

DOCKETED	
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DACAG Summer Reliability Update

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Date: 07/19/2024



Summer Conditions

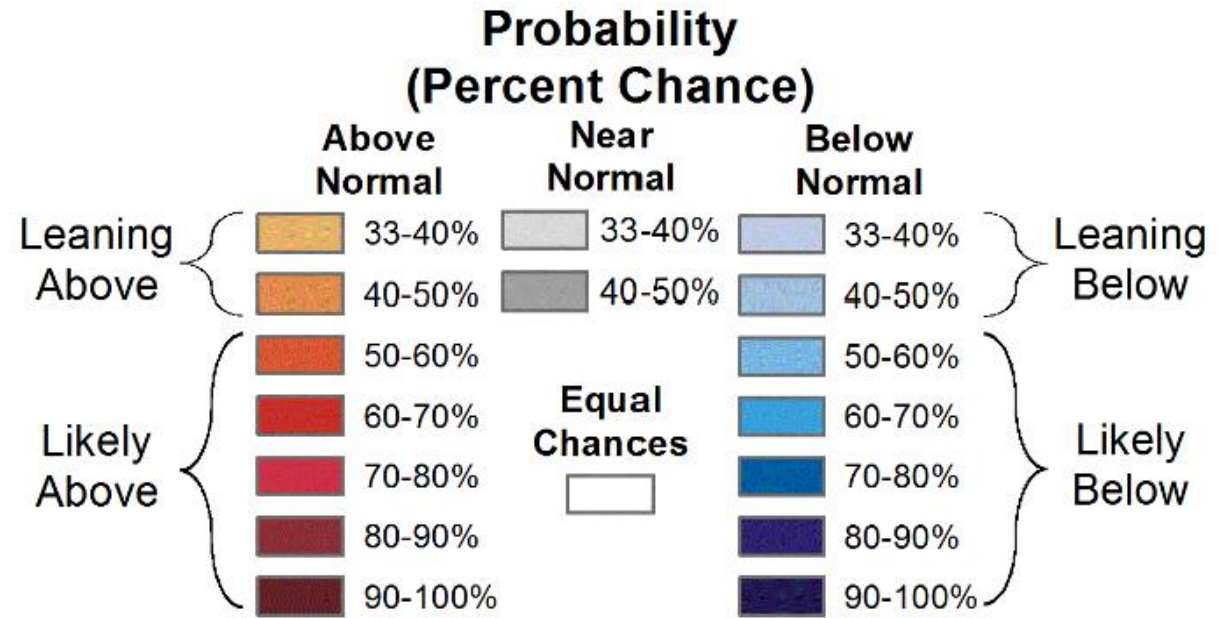
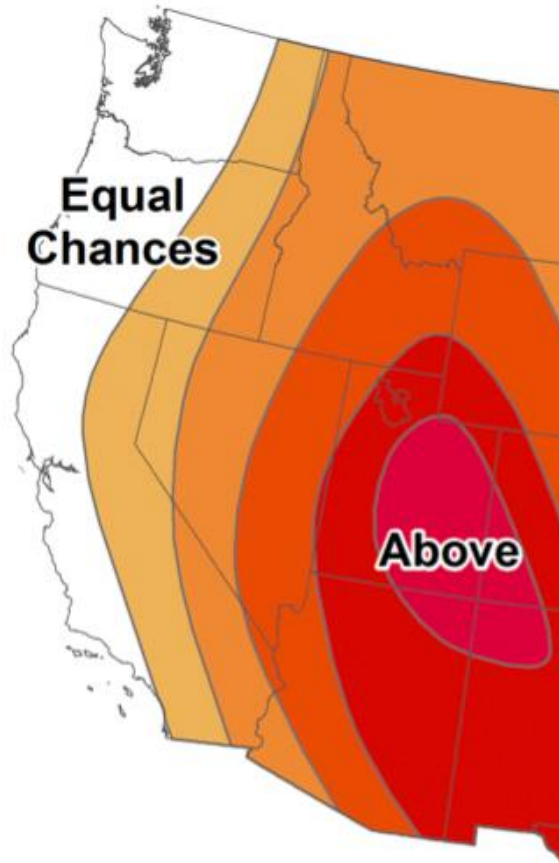


Critical Variables

- Temperature Outlook
- Wildfire Outlook
- Hydro Conditions
- Expected New Resources
- Western Interconnection Outlook

