

2022 Report of the Statewide Advisory Committee on Cooling Water Intake Structures

March 14, 2022



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Acronyms and Abbreviations

AFC	Application for Certification
Alamitos	Alamitos Generating Station
BAA	Balancing Authority Area
BARCT	Best Available Retrofit Control Technology
CAISO	California Independent System Operator
CARB	California Air Resources Board
CCC	California Coastal Commission
CCGT	Combined Cycle Gas Turbine
CEC	California Energy Commission
CPUC	California Public Utilities Commission
DDT	Dichlorodiphenyltrichloroethane
Huntington Beach	Huntington Beach Generating Station
Investor-Owned Utilities	IOUs
IRP	Integrated Resource Planning
Kilovolt	kV
LADWP	Los Angeles Department of Water and Power
LCR	Local Capacity Requirement
Local Capacity Technical Report	Local Capacity Technical Report Scattergood Generating Station Units 1 and 2 for Extension Request
Los Angeles Regional Water Board	Los Angeles Regional Water Quality Control Board
LTPP	Long-Term Procurement Plan
MGD	Million Gallons per Day
MVAR	Mega Volt, Ampere, Reactive
MW	Megawatt
NERC	North American Electric Reliability Corporation
NO _x	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System

NQC	Net Qualifying Capacity
Ormond Beach	Ormond Beach Generating Station
OTC	Once-Through Cooling
OTC Fleet	OTC Power Generating Stations
PCB	Polychlorinated biphenyls
PPA	Power Purchase Agreement
PTA	Petition to Amend
PTC	Permit to Construct
PTO	Participating Transmission Owner
RECLAIM	Regional Clean Air Initiatives Market
Redondo Beach	Redondo Beach Generating Station
SACCWIS	Statewide Advisory Committee on Cooling Water Intake Structures
SCAQMD	South Coast Air Quality Management District
Scattergood	Scattergood Generating Station
SCE	Southern California Edison
SCGT	Single Cycle Gas Turbine
SDG&E	San Diego Gas & Electric
SLC	State Lands Commission
SONGS	San Onofre Nuclear Generating Station
State Water Board	State Water Resources Control Board
TSO	Time Schedule Order

I. Introduction

The Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) has prepared this report to the State Water Resources Control Board (“State Water Board”) to summarize the State of California’s current electrical grid reliability needs.

The SACCWIS includes representatives from the California Energy Commission (CEC), California Public Utilities Commission (CPUC), California Coastal Commission (CCC), California State Lands Commission (SLC), California Air Resources Board (CARB), the California Independent System Operator Corporation (CAISO), and the State Water Board. The State Water Board, in adopting the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling, also known as the Once-Through Cooling (OTC) Policy,¹ impaneled the SACCWIS to advise the State Water Board on the implementation of the OTC Policy. The SACCWIS provides recommendations to ensure that the compliance schedule accounts for the reliability of California’s electricity supply, including local area reliability, statewide grid reliability, and permitting constraints. Section 3.B(4) of the OTC Policy provides that the SACCWIS will report to the State Water Board with recommendations on any need for modifications to the compliance schedule each year.

Since 2010, the OTC Policy has reduced marine and estuarine water use by electric generators in California and lessened entrainment and impingement mortality of marine life. The SACCWIS is committed to realizing full compliance with the OTC Policy in the coming years, while maintaining the reliability of California’s electric system and meeting the state’s environmental and energy goals.

In August 2020, swaths of the western United States encountered a prolonged and extreme heat storm. This led to a stack analysis conducted by the CPUC, CAISO, and CEC, as directed by the Final Root Cause Analysis Report, that identified grid reliability concerns in summer 2022 and uncertainties that could jeopardize grid reliability in summer 2023. Therefore, the SACCWIS recommended extending the OTC Policy

¹ The most recent version of the OTC Policy is available on the [State Water Board’s website](#).

compliance schedule of Redondo Beach Generating Station (“Redondo Beach”) Units 5, 6, and 8 for two years through December 31, 2023. On October 19, 2021, the State Water Board amended the OTC Policy under Resolution No. 2021-0048, which extended the compliance date of Redondo Beach Units 5, 6, and 8, as recommended by the SACCWIS, to address system-wide grid reliability in the CAISO balancing authority area (BAA). This OTC Policy amendment was approved by the Office of Administrative Law on December 23, 2021.

This report primarily focuses on power generating facilities within the CAISO BAA, as the compliance dates for facilities owned or operated by the Los Angeles Department of Water and Power (LADWP) were reviewed and modified by the State Water Board in July 2011. However, the LADWP adopted its Local Capacity Technical Report Scattergood Generating Station Units 1 and 2 for Extension Request (“Local Capacity Technical Report”) on December 14, 2021. LADWP representatives indicated that this Local Capacity Technical Report identified grid reliability issues in the LADWP BAA and recommended requesting the State Water Board amend the OTC Policy to extend the compliance date for Scattergood Generating Station (“Scattergood”). Section 3 of this report contains available information on Scattergood and local grid reliability in the LADWP BAA.

The SACCWIS continues to closely monitor grid reliability needs throughout the state. At this time, the SACCWIS does not recommend any changes to final compliance dates in the OTC Policy because no new system-wide grid reliability issues have been identified. However, the SACCWIS may re-convene in 2022 to evaluate whether an extension to the OTC Policy compliance date for Scattergood is necessary to maintain local grid reliability in the LADWP BAA when more information is available.

II. Status of Compliance and Once-Through Cooling Water Use

Since the OTC Policy was adopted in 2010, several power generating units have retired, repowered, or come into compliance. The closure of the San Onofre Nuclear Generating Station (SONGS) resulted in a significant reduction in projected ocean or estuarine water use for power plant cooling. Table 1 shows the power plants in the CAISO and LADWP

BAAs that have achieved compliance, several of which did so well in advance of their mandated compliance deadlines.

Table 1: OTC Compliance Achievement

Facility & Units	NQC (MW)²	OTC Policy Scheduled Compliance Date	Actual Compliance Date
Humboldt Bay 1, 2	135	Dec. 31, 2010	Retired Sept. 30, 2010
South Bay	296	Dec. 31, 2011	Retired Dec. 31, 2010
Potrero 3	206	Oct. 1, 2011	Retired Feb. 28, 2011
Huntington Beach 3, 4	452	Dec. 31, 2020	Retired Nov. 1, 2012 ³
Contra Costa 6, 7	674	Dec. 31, 2017	Retired Apr. 30, 2013 ⁴
San Onofre 2, 3	2,246	Dec. 31, 2022	Retired June 7, 2013 ⁵
Haynes 5, 6	535	Dec. 31, 2013	Retired June 13, 2013 ⁶
El Segundo 3	335	Dec. 31, 2015	Retired July 27, 2013 ⁷
Morro Bay 3, 4	650	Dec. 31, 2015	Retired Feb. 5, 2014
El Segundo 4	335	Dec. 31, 2015	Retired Dec. 31, 2015
Scattergood 3	497	Dec. 31, 2015	Retired Dec. 31, 2015
Pittsburg	1,159	Dec. 31, 2017	Operations ceased Dec. 31, 2016
Moss Landing 6, 7	1,509	Dec. 31, 2020	Retired Jan. 1, 2017
Encina 1	106	Dec. 31, 2017	Retired Mar. 1, 2017

² Net Qualifying Capacity (NQC) in megawatts (MW). NQC is the net amount of capacity available from a resource that can be counted towards meeting resource adequacy requirements.

³ Huntington Beach Units 3 and 4 were converted to synchronous condensers in 2013. Once-through cooling water was used in a limited capacity until September 30, 2018.

