

***Draft 2021 SACCWIS Report and Recommended
Compliance Date Extension for Redondo Beach
Generating Station***

***Interagency Working Group
March 26, 2021***

Timeline of Events

- **August 2019:** SACCWIS identifies a local capacity need in the LA Basin, as well as an emerging system capacity need. SACCWIS recommends an extension of two or more years (but no longer than necessary) for Alamitos and one or more other OTC resources to meet these needs and states that it will update the analysis as additional information becomes available.
- **November 2019:** CPUC Decision (D). 19-11-026 requires 3,300 MW of procurement and recommends extension of Alamitos and Huntington Beach for 3 years, Redondo for 2 years, and Ormond for 1 year as a “bridge” during procurement.
- **January 2020:** SACCWIS recommends extension of Alamitos, Huntington Beach, and Ormond for 3 years and Redondo for 1 year.
- **April 2020:** State Water Resources Control Board (SWRCB) holds workshop on OTC Policy compliance date extensions.
- **August 2020:** Load shed events on August 14 and 15, during West-wide heat event.
- **September 2020:** SWRCB approves extensions according to SACCWIS recommendation.
- **January 2021:** Release of Final Root Cause Analysis on Mid-August 2020 Extreme Heat Wave.

Draft SACCWIS Recommendation

The SACCWIS recommends the State Water Board amend the OTC Policy to extend the compliance date of Redondo Beach Units 5, 6, and 8 for two years from December 31, 2021, to December 31, 2023.

The extension would help meet system reliability needs for September 2022 at hour ending 8 p.m. PDT as demonstrated by the system-wide grid shortfalls in the 2022 stack analysis. The second year of the extension is necessary to address the uncertainty in the 2023 resource supply and the CEC's forecasted 500 MW increase in demand between 2022 and 2023.

Furthermore, a two-year extension would minimize the regulatory risk of returning to the State Water Board should the power generated by Redondo Beach be needed in 2023. Should it be determined that there is no need for Redondo Beach in 2023, the unit may retire earlier than its compliance date deadline.

Final Root Cause Analysis: Findings

- The climate change-induced extreme heat wave across the western United States resulted in demand for electricity exceeding existing electricity resource adequacy (RA) and planning targets.
 - 1-in-30-year August weather event for California (based off 35 years of data).
- In transitioning to a reliable, clean, and affordable resource mix, resource planning targets have not kept pace to ensure sufficient resources that can be relied upon to meet demand in the early evening hours. This made balancing demand and supply more challenging during the extreme heat wave.
 - Rotating outages both occurred after the period of peak demand, during the “net demand peak,” which is the peak demand after subtracting solar and wind generation resources.
- Some practices in the day-ahead energy market exacerbated the supply challenges under highly stressed conditions.
 - Under-scheduling of load, a previous market enhancement that obscured the effects of under-scheduling of load, and convergence bidding issues all contributed.

Final Root Cause Analysis: Agency Actions

- The CEC will focus on additional reliability-related actions in the 2021 Integrated Energy Policy Report (IEPR).
- CPUC opened an emergency procurement proceeding for 2021 and 2022 resources.
- CAISO opened an initiative to make market enhancements for summer reliability.
- CAISO designated ~400 MW of resources at risk of retirement as "reliability must run" resources to prevent their retirement.
 - Almost 300 MW were designated for system reliability must run, the first ever system reliability must run (the remainder had been identified earlier for local reliability reasons, but also support system needs).

CPUC Incremental Procurement under D.19-11-006

- Required 3,300 MW of incremental procurement to be online by August 1, 2023.
 - 50% by August 1, 2021, 75% by August 1, 2022, and 100% by August 1, 2023.
- Load serving entities must report progress towards procurement milestones on September 1, February 1, and August 1 for each "tranche" of procurement.
- Energy Division staff are analyzing February 1, 2021 filings, including supplemental filings in response to errors identified by staff. Full compliance filings are thousands of pages long, but staff has made significant progress.
- Nothing in staff review so far indicates that load serving entities will not meet their obligations.
- After analysis, the Commission will determine whether backstop procurement by the investor-owned utilities is necessary.
- Energy Division sent a quarterly report to the SWRCB on March 16, 2021.

