Progress Report

Electricity Supply Reliability Reserve Fund

August 2023

Department of Water Resources acknowledges the efforts and contributions made by leadership and staff members.

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I. Background

California is transitioning to a one hundred clean electricity future and leading the nation in electrification, and at the same time climate change-induced extreme weather and emergencies are negatively impacting electric grid reliability. For example, a massive heatwave across the western United States led to planned rotating power outages in 2020 while the devastating Bootleg Fire in 2021 threatened electric transmission lines and significantly reduced power imported into California. During both events California Governor Gavin Newsom issued executive orders to take decisive actions to shore up electric grid reliability. On July 30, 2021, Governor Newsom signed the Energy Emergency Proclamation which directed the Department of Water Resources (DWR), in collaboration with the California Energy Commission (CEC) to secure and deploy temporary and emergency power generation to supplement existing electric grid resources. In May 2022, analysis by the CEC, California Public Utilities Commission (CPUC), and the California Independent System Operator (CAISO) found that additional electric generating resources were needed to address a number of extraordinary factors such as extreme weather events, massive wildfires, severe drought, and supply chain constraints delaying new clean electric generation deployment. As described in detail below, this analysis and other factors led to a series of legislative actions that once again called upon DWR, with its expertise as one of the largest power producers in California and prior experience with procuring power and deploying emergency power generators, to play a critical role in safeguarding the state by securing energy resources to address extreme events.

In June 2022, Assembly Bill (AB) 205 (Committee on Budget, Chapter 61, Statutes of 2022), AB 178 (Ting, Chapter 56, Statutes of 2022), and AB 180 (Ting, Chapter 44, Statutes of 2021) were signed into law by Governor Newsom. These three pieces of legislation collectively established the Strategic Reliability Reserve (SRR), which provides funding to secure additional resources to address extreme events above and beyond traditional resource planning and procurement such as the Resource Adequacy program. The SRR includes three distinct programs, two of which are administrated by the CEC and one by DWR. CEC's Demand Side Grid Support (DSGS) program provides incentives to reduce customer net energy load during extreme events and the Distributed Electricity Backup Assets

(DEBA) program incentivizes the construction of cleaner and more efficient distributed energy assets that would serve as on-call emergency supply or load reduction for the state's electrical grid during extreme events. DWR's Electricity Supply Strategic Reliability Reserve Program (ESSRRP) can contract for and/or construct new supply-side assets, extend the operating life of resources planned for retirement, and reimburse the above-market cost for imports beyond Resource Adequacy requirements.

AB 205 added Division 29 to the Water Code, creating the ESSRRP, with funding from the Electricity Supply Reliability Reserve Fund (ESRRF) through the California State General Fund. The Water Code makes clear the powers, responsibilities, and funding established under Division 29 are separate and distinct from those for the State Water Project (Water Code Section 80700(b), 80711, 80720).

Pursuant to California Water Code Section 80700, DWR promptly deployed resources to carry out the objectives set forth in AB 205, focusing on supporting the ESSRRP. DWR created a new Deputy Director-level division consisting of 25 people in support of the implementation of AB 178, AB 180, and AB 205. DWR's Deputy Director of Statewide Water and Energy oversees the Electricity Supply and Strategic Reserve Office, overseeing both the new ESRRF/ESSRRP and the previous State Power Augmentation Program (SPAP) which was developed in response to Governor Newsom's July 30, 2021 Energy Emergency Proclamation[1] to quickly deploy 120 Megawatts (MW) of new electric generation in 2021 to be available for extreme heat events, wildfires, or any other climate-driven energy emergencies.

One of DWR's responsibilities includes cross-coordination between DWR, CEC, California Air Resources Board (CARB), CPUC, the CAISO and other California balancing authorities as applicable through regular meetings and communication. Other responsibilities include conducting technical research and prioritizing projects, connecting new reliable energy resources to the electric grid (including renewable and zero-carbon emitting technologies), managing the authority to construct, own and/or operate, provide site management and maintenance of emergency and temporary electricity projects, and contracting or financing through loans or reimbursement agreements for reliability resources which may include imported energy or imported capacity products. Because of the immediate effect of this legislation and the urgency of these activities to achieve summer electric grid reliability

[1] Proclamation of a State of Emergency (July 30, 2021), available at https://www.gov.ca.gov/wp-content/uploads/2021/06/6.17.21-Extreme-Heat-proclamation.pdf.

and maintain an affordable and equitable transition to a clean, reliable California electric grid, DWR began implementation steps immediately.