⁴ Although NRG retired Contra Costa Units 6-7, the Marsh Landing facility was constructed immediately next to the retired facility. The Marsh Landing Generating Station is a non-OTC generating facility.

⁵ SONGS Units 2 and 3 were officially retired June 7, 2013, but they ceased power generation on Jan. 31, 2012.

⁶ LADWP retired Haynes Units 5-6 and replaced them with Haynes Units 11-16, which do not use OTC technology.

⁷ NRG retired El Segundo Unit 3 and replaced it with El Segundo Units 5-8, which do not use OTC technology.

Facility & Units	NQC (MW)²	OTC Policy Scheduled Compliance Date	Actual Compliance Date
Mandalay 1, 2	430	Dec. 31, 2020	Retired Feb. 5, 2018
Encina 2-5	844	Dec. 31, 2018	Retired Dec. 11, 2018
Redondo Beach 7	493	Dec. 31, 2020	Retired Oct. 1, 2019
Alamitos 1, 2, 6	848	Dec. 31, 2020	Retired Dec. 31, 2019
Huntington Beach 1	215	Dec. 31, 2020	Retired Dec. 31, 2019
Moss Landing 1, 2	1,020	Dec. 31, 2020	Complied Oct. 23, 2020 ⁸
Total Capacity (MW)	12,985	--	--

Table 2 reflects the current compliance plans for the remaining power generating units that use ocean or estuarine water for cooling purposes. Table 3 presents recent performance of the OTC units in percent of annual capacity factors. The annual capacity factor is defined as the ratio of the electrical energy produced by a generating unit for the year divided by the maximum energy that could have been produced at continuous full power operation. The capacity factor provides one indication of how a generating unit is used. Generating units used to meet peak power needs typically have lower capacity factors. The capacity of most of the remaining OTC facilities is only used a small percentage of the time, but this capacity helps serve demand during peak hours and stressed operating conditions. Some of the capacity at these plants will need to be replaced to ensure local and system grid reliability.

⁸ Dynegy Moss Landing complied with Track 2 of the OTC Policy.

Table 2: OTC Compliance Plans for Remaining Units

Facilities and Units	NQC (MW) as of 12/2020	OTC Policy Scheduled Compliance Date	Owner Proposed Compliance Method
Alamitos 3, 4, 5	1,137	Dec. 31, 2023	Plans to comply by Dec. 31, 2023
Harbor 5	75	Dec. 31, 2029	Plans to comply by Dec. 31, 2029
Haynes 1, 2	460	Dec. 31, 2029	Plans to comply by Dec. 31, 2029
Haynes 8	264	Dec. 31, 2029	Plans to comply by Dec. 31, 2029
Huntington Beach 2	226	Dec. 31, 2023	Plans to comply by Dec. 31, 2023
Ormond Beach 1, 2	1,491	Dec. 31, 2023	Plans to comply by Dec. 31, 2023
Redondo Beach 5, 6, 8	834	Dec. 31, 2023	Plans to comply by Dec. 31, 2023
Scattergood 1, 2	326	Dec. 31, 2024	Compliance date extension from Dec. 31, 2024, to Dec. 31, 2029 requested by the LADWP ⁹
Total Capacity (MW)	5,303	--	--

⁹ On December 14, 2021, the LADWP Board of Commissioners adopted the Local Capacity Technical Report, which identified the need to extend Scattergood’s compliance date to maintain local grid reliability according to LADWP representatives. On February 3, 2022, the State Water Board received a request letter from LADWP to extend Scattergood’s compliance date through December 31, 2029.

Table 3: Recent Performance of OTC Generating Units

CAISO Balancing Authority Area Facilities and Units	OTC Policy Scheduled Compliance Date	NQC (MW)	Annual Capacity Factors (Percent)						
			2014	2015	2016	2017	2018	2019	2020
Alamitos 3	Dec. 31, 2023	321	16.60	10.80	10.40	6.67	10.13	5.58	6.46
Alamitos 4	Dec. 31, 2023	336	18.70	7.00	9.90	8.78	9.60	5.59	4.50
Alamitos 5	Dec. 31, 2023	480	1.70	3.40	1.90	3.06	2.93	1.24	5.42
Huntington Beach 2	Dec. 31, 2023	226	26.20	19.40	12.40	9.03	6.99	4.12	5.69
Ormond Beach 1	Dec. 31, 2023	741	0.80	2.50	0.70	1.64	1.31	0.55	4.98
Ormond Beach 2	Dec. 31, 2023	750	2.40	3.20	0.80	1.75	1.28	1.63	5.26
Redondo Beach 5	Dec. 31, 2023	179	2.30	3.50	1.40	2.52	2.04	1.94	1.85
Redondo Beach 6	Dec. 31, 2023	175	2.10	4.20	3.10	4.18	1.67	2.50	3.95
Redondo Beach 8	Dec. 31, 2023	480	3.30	3.90	1.70	3.99	2.79	1.88	4.99
LADWP Balancing Authority Area Facilities and Units									
Harbor 5	Dec. 31, 2029	75	3.30	2.40	4.00	2.29	1.01	3.40	0.39
Haynes 1	Dec. 31, 2029	230	12.70	6.50	12.30	3.45	1.64	4.05	5.13
Haynes 2	Dec. 31, 2029	230	13.10	8.00	16.00	5.34	1.13	1.18	3.92
Haynes 8	Dec. 31, 2029	264	34.20	38.00	40.90	39.56	45.39	39.22	48.89
Scattergood 1	Dec. 31, 2024	163	24.50	8.30	22.90	5.32	4.47	3.62	3.15
Scattergood 2	Dec. 31, 2024	163	6.60	21.20	5.90	2.09	2.38	6.62	10.36

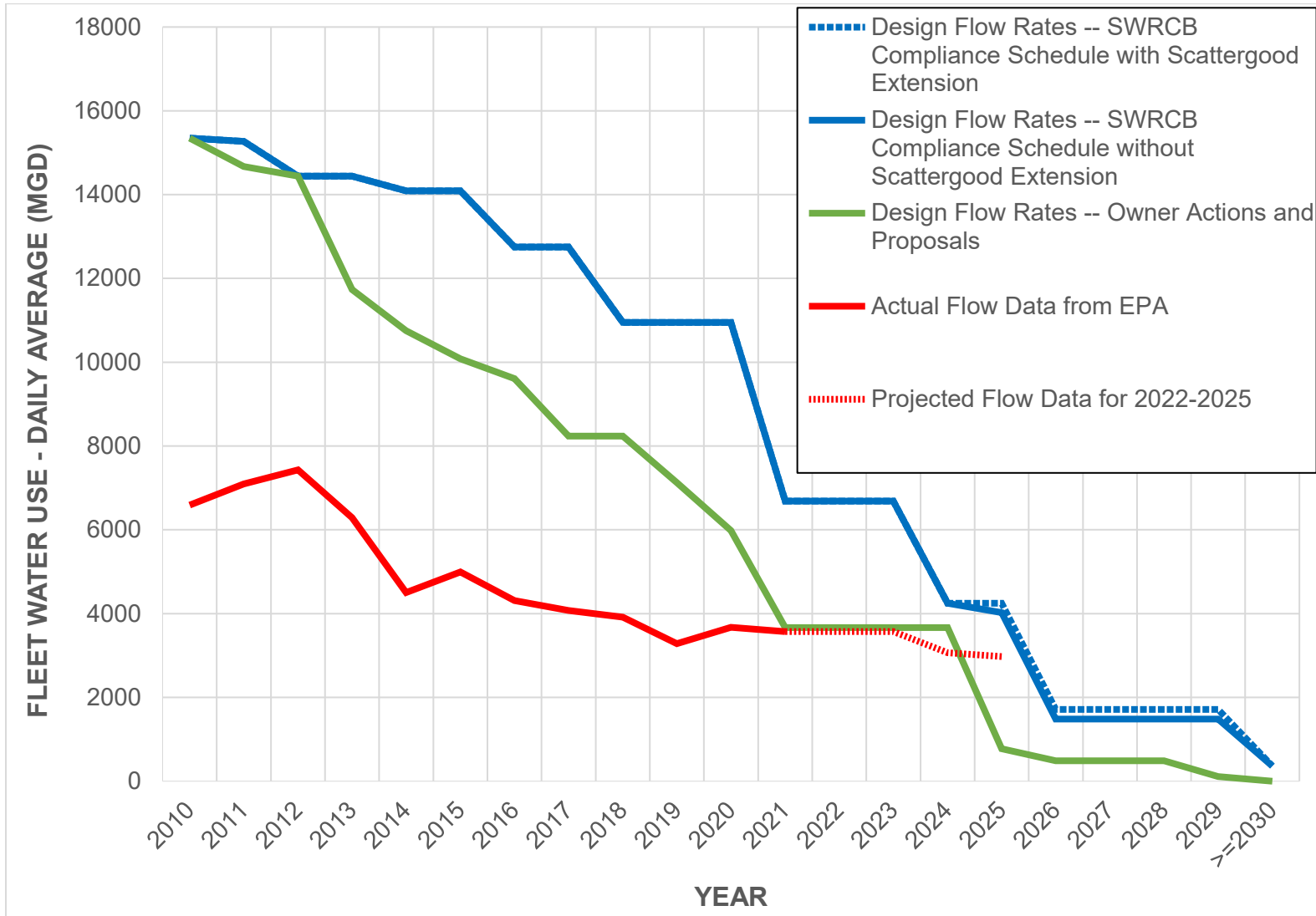
Source: California Energy Commission, Quarterly Fuel and Energy Report, December 2020.