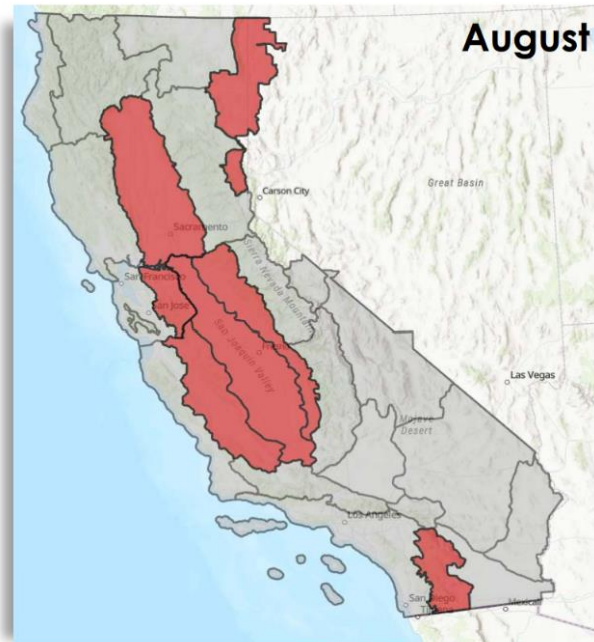


July-Sept Seasonal Temperature Outlook





July-Oct Fire Risk





CA Hydro Outlook

- DWR April Snowpack: 110% of normal
- “Near normal” water year
- Higher water years = higher hydroelectric *and* higher pumping loads



Cumulative Anticipated New Resources in 2024

Resources (MW)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Battery Storage	10	315	645	1,185	1,745	2,119	2,576	3,118	3,913	4,239	4,382	5,142
Geothermal	0	0	0	0	0	0	0	0	13	13	13	13
Hydro	0	0	0	0	6	6	6	6	6	6	6	6
Natural Gas	0	0	0	48	48	48	103	108	108	108	108	108
Other	0	1	1	1	3	6	6	6	11	11	11	11
Solar PV	54	334	1,074	1,347	1,643	1,982	2,318	2,645	2,645	2,645	2,845	4,473
Wind	0	230	230	260	260	287	287	311	311	391	391	472
Actual Installed	127	357	1,206	1,713	-	-	-	-	-	-	-	-

Source: California ISO New Resource Interconnection



Summer Stack Analysis





Demand Percent Margins

Condition Relative to 1-in-2 Forecast	Operating Reserves	Outages	Demand Variability	Coincidental Fire Risk	Notes
Average Conditions: Current RA Planning Standard – 17%	6%	5%	6%	4,000 MW	17% beginning 2024
2020 Equivalent Event: Additional capacity needed to weather heat event like 2020	6%	7.5%	9%	4,000 MW	9% higher demand over median, and 2.5% higher levels of outages
2022 Equivalent Event: Additional capacity needed to weather heat event like 2022	6%	7.5%	12.5%	4,000 MW	12.5% higher demand over median, and 2.5% higher levels of outages