Water Code Section 80730 and Public Resources Code Section 25795 require DWR to issue a written report to the Joint Legislative Budget Committee detailing actions undertaken by ESSRRP and funded by the ESRRF. The actions carried out pursuant to the applicable Water Code and Public Resources Code Sections are in all respects for the welfare and the benefit of the people of the state, to protect public peace, health, and safety, and constitutes an essential governmental purpose.

A. Reporting Period

Water Code Section 80730 requires DWR to submit regular progress reports for the ESRRF to the Joint Legislative Budget Committee, due January 31, 2023, and then every May 1, August 1, and December 1 thereafter. Such reports shall include:

(a) Amount of funds expended;

(b) Purpose of funds expended;

(c) Status of actions funded;

(d) For new and expanded resources, the amount by megawatt, resource type, operational date, and expected lifetime of that capacity;

(e) The frequency at which resources funded by DWR have been used and the extent to which they complied with the requirements;

(f) In consultation with the CARB, estimate or provide the best available information on the emissions of greenhouse gases, criteria air pollutants, and toxic air contaminants emitted by the resources funded by DWR over the period since the previous report; and

(g) Summary of contracts, grants, and loans issued.

The August 2023 report details actions undertaken by DWR and funded by the ESRRF from May 1, 2023 through June 30, 2023.

II. Introduction

DWR acts as an electric grid reliability backstop for the state of California by procuring and providing incremental power during extreme events. This role is necessary as California transitions to a clean energy future and contends with increasing climate change-driven impacts and other electric grid reliability challenges. Through the ESRRF, the ESSRO manages the ESSRRP in support of improving California's electric grid reliability, increasing customer bill affordability, and accelerating the deployment of energy resources needed to achieve California's clean energy transition. This progress report is structured to align with each category of authorized work under the ESSRRP, pursuant to Water Code Section 80710.

The following agreement and program status changes have occurred since the May 2023 report for the current reporting period (May 1, 2023, through June 30, 2023):

- Summer 2023 Imported Firm Energy Agreements
    - New legislative action provides DWR with the funding and authority to oversee a 2023 program up through October 31, 2023. Since this is new authorization, information on this program will be provided in a subsequent report.
- New Historical Activities section added to retain documentation of programs that have closed and will no longer be updated.

Table 1 below summarizes the disbursements for current activities between May 1, 2023 through June 30, 2023.

Table 1*: *Current Activities Reporting Period Disbursement Summary

Project Category	Total Allocated Budget	Disbursed 5/1/23 – /30/23	Total Disbursed
Contracted Program Support, Professional and Technical Services, and Equipment	$138,874,382	$543,893	$7,296,948
Summer 2023 Imported Firm Energy	$100,000,000	$0	$0
State Power Augmentation Program (SPAP) – Emergency & Temporary Power Generators > 5 MW	$211,506,080	$4,781,924	$180,147,826
Summer 2023 – 2027 – Emergency & Temporary Power Generators > 5 MW	$285,271,764	$27,934,208	$144,093,684
Extended Operations of Retiring Facilities	$1,290,427,064	$212,341	$811,623
Total	**$2,026,079,290**	**$33,472,366**	**$332,350,081**

In addition to current activities, Table 2 below summarizes total disbursements for historical activities that have closed.

Table 2: Historical Activities Total Disbursement Summary

Project Category	Total Disbursed
Summer 2022 Imported Firm Energy	$74,206,554
Summer 2022 – Emergency & Temporary Power Generators > 5 MW	$11,388,381
Total	**$85,594,935**

Details of each change and an overview of each project category are provided in the Current Project Activities and Historical Project Activities sections below.