Once-Through Cooling Water Use

Figure 1 illustrates ocean and estuarine water flow rates of the OTC fleet through time. The uppermost line in blue shows the reduction in design water flow based on the OTC Policy compliance schedule as most recently amended and adopted by the State Water Board. The green line shows the aggregate water flow using design flow rates based on the actual retirement dates and expected retirement dates. The red line shows actual flow rates from the OTC fleet. See Appendix A for actual flow rate data.

The red line is below the two upper lines because fossil-fueled OTC facilities have generally operated with annual capacity factors below power plant permit limits (the source of the design condition flow rates). In addition, SONGS and several other OTC facilities retired before their OTC compliance dates, thus creating accelerated environmental benefits compared to the original compliance schedule.

Figure 1: Historic and Projected Water Usage by the OTC Fleet



Source: CEC and State Water Board Staff, Updated February 16, 2022.

III. Grid Resource and Infrastructure Planning and Status

The CPUC's Integrated Resource Planning (IRP) process periodically evaluates generation resources in the CAISO system.¹⁰ The IRP process was implemented based on the legislative requirements of Senate Bill 350 (De Leon, Chapter 547, Statutes of 2015), and serves as a successor to the CPUC's Long-Term Procurement Plan (LTPP). The LTPP proceeding evaluated generation resources in the CAISO system every two years, most recently in 2015. The intent of this proceeding was to evaluate whether existing and projected resources were sufficient to meet future demand, and to authorize procurement of additional resources in the event that they are insufficient. Retirement schedules for OTC facilities were incorporated into this analysis and updated according to progress towards or changes in retirement deadlines. In addition to system-wide analyses, the LTPP also evaluated capacity requirements in localized, high-demand areas.

The CEC is the lead agency for licensing fossil fuel power plants of 50 megawatts (MW) and larger and has a regulatory certification process under the California Environmental Quality Act. Under this process, the CEC conducts an environmental analysis of each project's Application for Certification (AFC) including an analysis of alternatives and mitigation measures to minimize any significant adverse effect the project may have on the environment. These requirements do not apply to the repowering or replacement of an existing power plant wherein the net increase in capacity is less than 50 MW.

Tables 4 through 7 show the different authorizations and approvals of electric capacity procurement for the Southern California Area. The different tracks reflect the separate procurement authorizations under the CPUC's most recent full LTPP proceeding, R.12-03-014. Track 1 procurement stems from D.13-02-015, which outlined requirements in the West Los Angeles Basin and Big Creek/Ventura local reliability areas. Track 4 procurement stems from D.14-03-004, which outlined additional requirements in the West Los Angeles Basin and San Diego/Imperial Valley local reliability areas in response to the

¹⁰ The combined IRP-LTPP proceeding is R.16-02-007.

retirement of the SONGS. The use of the term “track” in this context is different from the two tracks for compliance with the OTC Policy.

Table 4: Southern California Edison Current Authorizations

Resource Type	Track 1 LCR¹¹ (West LA Basin) MW	Track 1 LCR (Big Creek/Ventura) MW	Additional Track 4 Authorization (West LA Basin) MW	Total Authorization MW	Approved Applications MW
Preferred Resources¹² & Energy Storage (Minimum)	200	--	400	600	565 ¹³
Gas-fired Generation (Minimum)	1,000	--	--	1,000	1,000
Optional: Preferred Resources/ Storage	Up to 400	--	--	Up to 400	0
Optional: Any Resource	200	--	100 to 300	300 to 500	382
Required: Any Resource	--	215 (minimum) to 290	--	215 (minimum) to 290	207 ¹⁴
Total	1,400 to 1,800	215 to 290	500 to 700	2,115 to 2,790	2,154

¹¹ Local Capacity Requirement (LCR)

¹² Preferred resources are those used for energy efficiency, demand response, renewable resources, and distributed generation. Preferred resources are described in the 2005 State Energy Action Plan II.

¹³ Includes roughly 27 MW of storage capacity authorized by Resolution E-4804 to alleviate constraints in Southern California due to the Aliso Canyon gas storage facility outage.

¹⁴ Includes the 100 MW Strata Saticoy storage project approved in D.19-12-055 and 95 MW of storage and demand response resources (with the option for an additional 20 MW from one storage resource) approved in Resolution E-5033, which replaced the 262 MW Puente Power Project that was approved in D.16-05-050 and subsequently cancelled.

Table 5: Southern California Edison Approved Applications¹⁵

Resource Type	Location	Capacity MW	Status
Demand Response	Big Creek/Ventura	14	Approved ¹⁶
Demand Response	West LA Basin	5	Approved
Distributed Generation	Big Creek/Ventura	6	Approved
Distributed Solar Generation	Johanna/Santiago	12	Approved
Distributed Solar Generation	West LA Basin	28	Approved
Energy Efficiency	Big Creek/Ventura	6	Approved
Energy Efficiency	Johanna/Santiago	23	Approved
Energy Efficiency	West LA Basin	101	Approved
Energy Storage	Big Creek/Ventura	186	Approved
Energy Storage	Johanna/Santiago	153	Approved
Energy Storage	Long Beach	100	Operational
Energy Storage	West LA Basin	138	Approved
Combined Cycle Gas Turbine	Alamitos	640	Operational
Combined Cycle Gas Turbine	Huntington Beach	644	Operational
Gas Combustion Turbine	Stanton	98	Operational

¹⁵ For additional details, see Southern California Edison application [A.14-11-012](#), [A.14-11-016](#), [A.15-12-013](#), [A.16-11-002](#), and [Resolutions E-4804 and E-5033](#).

¹⁶ Approved status indicates that the project has been approved, or that a portion of the capacity (MW) of the associated facility may be operational.