Source: CEC



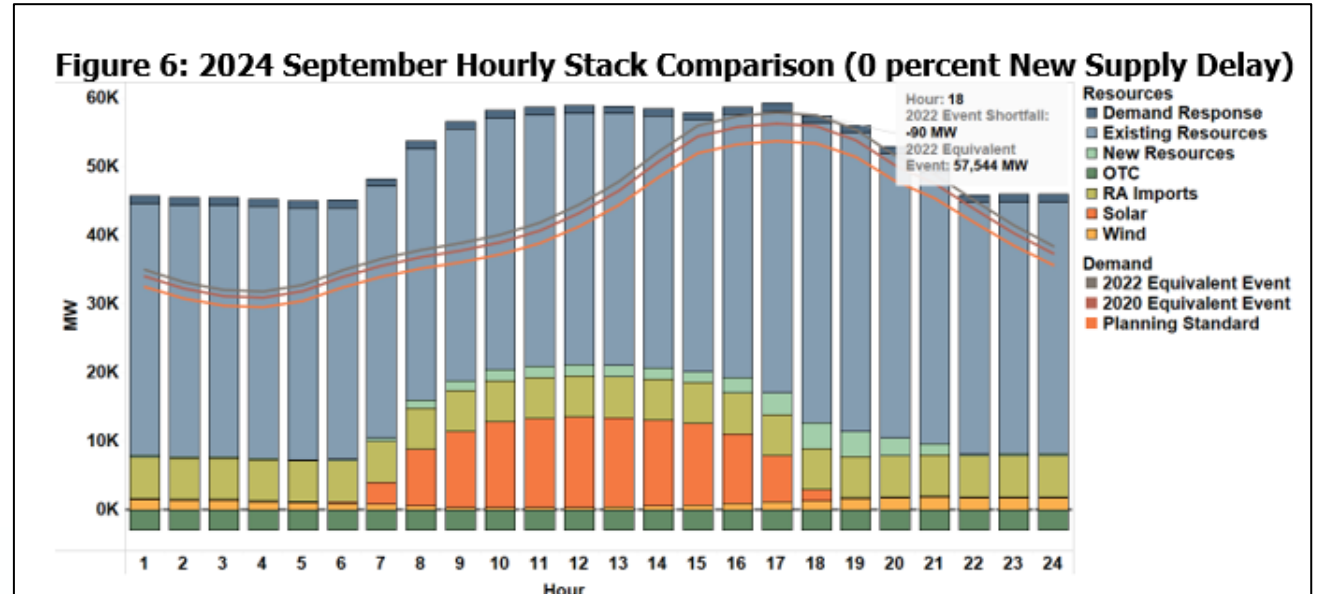
Stack Analysis

New Resource Delay Sensitivity

- Apply 20 and 40 percent capacity delay to future expected resources
- Assess the risk of resource build out delays
- Determine if contingency resources may be needed

Varying System Conditions

- Contingency needs identified in 2022 equivalent event
- Optimistic outlook under average conditions
- Coincident fire risk not included in the results but could lead to an additional 4,000 MW need for contingencies



Condition Relative to 1-in-2 Forecast	New Supply Delay Sensitivity (%)	Megawatts (MW)		
		July	August	September
2022 Equivalent Event	40	2,330	3,235	-1,593
	20	2,790	3,715	-842
	0	3,251	4,195	-90
2020 Equivalent Event	40	3,933	4,794	5
	20	4,394	5,275	757
	0	4,854	5,755	1,508
Average Conditions	40	6,453	7,245	2,517
	20	6,914	7,725	3,269
	0	7,374	8,205	4,020



Comparison to Past Analyses

September Forecast	Summer 2022	Summer 2023	Summer 2024	Changes Between Summers 23 & 24
	May 2022 Analysis	Aug 2023 Report	Jan 2024 Report	Jan 2024 & Aug 2023 Reports
Demand				
Total Demand	46,319 MW	47,327 MW	45,972 MW	-1355 MW
Resources				
Total Resources	53,080 MW	55,533 MW	56,439 MW	+906 MW
Potential Surplus/Shortfall Before Contingencies Are Need (Resources – Demand)				
Standard Planning Event	40 MW	2100 MW	4020 MW	+1920 MW
2020 Extreme Event	-3,000 MW	-400 MW	+1500 MW	+1900 MW
2022 Extreme Event	-7,000 MW	-2,000 MW	-90 MW	+1910 MW

* Does not include the risk of coincident wildfire impacting generation and/or electricity imports into California

