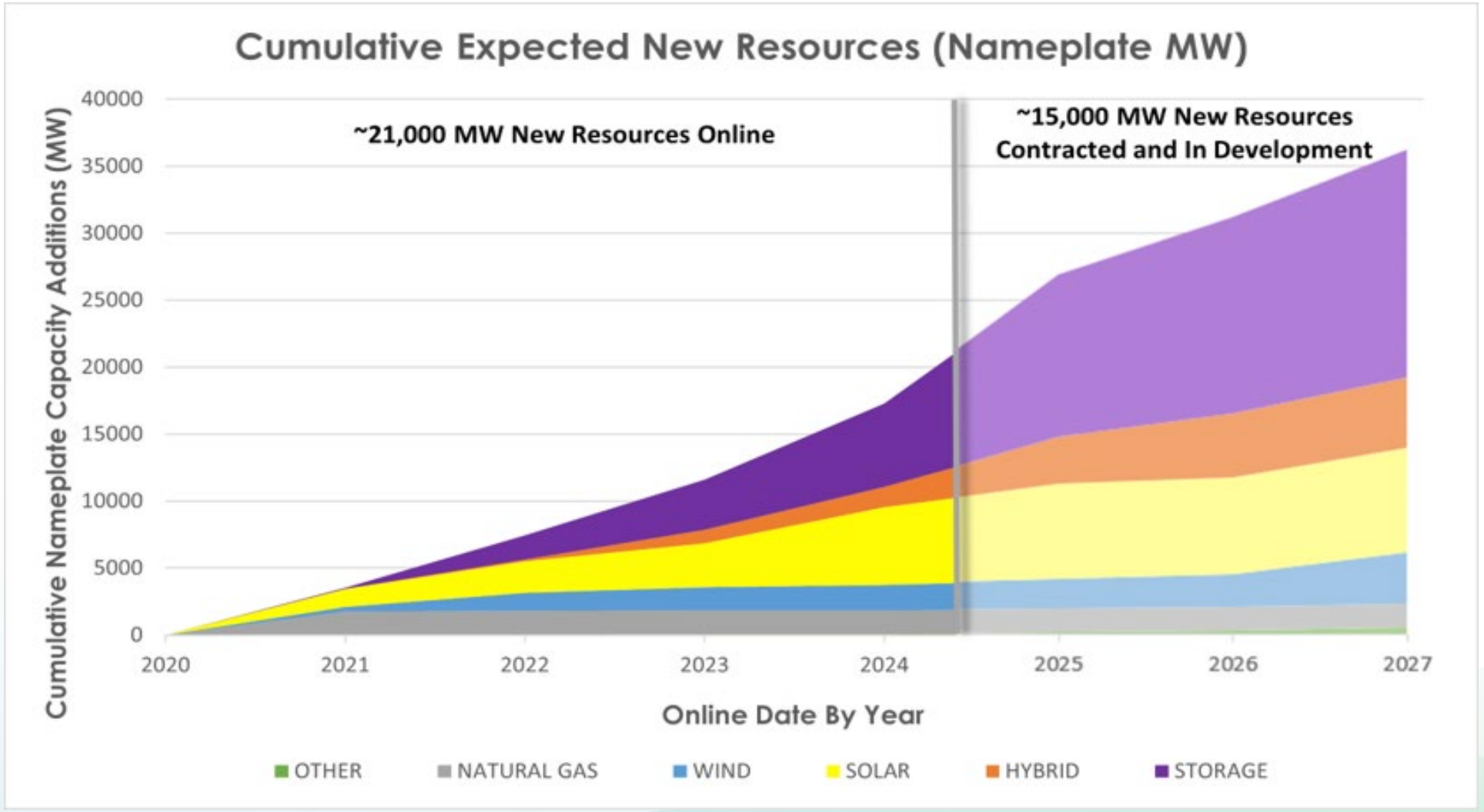
- **Scaling Supply & Demand-Side Clean Energy Resources**
  - Track procurement
  - Improve interconnection & permitting process
  - SB 846 (2022) requirements, including demand flexibility goal