Table 6: San Diego Gas & Electric Current Authorizations

Resource Type	D.13-03-029/ D.14-02-016 MW	Additional Track 4 Authorization MW	Total Authorization MW	Pending & Approved Applications MW
Preferred Resources & Energy Storage	--	200 (Minimum)	300	144.5 ¹⁷
Optional: Any Resource	300 (Pio Pico, CA)	300 to 600	600 to 900	800
Total	300	500 to 800	800 to 1,100	944.5

Table 7: San Diego Gas & Electric Approved Applications¹⁸

Resource Type	Location	Capacity in MW	Status
Demand Response	San Diego/Imperial Valley	4.5	Operational
Energy Efficiency	San Diego/Imperial Valley	19	Approved ¹⁹
Energy Storage	San Diego/Imperial Valley	121	Approved
Gas Combustion Turbine	Carlsbad (Encina site)	500	Operational
Gas Turbine	Pio Pico	300	Operational

¹⁷ Includes roughly 38 MW of storage capacity authorized by Resolution E-4798 to alleviate constraints in Southern California due to the Aliso Canyon gas storage facility outage.

¹⁸ For additional details on approved projects, see San Diego Gas & Electric application [A.14-07-009](#), [A.16-03-014](#), [A.17-04-017](#), and [Resolution E-4798](#).

¹⁹ Approved status indicates that the project has been approved, or that a portion of the capacity (MW) of the associated facility may be operational.

The Alamos Generating Station (“Alamos”) AFC and Huntington Beach Generating Station (“Huntington Beach”) Petition to Amend (PTA) Certifications were approved on April 12, 2017, and the projects reached commercial operation in February 2020. The Stanton Energy Reliability Center is one of the projects selected by Southern California Edison (SCE) to meet the Western Los Angeles Basin local capacity requirements and reached commercial operation in July 2020. The Redondo Beach AFC was withdrawn by AES on April 7, 2020, and on June 3, 2020, the Energy Commission’s Presiding Member terminated the proceeding for the Redondo Beach AFC. The NRG Puente Power Project AFC was withdrawn by NRG on December 7, 2018, and will now be replaced with a suite of alternatives.²⁰ On December 11, 2018, the CEC’s Presiding Member terminated the proceeding for the NRG Puente Power Project AFC.²¹ Following solicitations by SCE to replace the Puente Power Project, the CPUC approved 195 MW of storage and demand response capacity in D.19-12-055 and Resolution E-5033.

In addition to its work supporting the CPUC LTPP and now the IRP proceeding, the CAISO expanded its transmission planning process to explore transmission alternatives for improving reliability in the local capacity areas affected by the retirements of OTC units. The CAISO approved several transmission upgrades and additions in its 2013-2014 transmission planning process to help address Local Capacity Requirement (LCR) issues associated with the compliance schedule under the OTC Policy and the closure of SONGS. The timing of the CAISO-approved transmission projects and CPUC projects, as well as authorized procurement levels for SCE and San Diego Gas & Electric (SDG&E), facilitate attainment of the compliance schedule of the OTC Policy for OTC facilities within the CAISO’s BAA.

The CAISO’s analysis of the 2018-2019 Transmission Plan²² indicated that the authorized resources and previously-approved transmission projects are working together to meet

²⁰ The Puente Power Project was a replacement project for the Mandalay Power Plant. The suite of alternatives includes: transmission upgrades, additional energy efficiency, demand response, and battery storage.

²¹ The 2018-2019 Transmission Plan is available on [CAISO’s website](#).

²² The 2018-2019 Transmission Plan is available on the [CAISO’s website](#). The analysis was further validated in subsequent plans.

the reliability needs in the Los Angeles Basin and San Diego areas. Due to the delay of the Carlsbad Energy Center Project, the CAISO conducted a 2018 summer reliability study to assess risk to the Los Angeles Basin and San Diego-Imperial Valley local reliability areas. The assessment culminated in the Encina Power Station 2018 Reliability Study.²³ This study was completed at the end of 2016 and was the basis for amending the OTC Policy to defer the compliance date for Encina Power Station Units 2, 3, 4, and 5 by one year to 2018.

The following provides a summary of the reliability transmission projects approved by the CAISO Board of Governors in the 2012-2013, 2013-2014, 2014-2015, 2015-2016, and 2016-2017 Transmission Plans²⁴ to address reliability concerns related to the retirement of SONGS and OTC facilities in the Los Angeles Basin and San Diego local areas. In Table 8, the target in-service date and responsible Participating Transmission Owner (PTO) are identified.

Table 8: In-Service Dates for CAISO Board Approved Transmission Projects

	Transmission Projects	PTO Service Territory	Target In-Service Dates
1	Talega Synchronous Condensers (2x225 Megavolt, Ampere, Reactive, or MVAR)	SDG&E	In-Service (8/7/2015)
2	San Luis Rey Synchronous Condensers (2x225 MVAR)	SDG&E	In-Service (12/29/2017)
3	Imperial Valley Phase Shifting Transformers (2x400 MVAR)	SDG&E	In-Service (5/1/2017)
4	Sycamore – Peñasquitos 230kV Line	SDG&E	In-Service (8/29/2018)
5	San Onofre Synchronous Condensers (1x225 MVAR)	SDG&E	In-Service (10/16/2018)

²³ The SACCWIS’ Encina Power Station 2018 Reliability Study is available on the [State Water Board’s website](#).

²⁴ Transmission plans are found on the CAISO’s website as follows: [2012-2013 Transmission Plan](#); [2013-2014 Transmission Plan](#); [2014-2015 Transmission Plan](#); [2015-2016 Transmission Plan](#); [2016-2017 Transmission Plan](#).

	Transmission Projects	PTO Service Territory	Target In-Service Dates
6	Miguel VAR Support (450 MVAR)	SDG&E	In-Service (4/28/2017)
7	Santiago Synchronous Condensers (3x81 MVAR)	SCE	In-Service (12/8/2017)
8	Mesa Loop-In Project and South of Mesa 230kV Line Upgrades	SCE	5/31/2022
9	Extension of Huntington Beach Unit 3 Synchronous Condenser (140 MVAR)	SCE	Reliability-Must-Run contract extended and expired on 12/31/2017 ²⁵

Mesa Loop-In Substation Project

The currently-underway Mesa Loop-In Substation Project is intended to rebuild and upgrade SCE transmission infrastructure in the Western Los Angeles Basin. For background, SCE filed an application for a Permit to Construct (PTC) the Mesa Loop-In Substation Project with the CPUC on March 13, 2015. On February 9, 2017, SCE received the PTC from the CPUC. SCE received the first Notice to Proceed from the CPUC on September 27, 2017, and the second Notice to Proceed for the remaining scope of work (remaining substation, satellite substation work, telecom scope of work) on November 15, 2017. Construction of the project commenced on October 2, 2017.

One of the primary and final components of the project involves the construction of a 500 kilovolt (kV) substation that is intended to replace a previous and smaller 220 kV substation. This portion of the project was delayed, and the current schedule forecasts a May 31, 2022 in-service date. However, the 230 kV loop-in portion of the project has been completed and is currently bringing new power sources to Mesa substation. In the interim, the 230 kV bus tie breaker is operated in the closed position (while 500kV portion is constructed) to help mitigate loading concerns. Therefore, at this time, the SACCWIS

²⁵ The contract for the synchronous condensers expired on Dec. 31, 2017, and they are no longer operating.

is not recommending an amendment to the OTC Policy to extend compliance dates to provide grid reliability associated with the Mesa Loop-In Substation Project.