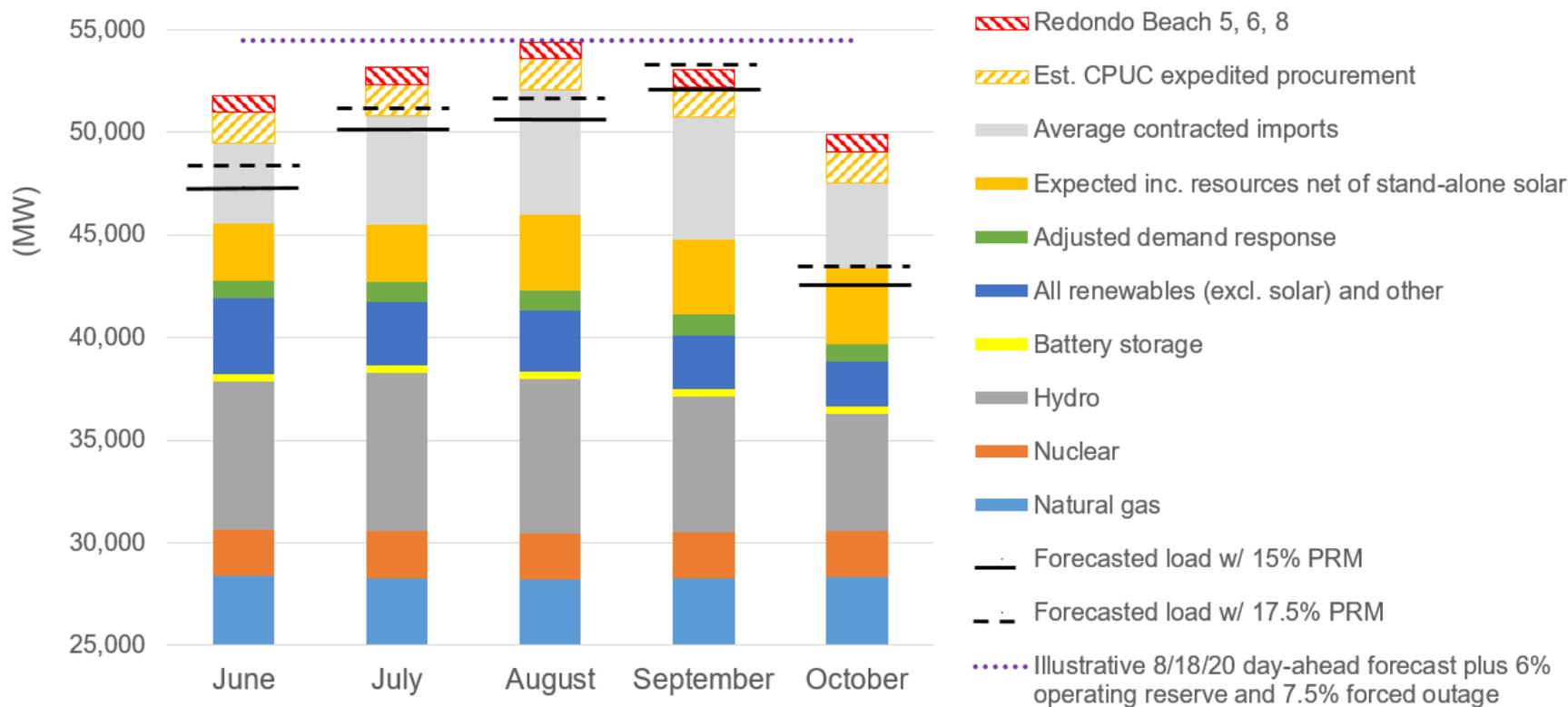
CPUC Incremental Procurement under R.20-11-003

- R.20-11-003 is one of the Commission's responses to the events of August 2020.
- D.21-02-028 required the investor-owned utilities to procure additional capacity that will be available during peak and net peak hours during the summer of 2021. Approved resource types are:
 - Incremental capacity at existing power plants from efficiency upgrades, revised power purchase agreements, etc.
 - Contracting for generation that is at risk of retirement.
 - Incremental storage capacity.
 - Firm forward imported energy.
- The investor-owned utilities filed contracts for roughly 564 MW on February 15, 2021.
- On March 25, 2021, the Commission adopted a decision (number pending) that addresses procurement of incremental resources - including demand-side resources - that can be available for the summer of 2022.