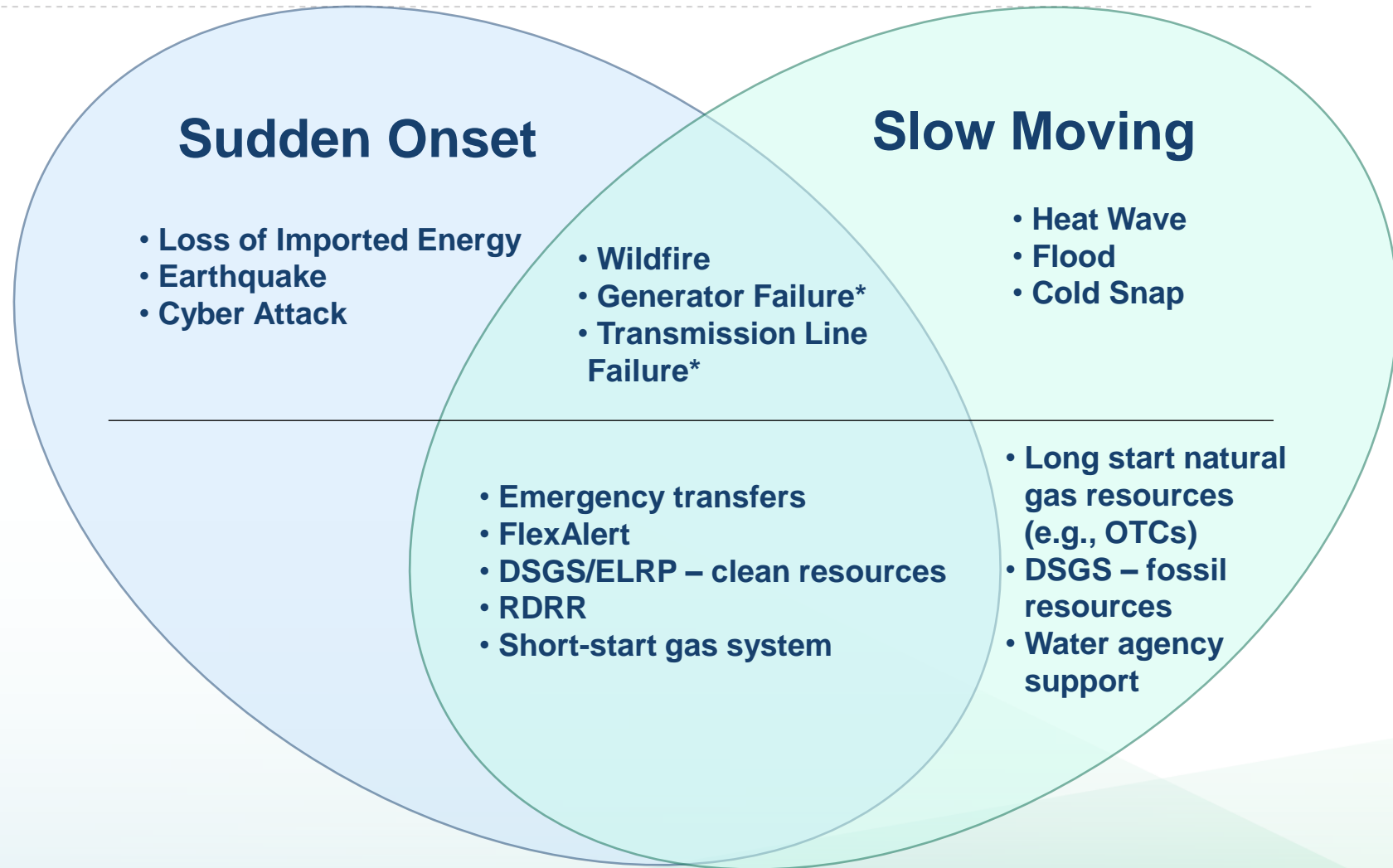


Emergency Preparedness





Types of Emergencies and Support Resources



Events

- Can be singular or coincident, but most are driven by climate change

Resources

- Operational characteristics impact when they are useful

*Caused by heat, wildfire, etc.



Contingencies

Type	Contingency Resource	MW Available		
		July	August	September
Strategic Reliability Reserve	DWR Electricity Supply Strategic Reliability Reserve Program	3150	3150	3150
	CEC Demand Side Grid Support ¹	225	261	297
	CEC Distributed Electricity Backup Assets ²	0	0	0
CPUC*	Ratepayer Programs (Emergency Load Reduction Program, Smart Thermostats, etc.) ³	305	333	357
	IOU Import Contracts	325	930	825
	As Available Energy from Installed Resources	119	50	39
Non-Program	Balancing Authorities Emergency Transfers	300	300	300
	Thermal Resources Beyond Limits: Gen Limits	40	40	40
	Thermal Resources Beyond Limits: Gen Limits Needing 202c	25	25	25
	Total	4489	5089	5033

Data as of 4/29/2024

¹ Adjusted to reflect availability vs enrolled participants, and additional time needed for participants to transfer from ELRP to DSGS and new clean DR aggregators to operationalize

² Nine projects were recommended for DEBA funding for a total of 296 MW

³ Based on enrollment numbers

* Numbers are from June 2023 IOU Excess Reports. Numbers will be updated for summer 2024 when IOUs submit their June 2024 Month-Ahead Showings to CPUC



Thank You

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