CPUC Incremental Capacity Procurement Pursuant to D.19-11-016

On November 7, 2019, the CPUC adopted D.19-11-016²⁶ directing procurement of 3,300 MW from load serving entities under the CPUC's jurisdiction by August 2023, to ensure system-wide electric reliability. The CPUC also recommended that the State Water Board consider revising the OTC Policy to extend the compliance dates for Alamitos Units 3, 4, and 5 for up to three years, Huntington Beach Unit 2 for up to three years, Redondo Beach Units 5, 6, and 8 for up to two years, and Ormond Beach Generating Station ("Ormond Beach") Units 1 and 2 for up to one year. Ultimately the SACCWIS recommended a slight modification to the State Water Board to extend the OTC Policy compliance dates of Alamitos Units 3, 4, and 5 for three years through December 31, 2023, Huntington Beach Unit 2 for three years through December 31, 2023, Ormond Beach Units 1 and 2 for three years through December 31, 2023, and Redondo Beach Units 5, 6, and 8 for one year through December 31, 2021. The modification was in recognition of comments the State Water Board received, including a number of comments regarding impacts from the continued operation of Redondo Beach. The State Water Board also received comments from the Oxnard City Manager on November 18, 2019, noting conditional support for an extension of Ormond Beach Units 1 and 2 based upon a plan between the Oxnard City Council and GenOn to perform comprehensive decommissioning, dismantling, and remediation of the site. An amendment to the OTC Policy compliance dates for Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach, consistent with recommendation of the SACCWIS, was adopted by the State Water Board on September 1, 2020.

D.19-11-016 requires 1,650 MW of the required procurement to be online by August 1, 2021; 2,475 MW to be online by August 1, 2022; and the full 3,300 MW to be online by August 1, 2023. These requirements only apply to CPUC-jurisdictional load serving entities, which represent approximately 90 percent of the load served in the

²⁶ CPUC D.19-11-016 can be found on the [CPUC's website](#).

California ISO. These entities conducted solicitations for replacement capacity in 2019 and 2020; contracts for the investor owned utilities' portion of these resources were approved in 2020 and 2021 (the other load serving entities are not required to have contracts approved by the CPUC).²⁷ In D.20-12-044, the CPUC established milestones and reporting deadlines of February 1 and August 1 annually for 2021-2023 for each procurement tranche.²⁸ Since then, the CPUC has periodically provided procurement progress based on load-serving entities' filings.²⁹

CPUC Incremental Capacity Procurement Pursuant to D.21-06-035

On June 24, 2021, to address mid-term reliability needs as Diablo Canyon Power Plant and several OTC facilities retire, the CPUC adopted D.21-06-035³⁰ directing CPUC-jurisdictional load serving entities to procure 11,500 MW of new capacity that is to come on line between 2023 and 2026, in addition to the 3,300 MW ordered in 2019.

This procurement order requires that, out of the 11,500 MW total, 2,500 MW must be from zero-emission resources. Additionally, 2,000 MW must be long lead-time resources, with at least 1,000 MW of long-duration storage (able to deliver at maximum capacity for at least eight hours from a single resource) and 1,000 MW of firm capacity with zero on-site emissions or that qualifies under the renewables portfolio standard eligibility requirements and has at least an 80 percent capacity factor.

D.21-06-035 requires that the 11,500 MW total come online as follows: 2,000 MW online by August 1, 2023; 6,000 MW online by June 1, 2024; 1,500 MW online by June 1, 2025; and 2,000 MW online by June 1, 2026.

²⁷ See CPUC Resolutions E-5100, E-5101, E-5117, E-5139, E-5140, and E-5142.

²⁸ CPUC D.20-12-044 can be found on the [CPUC's website](#).

²⁹ The CPUC provides presentations on the status of D.19-11-016's procurement order on CPUC's [IRP Procurement Track website](#). The most recent update provides a status update on procurement compliance based on load-serving entities' February 1, 2021 filings.

³⁰ CPUC D.21-06-035 can be found on the [CPUC's website](#).

CPUC Incremental Capacity Procurement Monitoring

The CPUC is monitoring procurement under both D.19-11-016 and D.21-06-035. Between the two procurement orders, 14,800 MW of capacity is ordered to come online as follows: 1,650 MW by August 1, 2021; 2,475 MW by August 1, 2022; 5,300 MW by August 1, 2023; 11,300 MW by August 1, 2024; 12,800 MW by June 1, 2025; and 14,800 MW by June 1, 2026. As of January 2022, 2,650 MW of capacity has come online. Based on current contracting trends, the total amount of new resources online could be as high as 8,000 MW of NQC by the end of 2023; however, because the CPUC's procurement target is 5,300 MW by 2023, there is some room for project delays that may occur for various reasons. Regardless, CAISO and CPUC analyses currently show sufficient transmission and queue projects to meet requirements under both procurement orders.

LADWP BAA and Scattergood

The LADWP BAA spans two broad geographic regions, including the Greater Los Angeles Metropolitan Region and the area encompassing the Owens Valley in Eastern California. On February 12, 2019, Los Angeles Mayor Eric Garcetti introduced the Los Angeles Green New Deal, which included a provision that the LADWP will transition to 100 percent renewable energy by 2045 to help address climate change. This timeline was accelerated by a motion adopted by the Los Angeles City Council in September 2021, which directed the LADWP to procure 100 percent zero-carbon electricity by 2035.

The Green New Deal and motion adopted by the Los Angeles City Council will collectively reduce the impacts of Los Angeles' energy production sector on climate change. However, this goal disrupted the LADWP's previous plans to comply with the OTC Policy by repowering the three OTC facilities within its BAA with non-OTC, fossil-fueled combined cycle generating turbines (CCGT).

Following the adoption of the OTC Policy in 2010, the LADWP submitted implementation plans for the OTC facilities within its jurisdiction that would have phased out the use of OTC completely by 2029. With regard to Scattergood, the LADWP planned to replace

Units 1 and 2 with air-cooled CCGT and phase-out the use of OTC by December 31, 2024. Between 2011 and 2019, the agency made significant progress in line with its implementation plan, having submitted an approved permit-to-construct and initiating the regulatory process to comply with the California Environmental Quality Act. Under the previous repowering plans, construction on the new CCGT was slated to begin at the end of 2020. However, these plans and permits were withdrawn after Mayor Garcetti announced the Green New Deal in February 2019. LADWP has indicated it cannot repower Scattergood by the facility's current OTC compliance date of December 31, 2024, under the previous CCGT plan as a result.

Following the announcement of the Green New Deal, the LADWP Board of Commissioners developed and adopted the Local Capacity Technical Report on December 14, 2021. The LADWP representatives conveyed to State Water Board that the Local Capacity Technical Report examined the implications of retiring Scattergood without replacement capacity in 2024 and determined a 254 MW deficit would exist in the western subsystem of the LADWP BAA. This deficit would leave a significant risk of local grid outages occurring. The LADWP also conveyed that the Local Capacity Technical Report identified projects to enhance local transmission infrastructure that would maintain local grid reliability without the need for Scattergood; however, these projects will not be completed until 2029. Therefore, the LADWP indicated that the Local Capacity Technical Report included a recommendation to request an OTC Policy compliance date extension for Scattergood from December 31, 2024, to December 31, 2029. This request is intended to ensure grid reliability in the LADWP BAA while the agency plans for, and procures, zero-carbon energy resources that comply with the requirements of the Green New Deal as well as enhances regional transmission infrastructure.

The LADWP conveyed that an extension request for Scattergood is needed to ensure local grid reliability for several reasons. The LADWP BAA was constructed around its OTC facilities, such that it is relatively isolated from other BAA's in the state. This limitation prevents the LADWP from importing quantities of energy from nearby BAA's, such as the CAISO's, that would be required to maintain grid reliability in the western and southern portions of the local BAA. Therefore, the LADWP-owned and operated OTC

facilities, including Scattergood, have historically played a vital role in supplying electricity to the local BAA.