III. Current Project Activities

A. Contracted Program Support, Professional and Technical Services, and Equipment

DWR entered into agreements to secure professional program and project management, construction and commissioning expertise, and other related technical services. These services were immediately needed to secure and determine technology and site feasibility, program management, site management, and to meet the deadlines set forth in statute, beginning with Water Code Section 80710. To maintain distinct and separate agreements from the State Water Project, it was critical to obtain and secure these agreements for work under the ESSRRP funded by the ESRRF. Table 3 below provides a listing of each agreement's start and end dates, the planned budget, disbursed funds prior to May 1, 2023, amounts disbursed this reporting period (May 1, 2023 through June 30, 2023), and the total cumulative disbursed amounts.[2] The agreements listed below support multiple objectives and efforts under the ESSRRP.

The Bureau Veritas North America, Inc (Bureau Veritas) agreement provides quality control & quality assurance inspection services for the manufacturing, procurement, design, installation/construction, and repair/refurbishment of equipment and materials in accordance with contract requirements. The Dudek Environmental (Dudek) task order includes environmental studies, surveying, environmental analysis, tribal consultation, and all filings with the local air pollution control districts to support new project development. The Kiewit Power Constructors, Co. agreements provide design, construction and commissioning expertise, and other related technical services. The Stantec Consulting Services, Inc. and Ulteig Engineers, Inc. agreements support engineering, professional and technical program and project management services.

[2] The previous General Electric procurement contract has been rescinded. DWR is currently in discussion with General Electric regarding this procurement and will provide further update in a subsequent report.

Table 3: Contracted Program Support, Professional and Technical Services, and Equipment

Counterparty	Agreement Start Date	Agreement End Date	Allocated Budget	Disbursed prior to 5/1/23	Disbursed 5/1/23 – 6/30/23	Total Disbursed
Bureau Veritas	02/01/2023	02/05/2026	$6,000,000	$0	$7,752	$7,752
Dudek	10/14/2022	01/31/2024	$874,382	$321,096	$0	$321,096
Kiewit Power Constructors, Co.	10/15/2022	06/30/2027	$120,000,000	$5,840,353	$474,270	$6,314,623
Stantec Consulting Services, Inc.	07/29/2022	06/30/2027	$6,000,000	$222,666	$0	$222,666
Ulteig Engineers, Inc.	07/01/2022	06/30/2027	$6,000,000	$341,940	$61,871	$403,811
Total			**$138,874,382**	**$6,726,055**	**$543,893**	**$7,269,948**

B. State Power Augmentation Program (SPAP)

In accordance with the Governor's Energy Emergency Proclamation issued July 30, 2021,[3] DWR, CEC, and CAISO partnered together to deploy temporary power generators by September 2021 under the State Power Augmentation Program (SPAP), as shown in Table 4 below. The SPAP is part of California's broader effort to safeguard the state's electric grid challenged by climate change-induced drought, wildfires, heat waves, and other extreme events. DWR collaborated with the CEC and CAISO procure, install, and license four temporary natural gas fueled electric generators totaling 120 MW, at existing electric generation sites located in Roseville (two units) and Yuba City (two units). Each SPAP unit is powered by natural gas with the capability of running on a blend of up to 75 percent hydrogen in the future depending on the availability of hydrogen fuel. The SPAP units are placed at existing electric generation sites to feed directly into the electric grid as needed and at the direction of the CAISO. The SPAP units were operational on September 22, 2021, and directly supported California's electric grid during the September 2022 extreme heat event. The current agreements allow the units to remain available for operation until the end of 2023. DWR is currently in negotiations with both facility operators to determine the feasibility of extending operations of both

[3] Proclamation of a State of Emergency (July 30, 2021), available at https://www.gov.ca.gov/wp-content/uploads/2021/06/6.17.21-Extreme-Heat-proclamation.pdf.

sites—Calpine Greenleaf 1 and Roseville Energy Park—in order to retain the 120 MW of capacity within the ESSRRP portfolio.