Stack Analysis by CAISO, CPUC, and CEC (1 of 3)

- Assumed 1-in-2 (average) load from the 2020 IEPR.
- Focused on most critical hour after peak (hour ending 8 PM) for June-October 2022.
- Removed solar, which is generally not available at hour ending 8 PM.
- Assumed resources on the 2021 Net Qualifying Capacity list will also be online in 2022, except Redondo Beach.
- Assumed demand response performs at 60%; slight improvement on the 50% finding in the Finding Root Cause Analysis.
- Assumed five-year historical average resource adequacy imports for each month.
- Assumed incremental non-solar resources come online as outlined in CPUC November 2020 *Status of New Resources Expected* analysis.
- Assumed R.20-11-003 results in 1,500 MW of additional capacity available by summer of 2022.
- Analyzed 15% and 17.5% planning reserve margins (PRM), as well as an illustrative August 2020 day ahead forecast.

Jun.-Oct. 2022 Resource Stack at 8 PM



Source: Draft 2021 Report of the Statewide Advisory Committee on Cooling Water Intake Structures, Figure 3.

Jun.-Oct. 2022 Surpluses and Shortfalls

Table 10: Surplus and Shortfall of 2022 Existing and Expected Online Resource Stack Without Redondo Beach as Compared to Load for HE 8 p.m. PDT Plus 15 percent and 17.5 percent PRM (MW)

Month	Existing and expected online resource stack without Redondo Beach	Load for HE 8 p.m. PDT	15% PRM plus load for HE 8 p.m. PDT	17.5% PRM plus load for HE 8 p.m. PDT	Resource stack minus 15% PRM plus load ([B] - [D])	Resource stack minus 17.5% PRM plus load ([B] - [E])
[A]	[B]	[C]	[D]	[E]	[F]	[G]
June	49,466	41,204	47,385	48,415	2,082	1,051
July	50,819	43,603	50,143	51,233	676	(414)
August	52,073	44,009	50,610	51,711	1,463	363
September	50,715	45,343	52,145	53,278	(1,430)	(2,563)
October	47,537	37,036	42,591	43,517	4,946	4,020

Note: In columns [F] and [G], a surplus is shown in black font and a shortfall is shown in red font within parentheses.

Source: Draft 2021 Report of the Statewide Advisory Committee on Cooling Water Intake Structures, Table 10.

Note: the analysis is based on resource adequacy capacity only and does not include additional expedited procurement.

September Supply With and Without Redondo

Table 11: Surplus and Shortfall for September 2022 Total Resource Stack as Compared to Load for HE 8 p.m. PDT Plus 15 percent and 17.5 percent PRM (MW)

	15% PRM	17.5% PRM
[1] Existing and expected online resource stack	(1,430)	(2,563)
[2] Estimated CPUC expedited procurement	1,500	1,500
[3] Sub-total with only expedited procurement	70	(1,063)
[4] Redondo Beach Units 5, 6, and 8 (RB)	834	834
[5] Total with expedited procurement and RB	904	(229)

Note: A surplus is shown in black font and a shortfall is shown in red font within parentheses.

Source: Draft 2021 Report of the Statewide Advisory Committee on Cooling Water Intake Structures, Table 11.

Analysis by CAISO, CPUC, and CEC (2 of 3)

- 2022 Stack Analysis
 - Conservative estimates (assuming all resources come online and are contracted) show shortfalls in July and September.
 - Redondo helps alleviate projected shortfalls.
- 2023
 - IEPR currently shows 500 MW increase in demand at hour ending 8 PM from 2022 to 2023.
 - Uncertainty regarding incremental procurement remains.

