

**DOCKETED**

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<b>Project Title:</b>	Accelerating Distribution Grid Connection
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<b>Document Title:</b>	Presentation - Bulk Grid Interconnection Workshop Overview
<b>Description:</b>	1 David Erne, CEC
<b>Filer:</b>	Raquel Kravitz
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# Introduction & Context



David Erne, Deputy Director, Energy Assessments Division



# Bulk Grid Interconnection Workshop Overview

- Foundational Role of Transmission and Timely Interconnection for Achieving Climate Targets
- Interconnection and Ongoing Improvements
  - CAISO and Utility perspectives
  - Developer Perspectives
  - Recommendations for Improvements





# Three Reliability Challenges in California

- **Planning Processes**

- Improve ability to account for climate change-induced weather variability
- Ensure timely and sufficient procurement across all jurisdictions
- Improve processes associated with interconnection and permitting

- **Scaling Resources**

- Expand diversity of resources
  - Demand-side (e.g., more demand flexibility)
  - Supply-side (e.g., long-lead resources)

- **Extreme Events**

- Augment Strategic Reliability Reserve



# Challenges Remain to Timely Deployment of Authorized Resources

- Success requires record resource build rates, which are impacted by:
  - Supply chain vulnerabilities
  - Interconnection and permitting delays
  - Increasing prices and competition for equipment
- Uncertainties in availability of existing resources
  - Hydro
  - West-wide tight RA market