Table 4: State Power Augmentation Program

Site	MW	Allocated Budget	Disbursed prior to 5/1/23	Disbursed 5/1/23 – 6/30/23	Total Disbursed
Roseville Energy Park	60.0	$104,522,494	$ 88,424,736	$83,341	$88,508,077
Calpine Greenleaf 1	60.0	$106,983,586	$86,941,166	$4,698,583	$91,639,749
Total:	**120.0**	**$211,506,080**	**$175,365,902**	**$4,781,924**	**$180,147,826**

1. SPAP Emissions

SPAP local air emissions during this reporting period are the result of necessary maintenance operations. Table 5 through Table 7 below were produced using the United States Environmental Protection Agency (US EPA) Emissions Collections and Monitoring Plan System (ECMPS), in consultation with CARB, per site.

Emissions data is reported on a quarterly basis; therefore the table below reflects the most recent quarterly reporting data of April 1, 2023 through June 30, 2023. Table 5 below reproduces this information for sulfur dioxide (SO_2), carbon dioxide (CO_2) and nitrogen oxides (NO_x) emissions. Table 6 provides the same emissions on a calendar year to date basis from January 1, 2023 through June 30, 2023. Table 7 provides the local air emissions data from July 1, 2022 through December 31, 2022. From May 1, 2023 through June 30, 2023, both units have operated only on a limited basis, supporting maintenance needs and summer readiness testing purposes.

Table 5: SPAP Emissions: Current Reporting Period (April 1, 2023 – June 30, 2023)

Site / Unit Name	Operating Time (hrs)	SO2 Mass (tons)	CO2 Mass (tons)	NOx Mass* (tons)
Calpine Greenleaf1 CTGA	17.5	0.0	293.4	0.0
Calpine Greenleaf1 CTGB	21.2	0.0	328.4	0.1
Roseville Energy Park CT005	5.6	0.0	76.1	0.0
Roseville Energy Park CT006	5.0	0.0	60.2	0.1
Total	**49.4**	**0.0**	**758.1**	**0.3**

Table 6: SPAP Emissions: Current Calendar Year to Date (January 1, 2023 – June 30, 2023

Site / Unit Name	Operating Time (hrs)	SO2 Mass (tons)	CO2 Mass (tons)	NOx Mass* (tons)
Calpine Greenleaf1 CTGA	21.2	0.0	357.4	0.0
Calpine Greenleaf1 CTGB	21.3	0.0	328.5	0.1
Roseville Energy Park CT005	14.9	0.0	245.1	0.0
Roseville Energy Park CT006	14.1	0.0	185.2	0.2
Total	**71.5**	**0.0**	**1116.2**	**0.4**

Table 7: SPAP Emissions for 2022 (July 1, 2022 – December 31, 2022)

Site/Unit Name	Operating Time (hrs)	SO2 Mass (tons)	CO2 Mass (tons)	NOx Mass* (tons)
Calpine Greenleaf1 CTGA	34.2	0.0	541.0	0.1
Calpine Greenleaf1 CTGB	39.6	0.0	2087.7	0.6
Roseville Energy Park CT005	18.3	0.0	243.0	0.6
Roseville Energy Park CT006	21.3	0.0	287.3	0.3
Total	**113.4**	**0.0**	**3159.0**	**1.6**

*NOx Mass (tons) values calculated with data obtained from US EPA ECMPS Client Tool Feedback Reports. All other data directly from the same reports that were deemed accepted/validated by the US EPA.

C. Summer 2023 – 2027 – Emergency & Temporary Power Generators > 5 MW

Under the authority provided in Water Code Section 80710(b)(1)(B), DWR executed three separate contracts with Enchanted Rock Electric, LLC (ERock), Wellhead Energy, LLC (Wellhead) and one letter agreement with Ares Panoche Holdings, LLC (Panoche) to secure emergency and temporary power generators for grid reliability during extreme events by September 2023, as shown in Table 8 below. Site studies, engineering design, equipment procurement activities, site certification, permitting, and project management activities began in Q4 2022 to meet the rigorous demands of the September 2023 schedule deadline. These electric generators are installed under the

authority of Water Code Section 80710(b)(1)(B) as new emergency resources and are permitted to operate until 2027 to support the electric grid during extreme events.