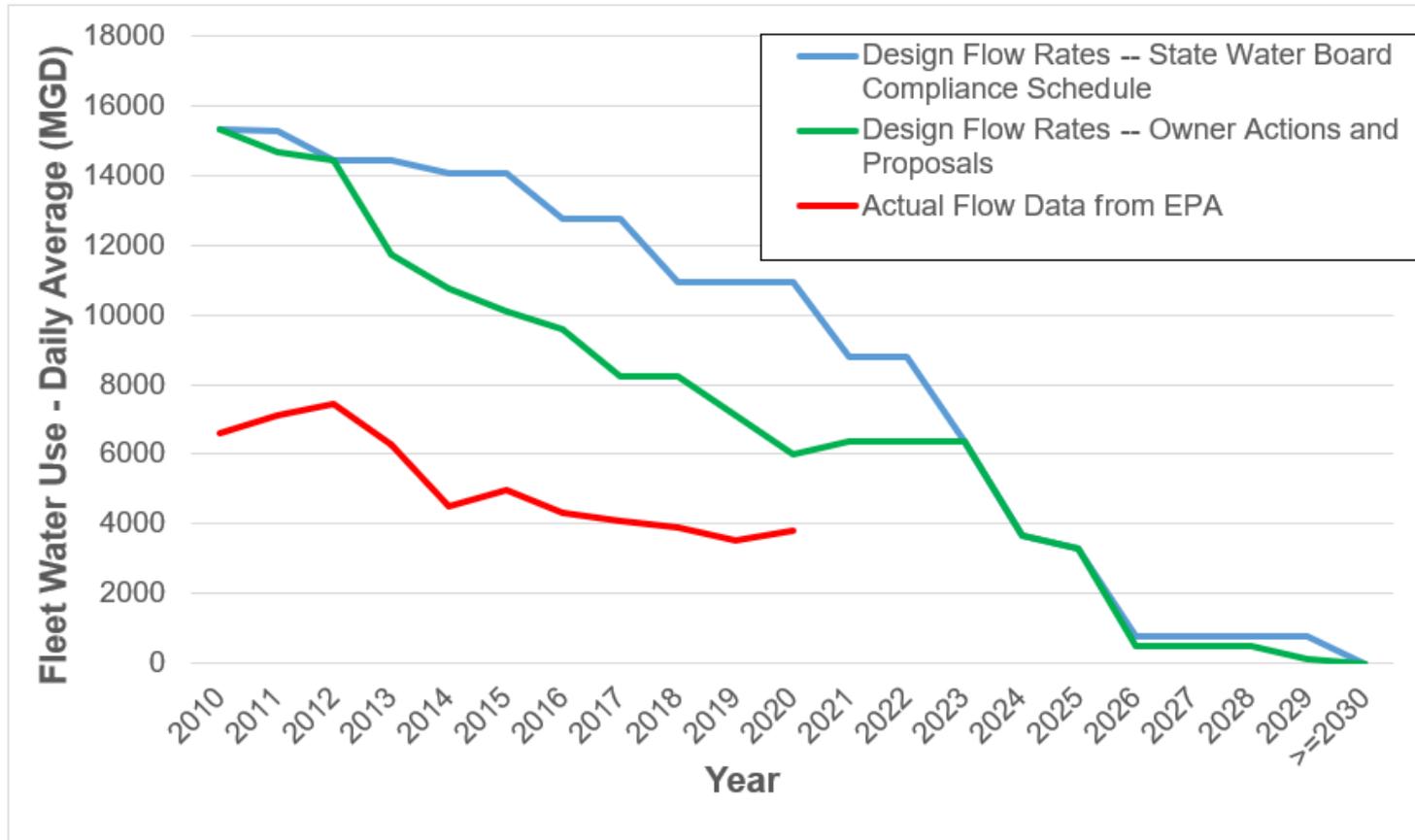
Analysis by CAISO, CPUC, and CEC (3 of 3)

