

California RA		WRAP
RA Planning Seasons	Annual requirement: June – September Monthly: January-December	Winter Season: November – March 15 Summer Season: June – September 15
Forward Showing Requirement	Annual: October 31 for following calendar year. Monthly: 45 days in advance of 1 st day of month	Demonstrate firm physical capacity for 100% of peak load (P50) + Planning Reserve Margin seven (7) months prior to start of each season
Net Load Peak or Peak Load	System: Peak Load Local: 1-in-10 August peak load Flexible: Max 3-hr Ramp plus contingency	LOLE modeling simulates net peak load in metric-setting; evaluation of capacity value of resources considers contribution during peak hours of greatest need (“net peak”)
Reliability Metric	PRM set at fixed level by local regulatory authority. CPUC has set PRM at 16% for 2023	Planning Reserve Margins established using a probabilistic analysis to calculate the capacity necessary to meet at 1-in-10 loss of load expectation (LOLE)
Planning Reserve Margin Range for 2024	Currently set at 17% for 1-in-2 load. Recent CPUC Energy Division Study calculated a PRM of 19-21% during summer months to meet a 1-in-10 LOLE for 2024	NW: 12.1% - 21.9% SW: 10.3% - 26.9% Note: Planning Reserve Margins are expressed as an Unforced Capacity Requirement (UCAP approach) and vary by month
Planning Reserve Margin Range for 2027	System: to be determined by LOLE analysis	NW: 14.7% - 32.2% SW: 10.5% - 27.5% Note: Planning Reserve Margins are expressed as an Unforced Capacity Requirement (UCAP approach) and vary by month
Transmission Requirement	RA resources are pre-qualified on annual basis; resources (including resource specific imports) must be able to meet load anywhere in CAISO balancing area. Non-resource specific imports must demonstrate firm transmission on last leg to CAISO boundary. CPUC requires energy from import capacity to flow into CAISO.	75% demonstration of source-to-sink firm/conditional firm transmission at Forward Showing; 100% firm/conditional firm source-to-sink Operational time horizon (or exposed to financial charges)

Energy Market Participation	RA resources must bid or self-schedule in day-ahead and real-time energy markets.	Optional. Program is independent from any particular market framework.
Qualifying Capacity Method	<p>Wind and Solar : ELCC</p> <p>Hydro: Exceedance based on 10-yr history with greater weight given to low hydro years</p> <p>Thermal: PMax</p> <p>Short Term Storage: PMax</p> <p>Hybrid Resource: “Sum of parts” method: ELCC for renewable and PMax storage</p> <p>Demand Response (supply-side): Econometric estimation of load responsiveness</p> <p>Demand Response (load-side); modifier to requirements</p> <p>External Resources (imports): resource-specific imports must have firm transmission to CAISO boarder. Both resource specific and non-resource specific imports must have maximum import capability (MIC) rights issued by CAISO. CPUC requires energy from import capacity to flow to into CAISO.</p>	<p>Wind and Solar: ELCC</p> <p>Run-of-River Hydro: ELCC</p> <p>Storage Hydro: WPP-developed hydro model that considers the past 10 years generation, potential energy storage, and current operational constraints</p> <p>Thermal: UCAP (resource capability is adjusted to reflect historic forced outage rates during capacity critical hours)</p> <p>Short Term Storage: ELCC</p> <p>Hybrid Resource: “Sum of parts” method - ESR will use ELCC and generator will use appropriate method</p> <p>Customer Side Resources: load modifier or capacity resource</p> <p>External Resources (imports): must be supported by an identified source, an assurance that the capacity is not used for another entity’s resource adequacy requirements, an assurance that the seller will not fail to deliver in order to meet other supply obligations, and affirmation of NERC priority 6 or 7 firm point-to-point transmission service rights (or network integration transmission service rights) from the identified source to the point of delivery/load</p>