On October 27, 2022, due to the parties' inability to agree on acceptable commercial terms including cost parameters, DWR discontinued the Panoche negotiations before that 52 MW project commenced operation. On December 7, 2022, due to a change in site ownership, DWR could no longer pursue the Wellhead site for a 60 MW project in Goleta as viable under the ESSRRP. DWR will reimburse both Panoche and Wellhead for their respective reasonable incurred costs, as deemed acceptable under the agreements with those entities, but will no longer include the Panoche or the Wellhead Goleta site activities in future reports. Invoicing for these incurred costs began in early 2023 and the budget has been updated to reflect close-out estimates. As of May 31, 2023, the final invoice for Wellhead's incurred cost was closed out. The net total capacity after cancellations will add 143.5 MW to the California electric grid during extreme events.

As noted above in the discussion of *Contracted Program Support, Professional and Technical Services, and Equipment*, DWR voluntarily undertook environmental studies, surveying, environmental analysis, tribal consultation, and engagement with the local air pollution control districts to support the three new ERock projects. Environmental reports and findings for these projects are available on DWR's public website.[4] Moreover, ERock proprietary technology similar to those contracted by DWR has met CARB's Distributed Generation (DG) Certification Program requirements.[5] The DG Certification Program certifies electrical generation technologies that are exempt from the permit requirements of air pollution control or air quality management districts.

[4] "Environmental Documents" for the City of Lodi, Modesto Irrigation District, and Turlock Irrigation District are available at: https://water.ca.gov/Programs/Statewide-Water-and-Energy.
[5] California Air Resources Board. Executive Order DG-052. *Distributed Generation Certification of Enchanted Rock LLC NGE21.9L-CA Generator*. August 2021. https://ww2.arb.ca.gov/sites/default/files/2022-05/DG-052.pdf.

Table 8: Summer 2023 -2027 Emergency & Temporary Power Generators > 5 MW

Counterparty	Site Name	MW	Allocated Budget	Disbursed prior to 5/1/23	Disbursed 5/1/23 – 6/30/23	Total Disbursed
ERock	City of Lodi	48.0	$101,010,000	$35,084,336	$13,511,774	$48,596,110
	Modesto Irrigation District	48.0	$99,790,000	$46,111,907	$835,703	$46,947,610
	Turlock Irrigation District	47.5	$83,850,000	$34,690,071	$13,414,967	$48,105,038
Wellhead	Goleta	N/A	$171,764	$0	$171,764	$171,764
Panoche	Unicorn	N/A	$450,000	$273,162	$0	$273,162
Total		**143.5**	**$285,271,764**	**$116,159,476**	**$27,934,208**	**$144,093,684**

The sites have not been installed, commissioned, or operated. Therefore, there are no emissions to report for this reporting period.

D. Extended Operations of Retiring Facilities

Pursuant to AB 180, AB 178, and AB 205, DWR sought to fund, reimburse, or compensate the owners of electric generating facilities pending retirement for costs, expenses or financial commitments incurred to retain future availability. Table 9 below summarizes five such agreements executed to retain existing resources while load serving entities are actively pursuing clean energy resources, which are negatively affected by global supply chain and other delays, to meet traditional planning requirements.[6] In 2020, California State University Channel Islands (CSUCI) submitted a retirement notice to the CAISO but was ultimately retained by the CAISO to address local reliability needs.[7] Later in August 2022, the CAISO noted that the unit was no longer needed for local electric reliability.[8] Under the authority of Water Code Section 80710(b)(1)(A), DWR entered into an agreement with CSUCI to ensure the facility

[6] Kootstra, Mark, and Nathan Barcic (CPUC). 2023. Joint Agency Reliability Planning Assessment. California Energy Commission. Publication Number: CEC-200-2023-002

[7] Millar, Neil. California Independent System Operator. (2020, March 18). *Decision on reliability must-run designations for Greenleaf II Cogen, Channel Islands Power and E.F. Oxnard Incorporated.* https://www.caiso.com/Documents/Decision-ReliabilityMust-RunDesignations-Memo-Mar2020.pdf.

[8] Millar, Neil. California Independent System Operator. (2022, August 24). *Decision on conditional approval to extend existing reliability must-run contracts for 2023.* http://www.caiso.com/Documents/DecisiononConditionalApprovaltoExtendReliabilityMust-RunContracts-Memo-Aug2022.pdf.

remained online beginning January 1, 2023 until 2027. Through this agreement SW&E has retained 27.5 MW under the ESSRRP portfolio and has conducted, with its CSUCI and CAISO partners, a summer readiness test along with regular maintenance in preparation for supporting California's reliability needs in an extreme event.