- **Preparing for Extreme Events (Contingencies)**
  - Retain existing and construct new assets & procure energy imports to backstop uncertainties
  - Create emergency demand flexibility opportunities

Coordinated Planning



Expanding Procurement



Source: CPUC Data 2024

Developing Pathway for Offshore Wind

Current Successes

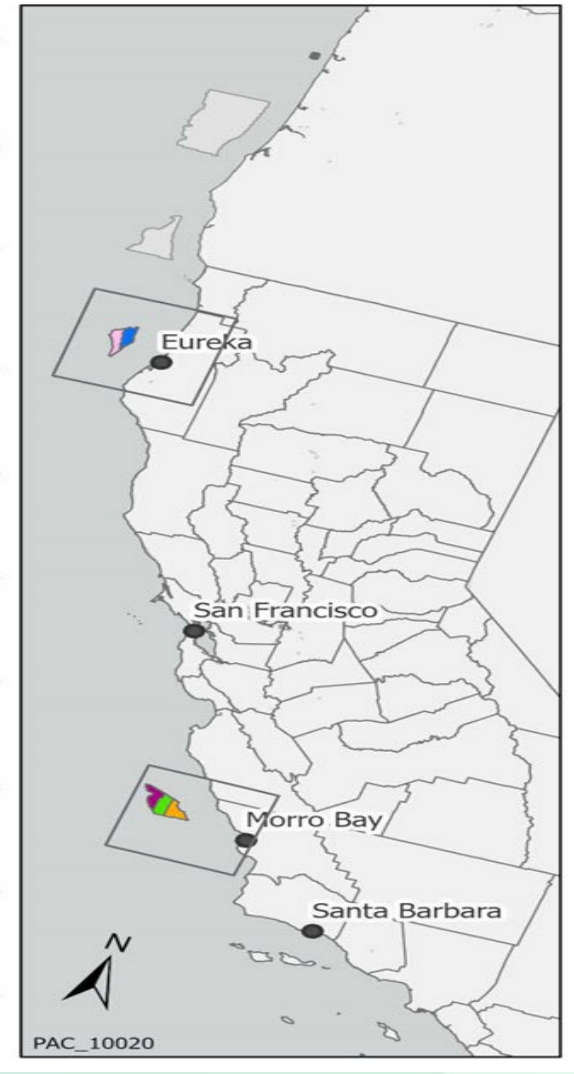
- $757 million raised in 2021 lease sale auction
- Ports of Humboldt and Long Beach committed to serving industry
- CEC Adopts AB 525 Offshore Wind Energy Strategic Plan

Sending Market Signals

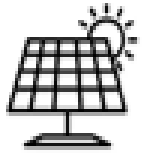
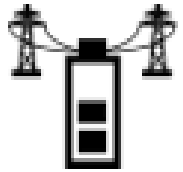
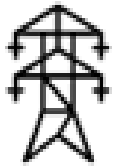
- CPUC Decision on Centralized Procurement
- CAISO 23-24 Transmission Plan & 20-Year Transmission Outlook
- Additional public funding for preparing ports

Ongoing Activities

- Coordinated Interagency Permitting Process
- Supply chain for major components
- BOEM initiated Programmatic Environmental Review