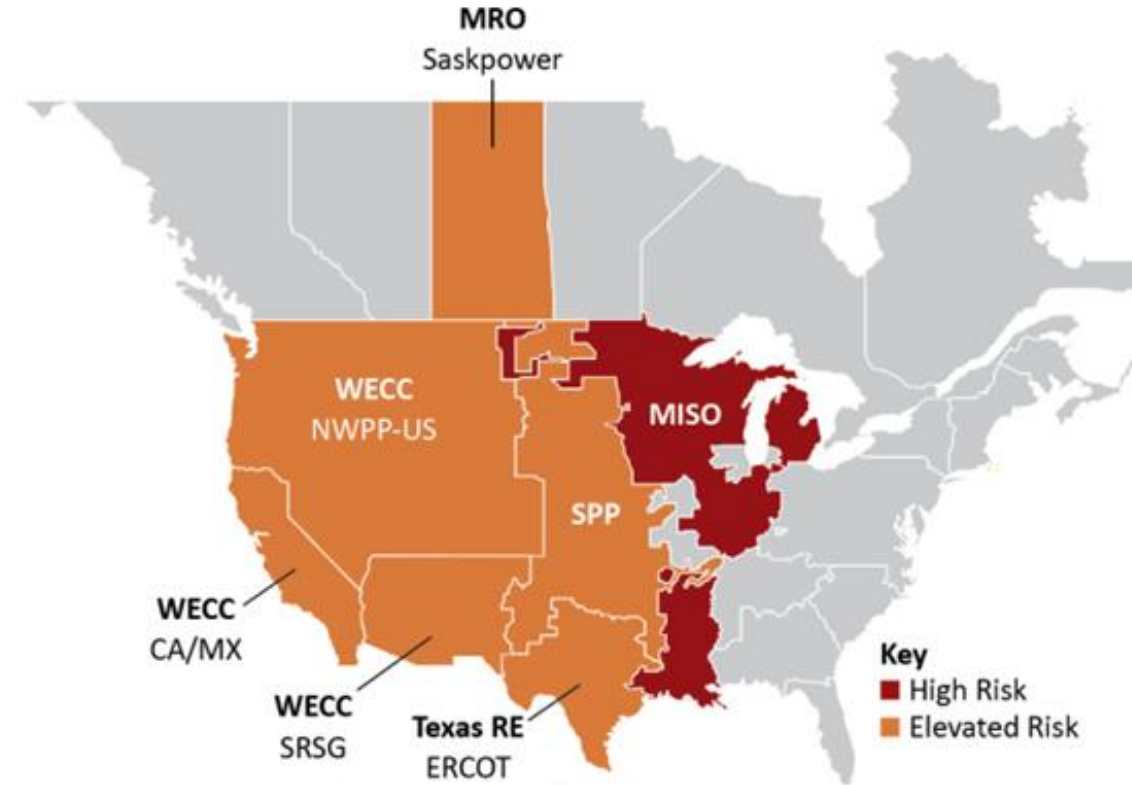


Figure 1: Summer Reliability Risk Area Summary

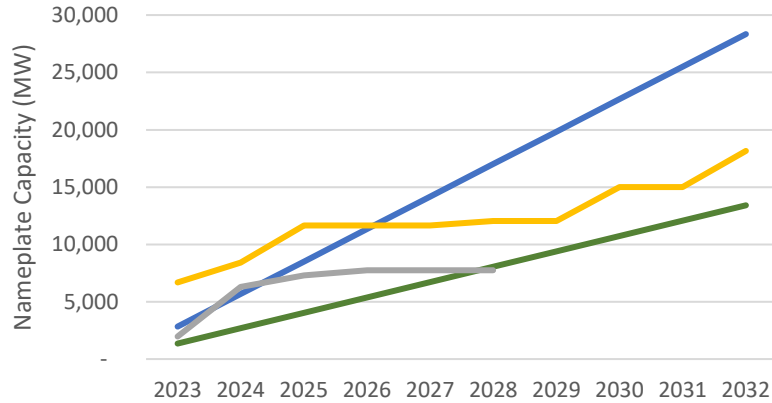
Seasonal Risk Assessment Summary	
High	Potential for insufficient operating reserves in normal peak conditions
Elevated	Potential for insufficient operating reserves in above-normal conditions
Low	Sufficient operating reserves expected