Importantly, the OTC facilities in the LADWP's jurisdiction play a critical role in maintaining minimum required power reserves established by the North American Electric Reliability Corporation (NERC). Local facilities like Scattergood provide a source of power that offloads important transmission circuits and enhances regional system stability through voltage support. Additionally, Scattergood is designated as a Reliability-Must-Run facility by the NERC, meaning its contribution to the BAA is necessary to meet NERC standards and prevent power disruptions. For these reasons, regional OTC facilities like Scattergood cannot be retired until their capacity is replaced.

To comply with the Green New Deal while also maintaining local grid reliability, the LADWP has initiated a two-fold project that involves not only upgrading local and regional transmission infrastructure but also procuring zero-carbon resources that can replace local OTC facilities' capacity. LADWP indicates that the latter is complicated by the fact that these resources must be confined to each OTC facility's existing physical footprint due to spatial restrictions, as indicated by the LADWP. Each component of this undertaking is a significant infrastructure project that will likely require years of planning, permitting, procurement, and construction.

At present, the LADWP has indicated it is redeveloping its Power Strategic Long-Term Resource Plan to identify the actions needed to maintain local grid reliability while also meeting NERC requirements and the goals of the Green New Deal. This Plan will outline the concrete steps required to replace Scattergood's capacity, and it is anticipated for release to the public in the fourth quarter of 2022.

For the above reasons, the LADWP Board of Commissioners has authorized requesting an extension for Scattergood through December 31, 2029. This request would align Scattergood's OTC Policy compliance date with the compliance dates of the other OTC facilities in the LADWP BAA, Harbor and Haynes generating stations, which would provide adequate time for the agency to meet the goals of the Green New Deal, while also maintaining local grid reliability in the interim period.

The SACCWIS may reconvene in 2022 to consider this request and provide a recommendation to the State Water Board based on the supporting information provided by the LADWP.

IV. Local Air District Permitting and Rulemaking Activity Affecting Power Plants

In accordance with its 2016 Air Quality Management Plan, the South Coast Air Quality Management District (SCAQMD) has been working to transition from its local market-based pollutant trading Regional Clean Air Incentives Market (RECLAIM) program back to source-specific command-and-control rules that reflect Best Available Retrofit Control Technology (BARCT). All of the OTC facilities in SCAQMD participate in RECLAIM.³¹

SCAQMD Rule 1135 applies to RECLAIM oxides of nitrogen (NOx)³², former RECLAIM NOx, and non-RECLAIM NOx electric generating facilities that are investor-owned electric utilities, publicly-owned electric utilities, or have a generation capacity of at least 50 MW. Amendments to Rule 1135 were adopted in 2018 to reflect BARCT for NOx. The rule exempted OTC facilities from the BARCT standards through their OTC Policy compliance dates, including approved extensions, as long as the generating units retain their NOx and ammonia limits, startup, shutdown, and tuning requirements, and pollutant averaging times in the current permits and the units comply with their compliance dates established in Table 1 of Section 2(B) of the OTC Policy. This exemption was included in consideration of the fact that OTC units were scheduled for shut down or retirement by the dates in the OTC Policy.

On January 7, 2022, SCAQMD adopted amendments to Rule 1135, along with a new companion Rule 429.2, primarily for alignment with U.S. EPA's policies for startup, shutdown, and malfunction events; to update monitoring, recordkeeping, and reporting requirements; and to remove ammonia limits that will be addressed through the permitting process. At the same time, modifications were made to the Rule 1135 OTC BARCT

³¹ Includes AES's Alamitos, Huntington Beach, and Redondo Beach Generating Stations, and LADWP's Harbor, Haynes, and Scattergood Generating Stations.

³² NOx are a group of gases that form when nitrogen reacts with oxygen during combustion, especially at high temperatures. These compounds contribute to air pollution.

exemption to clarify that it only applies to OTC units that will be retired by the OTC Policy compliance date. An owner or operator that removes the OTC system to comply with the OTC Policy, but continues to operate the units, will be expected to comply with Rule 1135 NOx emission limits. Rule 429.2 also exempts OTC units that will be retired by the OTC Policy compliance date from certain provisions (startup and shutdown duration limits, limits to the number of scheduled startups, and installing a temperature device). The exemption provisions in both rules sunset on December 31, 2029, in order to limit the amount of time that these units are allowed to operate with NOx emissions greater than the Rule 1135 BARCT emission standards, as well as limit emissions from startup and shutdown.

Presently, emission offset requirements for OTC facilities undergoing repower are satisfied through access to SCAQMD's internal offset bank on a fee basis through provisions in Rules 1304 and 1304.1. Although RECLAIM program transition work is ongoing, SCAQMD currently does not have plans to change the eligibility of these plants' access to the internal offset bank, and to date U.S. EPA has not requested any changes with respect to power plants.

V. Review of Generating Facility Compliance Dates

This section focuses on generating facilities in the CAISO's BAA, including: Ormond Beach, Huntington Beach, Alamitos, and Redondo Beach. These four OTC facilities are addressed in detail because of their relation to OTC Policy amendments adopted by the State Water Board in 2020 and 2021 intended to maintain statewide grid reliability.³³

Ormond Beach

Ormond Beach consists of two steam boiler units using once-through cooling with a combined capacity of 1,491 MW. An October 9, 2014 settlement agreement between the State Water Board and NRG, the owner and operator of Ormond Beach, determined

³³ The State Water Board most recently amended the OTC Policy under Resolutions No. 2021-0048 and 2020-0029. Resolution No. 2020-0029 is available on the [State Water Board's website](#); Resolution No. 2021-0048 is not yet available online but is available upon request. Please see the [Ocean Standards Unit's webpage](#) for additional details.

Track 1 to be infeasible. NRG confirmed its intent to retire the facility by its OTC Policy compliance date in its implementation plan update sent to the State Water Board on January 19, 2018. On February 28, 2018, NRG notified the CPUC of its intention to shut down and retire Ormond Beach by October 1, 2018.

However, on September 28, 2018, NRG sent a letter to the CAISO to withdraw the earlier shutdown notice to meet local area reliability needs in 2019 pursuant to CPUC D.18-06-030. The CAISO's 2019 Local Capacity Technical Analysis Final Report (released May 15, 2018) identified that at least one Ormond Beach unit was needed to meet local capacity requirements, and this need could not be addressed with other alternatives in time to meet the 2019 calendar year. As a result, CPUC D.18-06-030 required SCE to attempt to sign a contract with NRG for power from Ormond Beach for 2019 and 2020 to meet local capacity requirements. SCE filed an Advice Letter with the CPUC on September 4, 2018, seeking approval of a contract with NRG for power from Ormond Beach Unit 2 from January 1, 2019, through November 30, 2019; this contract was approved by the CPUC on September 26, 2018. On November 5, 2018, SCE filed another Advice Letter seeking approval of a contract with Ormond Beach Unit 2 from December 1, 2019, through December 31, 2020. This contract was approved by the CPUC on March 28, 2019, in Resolution E-4986. Based on the CPUC's decision D.19-11-016, the SACCWIS published a final report on January 23, 2020, recommending an extension of Ormond Beach's compliance date by three years. On August 27, 2020, the CPUC issued Resolution E-5099, which approved a contract with SCE for Ormond Beach Units 1 and 2 through 2023; this contract is currently still in effect and allows Ormond Beach to provide resource adequacy capacity to SCE through the effective period of the contract. On September 1, 2020, the State Water Board amended the OTC Policy, which extended the compliance date for Ormond Beach Units 1 and 2 until December 31, 2023. The National Pollutant Discharge Elimination System (NPDES) permit for this facility was amended to reflect this change, effective January 1, 2021.