The second agreement is with Pacific Gas & Electric (PG&E), the owner and operator of the Diablo Canyon Power Plant (DCPP), which is currently scheduled for decommissioning in 2024 and 2025. The agreement with PG&E allows for the procurement of fuel purchases, spent fuel management, and other costs necessary to maintain the option of extending DCPP past the current retirement dates for its two electric generation units. PG&E is actively procuring the aforementioned items and execution of applicable agreements is expected later in 2023.

On September 30, 2022, the Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) recommended to the State Water Resources Control Board (SWRCB) to extend the compliance date of a number of once-through cooling (OTC) natural gas fueled electric generation facilities from December 31, 2023 to December 31, 2026 in order to include these facilities in the ESSRRP portfolio.[9] Without SWRCB action, these resources with a combined capacity of 2,859.3 MW[10] would retire by December 31, 2023 in order to comply with OTC policy.[11] The SACCWIS, which includes the CAISO, CEC, and CPUC, recommended compliance extension for the following units: Alamitos Units 3, 4, and 5 (1,141.2 MW), Huntington Beach Unit 2 (226.8 MW), and Ormond Beach Units 1 and 2 (1,491.3 MW). The SACCWIS explained that "[e]nabling DWR to contract with existing resources will allow the state to address [electric grid] reliability concerns and populate the Strategic [Reliability] Reserve more expeditiously and with more certainty while it works to secure additional

[9] Statewide Advisory Committee on Cooling Water Intake Structures. (2022, September 30). 2022 Special Report. 2022 Special Report of the Statewide Advisory Committee on Cooling Water Intake Structures. http://www.swrcb.ca.gov/water_issues/programs/ocean/cwa316/saccwis/docs/drpt031912.pdf and Tesfai, Leuwam, et al. "Use of the Once-Through Cooling Power Plants in the Strategic Reserve." *www.caiso.com*, 30 Nov. 2022, http://www.caiso.com/Documents/Nov30-2022-JointLetter-CaliforniaStateWaterResourcesControlBoard-Use-Once-ThroughCoolingPowerPlants-StrategicReserve.pdf.

[10] Based on net qualifying capacity as determined by the CAISO.

[11] California State Water Resources Control Board. (2021, October 10). Amendment to the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling. https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/otc_policy_2021/otc_policy.pdf.

resources."[12] Furthermore, the CAISO, CEC, and CPUC clarified that resources would not be considered resource adequacy resources since that "would lead to increased use of once through cooling as well as increased air emissions, which AB 205 seeks to limit."[13] Instead, the OTC "resources will only be called upon to support grid operations during extreme events (including any maintenance or test events recommended by and coordinated with the CAISO)."[14] Extended operations under the ESSRRP will not begin until 2024 or later and are dependent upon SWRCB extension of the OTC permits. The SWRCB is expected to vote on this issue at its August 15 Board meeting.[15]

In the meantime, DWR has completed contract discussions and executed separate agreements with AES Alamitos LLC, AES Huntington Beach LLC, and Ormond Beach Power, LLC. SW&E staff collaborated with the CPUC, CEC, and CAISO staff to negotiate the agreements which added the OTC facilities to the ESSRRP portfolio for grid reliability during extreme events. These assets will provide 2,859.3 MW to support California's electric grid reliability as California is taking action to accelerate the deployment of clean energy infrastructure. Cost incurred for AES Alamitos LLC during this reporting period is related to capital expenditures for maximizing the availability and reducing maintenance of the

[12] Statewide Advisory Committee on Cooling Water Intake Structures. (2022, September 30). 2022 Special Report, Pg. 15. 2022 Special Report of the Statewide Advisory Committee on Cooling Water Intake Structures. http://www.swrcb.ca.gov/water_issues/programs/ocean/cwa316/saccwis/docs/drpt031912.pdf

[13] Tesfai, Leuwam, et al. "Use of the Once-Through Cooling Power Plants in the Strategic Reserve." www.caiso.com, 30 Nov. 2022, http://www.caiso.com/Documents/Nov30-2022-JointLetter-CaliforniaStateWaterResourcesControlBoard-Use-Once-ThroughCoolingPowerPlants-StrategicReserve.pdf.