Source: NERC 2022 Summer Reliability Assessment

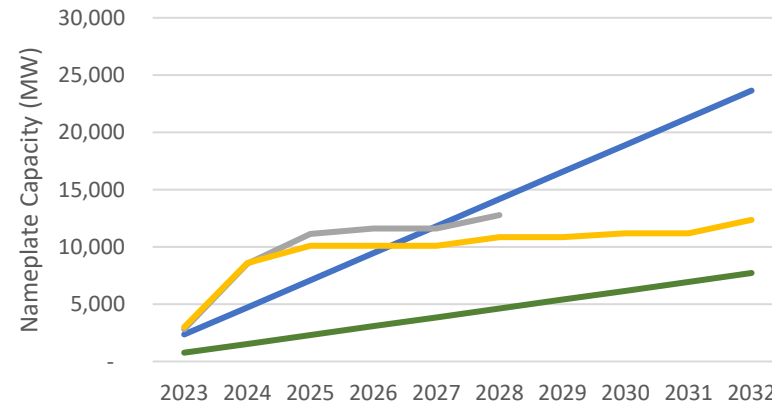


# Success Requires Sustained Record Build Rates (cont.)

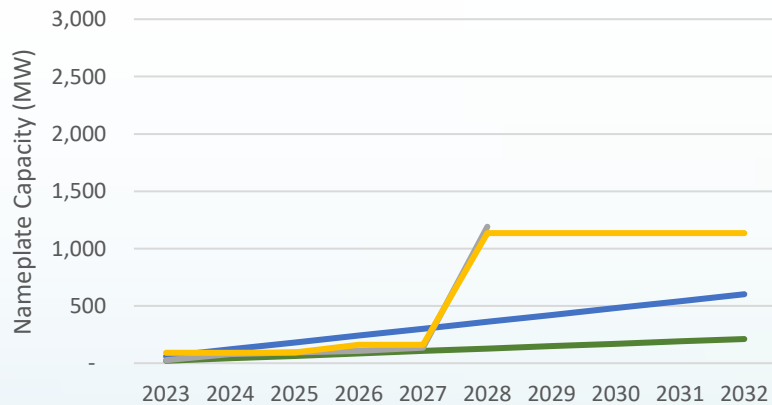
Solar Build Rates



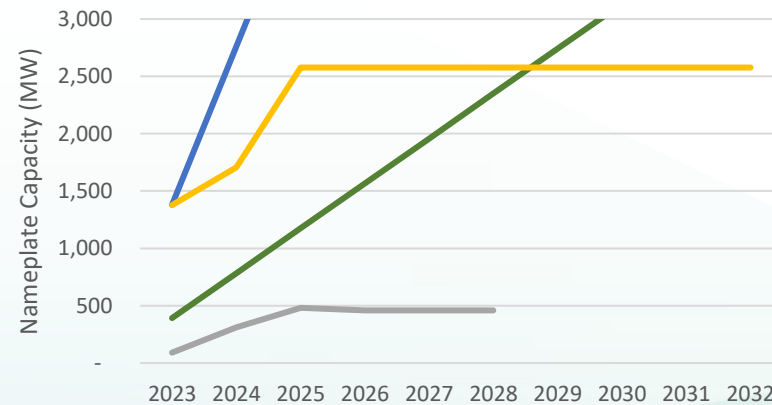
Battery Build Rates



Geothermal Build Rates



Wind Build Rates



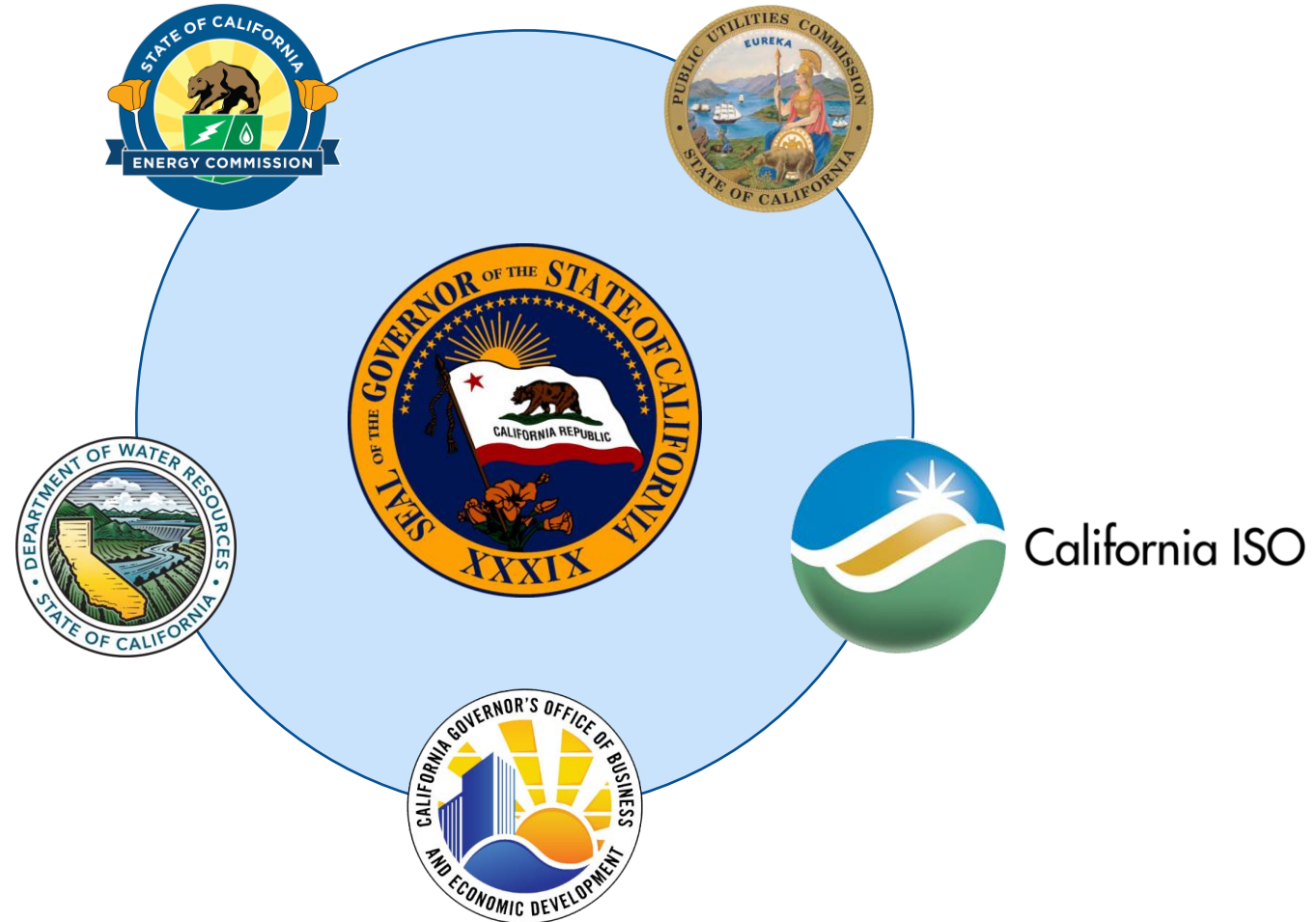
- CAISO Maximum Since 2011
- CAISO Average Since 2011
- CPUC Procurement Order
- CPUC Preferred System Plan