- "At this point in time it is unclear whether authorized or proposed procurement will be realized and whether such procurement will adequately address the net demand peak period; whether an average level of imports can be delivered, whether actual operating conditions stay within planning targets for load, forced outages and needed operating reserves; whether all existing resources stay online and load serving entities are able to contract for all necessary resources in the CAISO BAA; and whether new and untested programs will perform as anticipated." (Draft 2021 SACCWIS Report)

Alternatives for SACCWIS Consideration

- **Alternative 1:** Extend OTC compliance date for Redondo Beach Units 5, 6, and 8 for two years until December 31, **2023**
 - Helps offset projected shortfalls in 2022 and 2023.
 - Minimizes risk of needing to return to SWRCB in 2022 for another extension.
- **Alternative 2:** Extend OTC compliance date for Redondo Beach Units 5, 6, and 8 for one year until December 31, **2022**
 - Helps offset projected shortfalls in 2022 but does not address 2023.
- **Alternative 3:** No Action
 - Does not address projected shortfalls in either 2022 or 2023.
 - Highest risk of exposure to brown-outs and black-outs.

Historic and Projected Water Use by the OTC Fleet With Extension of Redondo Beach



Source: CEC and State Water Board Staff, Updated March 3, 2021

Water and Air Quality Compliance Processes Under an Extension of Redondo Beach

- **Water Quality**
 - SWRCB would likely consider an OTC Policy amendment in the fall of 2021.
 - Office of Administrative Law (OAL) approval must occur by December 31, 2021 for Redondo Beach to remain in compliance with the OTC Policy.
 - Alternatively, CAISO could request suspension of Redondo's OTC compliance date by more than 90 days, under Section 2.B.(2)(b) of the OTC Policy.
 - SWRCB would need to consider the OTC Policy amendment by the end of the initial 90-day extension (by March 31, 2022) unless the State Water Board determines a suspension of longer than 90 days is warranted.
 - The Los Angeles Regional Water Board would consider re-issuing a Time Schedule Order (TSO) associated with the NPDES permit.
- **Air Quality**
 - Redondo Beach has a valid Title V permit from the South Coast Air Quality Management District and may continue operating as long as it maintains compliance with its permit and any future applicable federal, state, and local air regulatory requirements.

Compliance at the Remaining Generators in the CAISO Area (1 of 2)

- Alamitos
 - August 27, 2020: CPUC Resolution E-5098 approved a contract with SCE for Alamitos Units 5, 6, and 8 through 2023.
 - September 1, 2020: SWRCB extended the OTC Policy compliance date until December 31, 2023.
 - The NPDES Permit was amended and TSO approved to reflect this change, effective January 1, 2021.
 - No changes to the OTC Policy compliance date recommended at this time.
- Huntington Beach
 - A power purchase agreement has been executed with a non-utility Load Serving Entity that would extend the operation of Huntington Beach Unit 2 through December 31, 2023.
 - On September 1, 2020, the State Water Board amended the OTC Policy, which extended the compliance date for Huntington Beach Unit 2 until December 31, 2023.
 - No changes to the OTC Policy compliance date recommended at this time.

Compliance at the Remaining Generators in the CAISO Area (2 of 2)

- Ormond Beach
 - On August 27, 2020: CPUC Resolution E-5099 approved a contract with SCE for Ormond Beach Units 1 and 2 through 2023.
 - September 1, 2020: SWRCB extended the OTC Policy compliance date until December 31, 2023.
 - The NPDES permit was updated to reflect this change, effective January 1, 2021.
 - No changes to the OTC Policy compliance date recommended at this time.
- Moss Landing
 - August 27, 2020: CPUC Resolution E-5097 approved a contract with SCE for portions of the energy produced by Moss Landing Units 1 and 2 through 2022.
 - October 23, 2020: SWRCB confirmed that Moss Landing Power Plant was in compliance with the OTC Policy via Track 2 and the terms of the 2014 Settlement entered into by the State Water Board and Dynegy Moss Landing, LLC.

QUESTIONS?