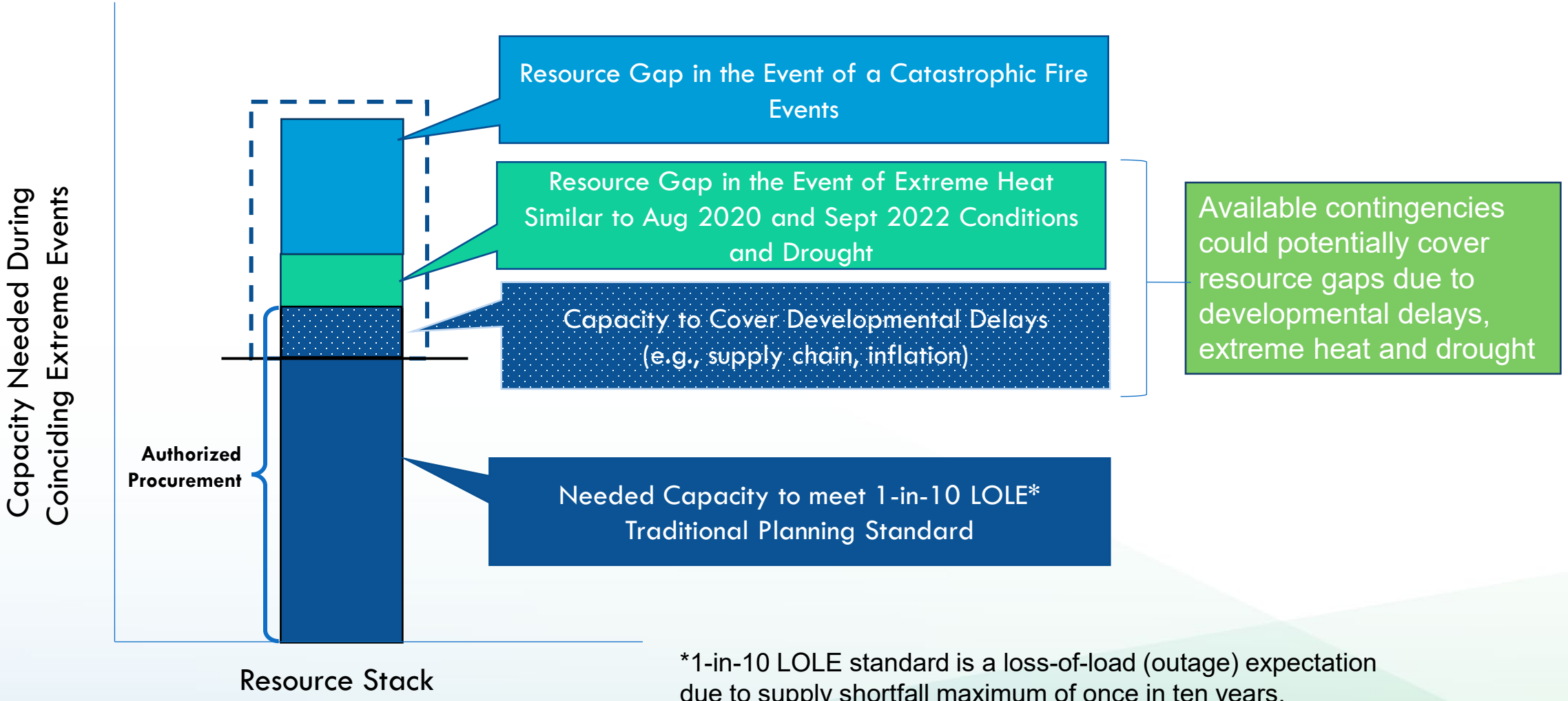


Opt-in Permitting

Solar photovoltaic power plant of at least 50 MW 	Terrestrial wind power plant of at least 50 MW 	Energy storage system of at least 200 MWh 
Non-fossil-fueled thermal power plant of at least 50 MW (i.e., jurisdictional facility) 	Manufacturing/assembly facility for renewable energy/energy storage systems or components with at least $250 million investment 	Transmission from an eligible power plant or energy storage system to the first point of interconnection 

Opt-In Certification Program (https://www.energy.ca.gov/programs-and-topics/topics/power-plants/opt-certification-program)