- CAISO maximum and average build rates since 2011 by technology type
- Average build rates are generally insufficient
- Maximum build insufficient in the near term



# Actions Taken – Expanded Summer Planning

- Coordinated activities
  - Reliability analyses
  - Resource tracking
  - Contingency tracking
  - Entity-specific emergency actions tied to CAISO System Operations Emergency Plan
  - Real-time communication at senior levels





# Actions Taken – Legislative Drivers

## Assembly Bill 205

- Strategic Reliability Reserve Fund
  - Distributed Electricity Assets Program
  - Demand Side Grid Support Program
  - Certification of DWR SRR Facilities
- Opt-In Permitting
- Long-Duration Energy Storage
- Summer 2022 Reliability Report

## Assembly Bill 209

- Planning Reserve Margin
- Climate Innovation Program
- Clean Energy Programs
- Offshore Wind Infrastructure

## Senate Bill 846

- Reliability Planning Assessment
- Clean Energy Reliability Investment Plan (CERIP)
- Determination on the Need for Extension of Diablo Canyon
- Report on Diablo Canyon Operations
- Load Shift Goal and Policies
- Cost Comparison of Diablo Canyon
- Reevaluating Cost Effectiveness of Diablo Canyon

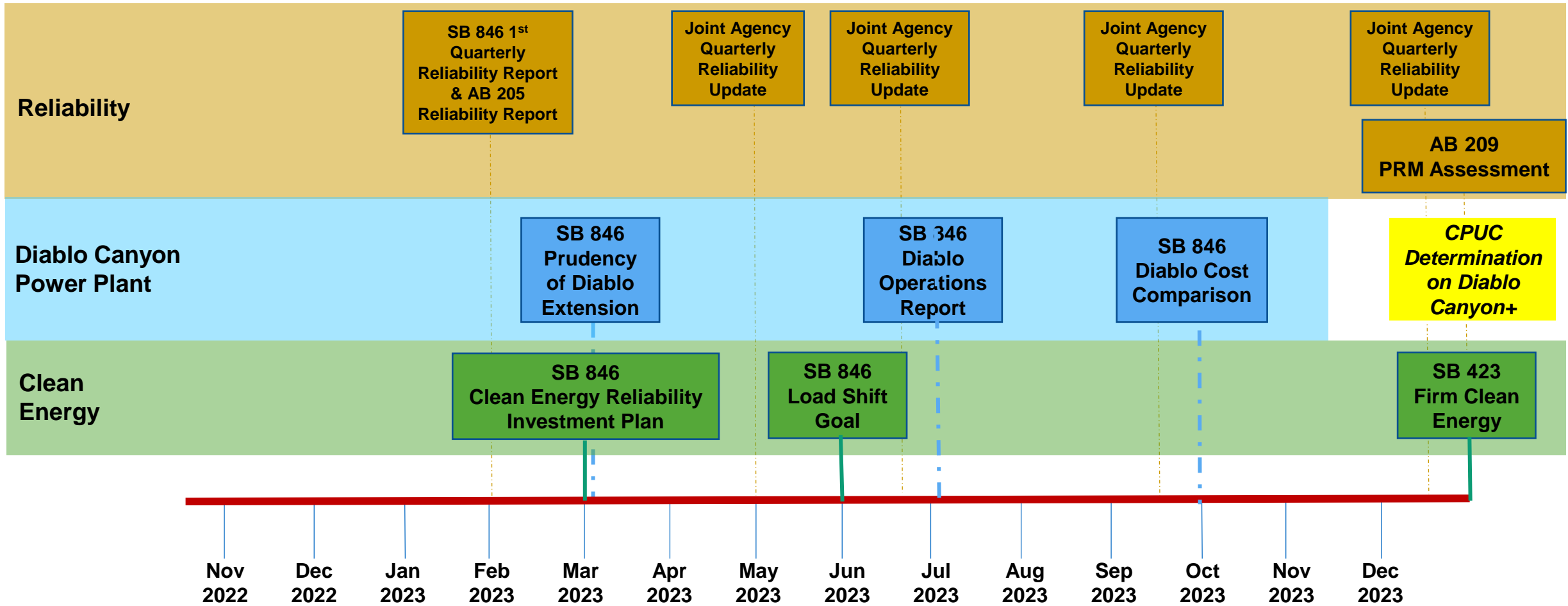
## Senate Bill 423

- Report on Firm, Zero-carbon Resources





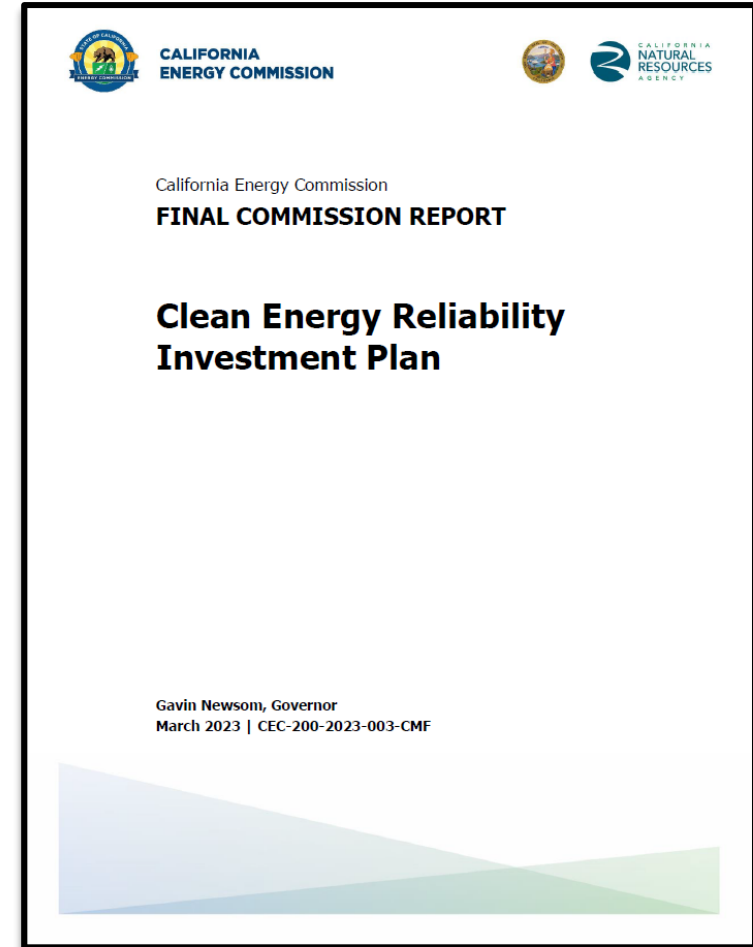
# Key Milestones from Legislation





# Future Potential – Clean Energy Reliability Investment Plan

- Funding Priorities
  - Enabling Investments
  - Scaling Demand-side Resources
  - Scaling Supply-side Resources
  - Augmenting for Extreme Events





# Proposed Funding by Priority

Priority	Proposed Funding			
	23/24	24/25	25/26	Total
Enabling Investments	\$57	\$5	\$5	\$67
Scaling Demand-side Resources	\$0	\$175	\$270	\$445
Scaling Supply-side Resources	\$0	\$150	\$150	\$300
Augmenting for Extreme Events	\$33	\$50	\$50	\$133
Administration	\$10	\$20	\$25	\$55M
<b>Total</b>	<b>\$100</b>	<b>\$400</b>	<b>\$500</b>	<b>\$1,000M</b>



# May 17 Summer Reliability Workshop Overview

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- Anticipated Summer Situation
- Summer Reliability Assessments
- Strategic Reliability Reserve
- Supply Chain Panel