At this time, the SACCWIS does not recommend a change in compliance dates for Ormond Beach.

Huntington Beach

Huntington Beach consists of four units. Huntington Beach Units 3 and 4 retired on October 31, 2012, and were converted to synchronous condensers to provide voltage support in 2013. The synchronous condensers ceased the use of once-through cooling and permanently retired in September 2018. Unit 1 ceased the use of once-through cooling and retired on December 31, 2019. Unit 2 uses once-through cooling and has a capacity of 226 MW.

The Huntington Beach PTA was approved by the CEC on April 12, 2017. AES, the owner and operator of Huntington Beach, submitted an application for a 939 MW CCGT power plant, which was approved by the CEC on October 29, 2014. Subsequently, AES was selected for a Power Purchase Agreement (PPA) for a 644 MW power plant by SCE for the Huntington Beach facility, with different equipment configurations than had been approved by the CEC. The CPUC approved SCE's procurement selection of the Huntington Beach repowering project for the Western Los Angeles Basin local capacity needs per D.15-11-041 at the November 19, 2015 CPUC voting meeting. On September 14, 2015, AES submitted a PTA for an 844 MW power plant, comprised of a 644MW CCGT in phase 1 and a 200 MW Single Cycle Gas Turbine (SCGT) in phase 2. The CEC approved the revised project on April 12, 2017.

Huntington Beach was awarded a PPA for 644 MW capacity with an initial date of May 1, 2020. This required the shutdown of one Huntington Beach unit prior to the OTC Policy compliance date due to limited interconnection capacity and to satisfy the SCAQMD rules for new emission sources. Huntington Beach Unit 1 complied with the OTC Policy on December 31, 2019, and the 644 MW CCGT began commercial operation in May 2020. AES does not plan to retrofit any of the existing units with alternate cooling technologies to comply with Track 1 or use any operational or technical measures to comply with Track 2. AES confirmed that the PTC from SCAQMD for the phase 2 SCGT has been canceled. As a result, any plans to move forward with that project would require submittal of a new application for a PTC to SCAQMD and would be subject to New Source Review requirements and will require the Best Available Control Technology.

In its 2020-2021 transmission planning process reliability studies, the CAISO modeled the new 644 MW Huntington Beach repowering to replace the Huntington Beach generating facility after 2020.

In its November 4, 2021 implementation plan update to the State Water Board, AES confirmed its intention to comply with the OTC Policy compliance dates for the Huntington Beach unit that uses once-through cooling. A PPA has been executed with a non-utility load serving entity that extended the operation of Huntington Beach Unit 2 through December 31, 2023. Units 1, 3, and 4 have shut down to enable the new CCGT at Huntington Beach to be placed in service. The Huntington Beach Phase 1 CCGT completed construction and began commercial operations as of February 4, 2020. The PTC from the SCAQMD for Phase 2, 200 MW simple cycle gas turbines has been canceled. 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.

At this time, the SACCWIS does not recommend a change in compliance dates for Huntington Beach.

Alamitos

Alamitos consists of six units using once-through cooling. The total capacity of these units is approximately 2,000 MW. In its November 4, 2021 update to its implementation plan, AES confirmed its intention to comply with the OTC compliance dates for the Alamitos units that use once-through cooling through Track 1 by shutting down and permanently retiring these units.

On December 27, 2013, AES filed an AFC with the CEC to repower the facility with four 3-on-1 CCGTs with a net generating capacity of 1,936 MW. On October 26, 2015, AES submitted a Supplemental AFC, replacing the prior application, for a 1,040 MW power plant, comprised of a 640 MW CCGT in phase 1 and a 400 MW SCGT in phase 2. The CEC approved the project on April 12, 2017.

Alamitos was awarded a PPA for 640 MW of CCGT and 100 MW of energy storage capacity, and commercial operation began on June 1, 2020, and January 1, 2021,

respectively. AES continues to pursue contracts and approvals for the additional 200 MW of storage. In its November 4, 2021, update to the State Water Board, AES stated the PTC for the Phase 2 SCGT at Alamitos has been canceled. As a result, any plans to move forward with that project would require submittal of a new application for PTC to the SCAQMD and would be subject to New Source Review requirements and will require the Best Available Control Technology.

Alamitos units 1, 2, and 6 retired on December 31, 2019, to provide emission offsets for the new 640 MW CCGT, which began commercial operations as of February 4, 2020. AES does not plan to retrofit any of the existing units with alternate cooling technologies to comply with Track 1 or use any operational or technical measures to comply with Track 2. A resource adequacy contract has been executed with SCE that extended the operation of Alamitos Units 3, 4, and 5 through December 31, 2023. The contract received final approval from the CPUC on August 27, 2020.³⁴ On September 1, 2020, the OTC Policy was amended to continue the operations of Alamitos Units 3, 4, and 5 until December 31, 2023. The NPDES Permit was amended and Time Schedule Order (TSO) approved to reflect this change, effective January 1, 2021. Additionally, the San Gabriel River Metals Total Maximum Daily Load was amended and a contract with SCE was approved to allow for continued operation of Alamitos Units 3, 4, or 5 until their compliance date of December 31, 2023 (see Resolution E-5098).³⁵

In its 2020-2021 transmission planning studies, the CAISO modeled the new 640 MW Alamitos Energy Center to replace generation from Alamitos OTC units after 2020. At this time, the SACCWIS does not recommend a change in compliance dates for Alamitos.

Redondo Beach

Redondo Beach consists of four units using once-through cooling. The total capacity of these units is approximately 1,300 MW. In its November 4, 2021, update to their implementation plan, AES reaffirmed its intent to comply with Track 1 of the OTC Policy

³⁴ The resource adequacy contracts for the Alamitos units received CPUC approval on September 28, 2017.

³⁵ CPUC Resolution E-5098 is available on the [CPUC's website](#).

and to shut down and permanently retire all units at Redondo Beach per the compliance dates included in the OTC Policy.

Unit 7 was shut down on September 30, 2019, in advance of the OTC Policy compliance date to accommodate the provision of SCAQMD Rule 1304(a)(2) for offset exemptions for the new Huntington Beach CCGT. Redondo Beach has executed PPAs with 16 non-utility load serving entities for Units 5, 6 and 8 through December 31, 2021.

In 2013, AES proposed to repower Redondo Beach to comply with the OTC Policy. The proposed repowering project was a natural-gas fired, combined-cycle, air-cooled electrical generating facility with a net generating capacity of 496 MW. As detailed later in this report, AES' AFC at the CEC is suspended. After AES proposed alternative land use of the site, the CEC suspended the application on September 2, 2014. A subsequent ballot initiative with the City of Redondo Beach to rezone the property to allow commercial and residential usage occurred on March 3, 2015. However, the voters of the City of Redondo Beach rejected the ballot initiative to redevelop the property, resulting in AES resuming permitting efforts to repower the facility.

On November 6, 2015, AES and the City of Redondo Beach filed a petition with the CEC requesting that the AFC proceeding be suspended until August 1, 2016. On November 25, 2015, the CEC suspended the proceedings, but stated that the suspension would remain in place until the applicant or another party made a motion to reopen the proceeding and the CEC granted the requested reopening. In early 2016, AES placed the Redondo Beach and its 51-acre site on the commercial real estate market. On August 12, 2016, AES and the City of Redondo Beach submitted a notice of agreement to continue the suspension until February 1, 2017. On March 30, 2020, AES closed on the sale of the Redondo Beach site, and AES withdrew the AFC on April 7, 2020.