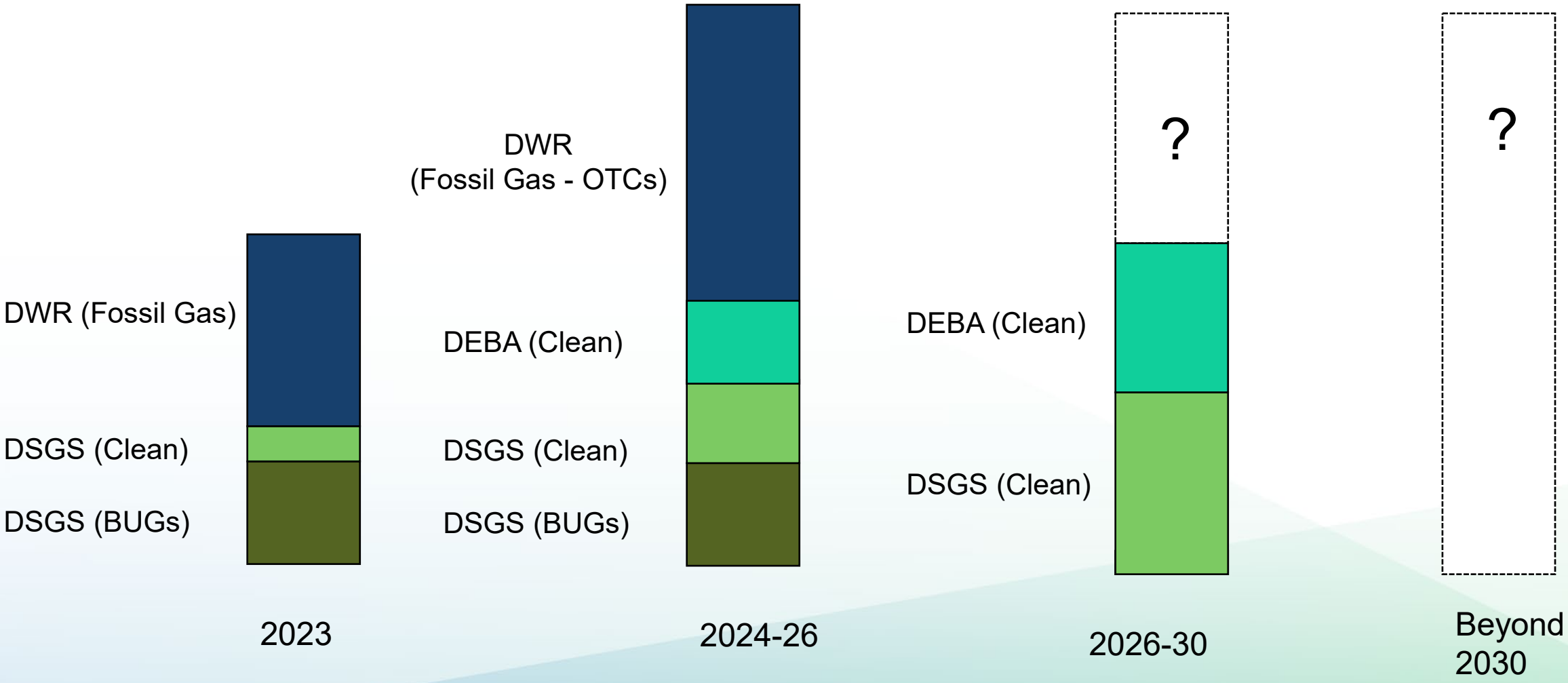
Continuing Need for Contingencies



*1-in-10 LOLE standard is a loss-of-load (outage) expectation due to supply shortfall maximum of once in ten years.

Strategies to Address Headwinds

DSGS / DEBA help transition SRR to clean contingency resources – away from dependency on OTCs



2025 SB 100 Report

2025 SB 100 Report

- **Report on current statewide efforts** toward clean electricity progress and **identify opportunities** to enhance state efforts.

- **Study alternate scenarios** to understand the impact of uncertainty in cost, technology innovation, and project development on achieving SB 100.

SB 100 Scenarios

Reference	Existing resource plans replace the base resource, including the CPUC's Preferred System Plan through 2039, and POU Resource Plans.
Base	Least cost model based on current demand scenario and resource cost projections. Existing Resource Plans through 2030.
Minimum Compliance	Base scenario without constraints on GHG emissions. This scenario is focused on SB 100 compliance only.
DER Focus	Higher levels of distributed energy resources, including BTM and FTM generation and storage resources, and demand flexibility.
Resource Diversification	Procurement and technology advancements for a variety of existing and emerging resources able to be used for SB 100 compliance.
Geographic Diversification	Expanded regional transmission allowing for greater energy exchanges between California and the rest of the WECC.
Combustion Resource Retirement	Transition from combustion power plants to only non-combustion power plants.

Non-energy Impacts

- Quantitative or Qualitative Analysis
  - Land Use Impacts
  - Public Health and Air Quality
  - Water Supply and Quality
  - Economic Impacts
  - Resilience

Thank You!