On September 1, 2020, the OTC Policy was amended to continue the operations of Redondo Beach Units 5, 6, and 8 until December 31, 2021. The NPDES Permit was amended and TSO approved, effective January 1, 2021.

Previously, the CPUC, CAISO, and CEC indicated that another request for extending Redondo Beach’s compliance date may be necessary depending on the pace and success of incremental procurement authorized by the CPUC. Additionally, in amending the OTC Policy on September 1, 2020, the State Water Board recognized in finding twenty of the adopting resolution (Resolution No. 2020-0029) that the CPUC, CAISO, and CEC may be revising their forecasting models to account for unexpectedly high peak energy demands during widespread extreme high temperatures, and may determine that there is a need to request additional extensions of compliance dates to maintain grid reliability and avoid rolling blackouts in the future.³⁶

Finding 20 of Resolution No. 2020-0029 was based on a prolonged and extreme heat wave that impacted swaths of the western United States and ultimately required the CAISO to initiate rotating outages in its BAA to prevent wide-spread service interruptions. Following this event, Governor Gavin Newsom ordered the development of the Final Root Cause Analysis Report, which identified the causes of the blackouts that occurred in August 2020 and directed the CPUC, CEC, and CAISO to take actions to reduce similar occurrences in the future. Based on this directive, the CPUC, CEC, and CAISO subsequently conducted a stack analysis that identified shortfalls in summer 2022 during similar weather conditions that caused the August 2020 blackouts. The CPUC, CEC, and CAISO also identified critical uncertainties associated with energy supply and demand that warranted additional capacity in summer 2023.

Therefore, on October 19, 2021, the OTC Policy was amended to continue the operations of Redondo Beach Units 5, 6, and 8 until December 31, 2023, to reduce system-wide grid reliability concerns.³⁷ The Los Angeles Regional Water Quality Control Board (“Los Angeles Regional Water Board”) administratively extended the facility’s NPDES permit on April 29, 2021, to accommodate this extension. The Los Angeles Regional Water Board considered, but voted not to approve, the revised TSO for Redondo Beach on

³⁶ State Water Board Resolution No. 2020-0029 is available on the [State Water Board’s website](#).

³⁷ See discussion of system-wide grid reliability concerns at: Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS), [Final 2021 Report of the Statewide Advisory Committee on Cooling Water Intake Structures](#), March 26, 2021.

December 9, 2021. However, this action does not prohibit Redondo Beach from operating through December 31, 2023. On December 16, 2021, the CPUC approved two resource adequacy PPAs between SCE and AES Redondo Beach for Units 5 and 6 for the period of April 1, 2022, through December 31, 2022, to meet SCE's system, LA Basin local, and flexible resource adequacy requirements.³⁸

At this time, the SACCWIS does not recommend a change in compliance dates for Redondo Beach.

VI. Conclusions

Currently, the SACCWIS does not recommend any changes to the compliance schedules in the OTC Policy for associated generating facilities. However, SACCWIS members continue to assess reliability impacts to the electric grid in connection with implementation of the OTC Policy.

The CPUC has authorized new electric resources under D.19-11-016 and D.21-06-035 to replace a portion of the OTC fleet's capacity subject to the OTC Policy. The CPUC continues to actively monitor procurement under these decisions, reporting that 2,650 MW of incremental capacity has come online as of January 2022. Additionally, the CPUC currently estimates that 12,700 MW of additional resources will be online by 2026.

Additionally, the status of Scattergood is being actively monitored given the recent adoption of the Local Capacity Technical Report by the LADWP. The SACCWIS may reconvene in 2022 to consider the extension request for Scattergood and supporting information provided from the LADWP to provide a recommendation to the State Water Board.

³⁸ See CPUC Resolution E-5173.

APPENDIX A

AVERAGE ANNUAL FLOW RATE DATA FOR ONCE-THROUGH COOLING FACILITIES

Power Plant Name	Average Annual Flow Rate (MGD)								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Humboldt Bay Power Plant Units 1&2	0	0	0	0	0	0	0	0	0
Potrero Power Plant	152	0	0	0	0	0	0	0	0
Contra Costa Generating Station	15.4	33	53	17	0	0	0	0	0
Pittsburg Power Plant	18.8	16.9	79	48.8	26	67	32	0.07	0
Moss Landing Power Plant	289.9	212.3	396.4	353.6	244.9	312.5	231	135.2	200.3
Diablo Canyon Nuclear Power Plant	2,347	2,368	2,277	2,311	2,242	2,360	2,372	2,286.4	2,338
Morro Bay Power Plant	21.5	41.7	50.2	22.7	0.2	0	0	0	0
El Segundo Generating Station	112.9	97	197	217	107	135	7	4.58	0
Haynes Generating Station Units 1&2	720	812	886	725	471	506	448	355.5	441
Scattergood Generating Station	276.4	299	296.8	272	244	311	151	109.8	108
Harbor Generating Station	45.5	44.0	47.3	46.8	49.6	49.1	47	50.07	46
Alamitos Generating Station	2.9	106	375	496	332	324	317	316.21	114.74*
Redondo Beach Generating Station	59	180	178	95	107	142	95	156.95	75.3*
Mandalay Generating Station	39.7	56	77	109	63	78	56	48.4	3
Ormond Beach Generating Station	12	18	71	133	68	98	60	86.6	117.9
Huntington Beach Generating Station	202.9	242.6	238.5	178	169	159.6	134	134.2	114.5
South Bay Power Plant	34.5	0	0	0	0	0	0	0	0

	Average Annual Flow Rate (MGD)								
Power Plant Name	2010	2011	2012	2013	2014	2015	2016	2017	2018
Encina Power Station	211.9	314.5	531.1	264.0	338.6	410.2	325	387.8	356.1
San Onofre Nuclear Generating Station	2,030	2,256	1,677	1,003	42	42	37	0	0
Total	6,592.3	7,097	7,430.3	6,291.9	4,504.3	4,994.4	4,312	4,071.8	3,915.9

Source: EPA Flow Data, (Intergraded Compliance Information System [ICIS] Database) Julie Johnson and Jonathan Dolan. Updated on February 16, 2022.

*Previous 2018 values for Alamitos and Redondo Beach Generating Stations were not calculated properly. These values have been updated and are now displayed correctly.

**AVERAGE ANNUAL FLOW RATE DATA FOR ONCE-THROUGH COOLING FACILITIES
(CONTINUED)**

Power Plant Name	Average Annual Flow Rate (MGD)		
	2019	2020	2021
Humboldt Bay Power Plant Units 1&2	0	0	0
Potrero Power Plant	0	0	0
Contra Costa Generating Station	0	0	0
Pittsburg Power Plant	0	0	0
Moss Landing Power Plant	236.2	241.2	241.7
Diablo Canyon Nuclear Power Plant	2,067	2,282	2,212
Morro Bay Power Plant	0	0	0
El Segundo Generating Station	0	0	0
Haynes Generating Station Units 1&2	398.7	467.0	472.0
Scattergood Generating Station	98.1	124.0	92.0
Harbor Generating Station	48.1	45.0	49.0
Alamitos Generating Station	101.8	126.7	126.0
Redondo Beach Generating Station	72.4	80.2	60.3
Mandalay Generating Station	0	0	0
Ormond Beach Generating Station	146.9	227.5	250.6

	Average Annual Flow Rate (MGD)		
Power Plant Name	2019	2020	2021
Huntington Beach Generating Station	113.4	82.1	68.3
South Bay Power Plant	0	0	0
Encina Power Station	262.1	0	0
San Onofre Nuclear Generating Station	0	0	0
Total	3,545	3,814	3,572.6

Source: EPA Flow Data, (Intergraded Compliance Information System [ICIS] Database) Jonathan Dolan. Updated on February 16, 2022.