[14] Tesfai, Leuwam, et al. "Use of the Once-Through Cooling Power Plants in the Strategic Reserve." www.caiso.com, 30 Nov. 2022, http://www.caiso.com/Documents/Nov30-2022-JointLetter-CaliforniaStateWaterResourcesControlBoard-Use-Once-ThroughCoolingPowerPlants-StrategicReserve.pdf.

[15] State Water Resources Control Board. (2023, June 30). Notice of Consideration of Adoption: Amendment to the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling. https://www.waterboards.ca.gov/board_info/calendar/docs/2023/notice-otc-063023.pdf.

facility which needs to be scheduled and completed ahead of the expected operation date.

Table 9: Extended Operations of Retiring Facilities

Counterparty	MW	Allocated Budget	Disbursed prior to 5/1/23	Disbursed 5/1/23 – 6/30/23	Total Disbursed
CSUCI	27.5	$23,000,000	$599,282	$177,693	$776,975
PG&E	-	$75,000,000	$0	$0	$0
AES - Alamitos	1,141.2	$528,616,081	$0	$0	$0
AES - Huntington Beach	226.8	$105,799,596	$0	$34,648	$34,648
GenON	1,491.3	$558,011,387	$0	$0	$0
Total	**2,886.8**	**$1,290,427,064**	**$599,282**	**$212,341**	**$811,623**

1. Extended Operations of Retiring Facilities Emissions

CSUCI has conducted operational maintenance and a summer readiness test at the direction of the CAISO during this reporting period; however, emissions data is available on a quarterly basis and will be provided in a subsequent report.

During this reporting period there are no emissions or pollutants to report for the OTC units because they cannot join the ESSRRP until January 1, 2024 subject to the SWRCB OTC compliance date extension and the DCPP is a nuclear power plant.

E. Summer 2023 – Imported Firm Energy

In June 2023, SB 101, Budget Act of 2023 (Skinner, Chapter 12, Statutes of 2023), approved the extension of DWR's authority pursuant to Water Code Section 80710, subdivision (b)(2), to enter into agreements for the reimbursement for the above market cost of imported energy and imported capacity products procured through October 31, 2023 to support electric service reliability. Since this is new authorization, information on this program will be provided in a subsequent report.

IV. Historical Project Activities

The project descriptions, expenditures, and emission details in this section consist of all activities funded by the ESRRF that have closed. DWR will continue the practice of moving closed projects and subsequent data in future reports to this section to maintain transparency and historical references.

A. Summer 2022 – Imported Firm Energy Agreements

Pursuant to California Water Code Section 80710, subdivision (b)(2), electrical corporations, as defined in Section 218 of the California Public Utilities Code, may seek reimbursement for the above market cost of imported energy and imported capacity products procured from July to September 2022 to support summer electric service reliability. DWR entered into agreements with Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas and Electric (SDG&E). All electric corporations contracted for imported Firm Energy[16] to support statewide summer 2022 electric service reliability and DWR provided reimbursement for the resulting above market costs, per legislation.

DWR has received all program invoices from each electrical corporation and disbursed final payments. SW&E staff confirmed, in consultation with CPUC staff, all contracted imported firm energy procured through these agreements were above the Resource Adequacy requirement for each electrical corporation set by the CPUC. The Summer 2022 Imported Firm Energy program secured a total of 3,349 MW of firm energy, which directly supported California's electric grid during the September 2022 heat wave event. SW&E staff have closed this program and reallocated remaining funding to the Extended Operation of Retiring Facilities program under the ESSRRP. The contract capacity, dollars allocated, and dollars dispersed are shown in Table 9 below, which includes adjustments based on CAISO's settlement true-up timeframe (*i.e.*, 70 business days after the trade date or T+70B).

[16] Imported firm energy (or firm energy imports) refers to energy contracted for delivery from one system to another which includes the transmission capacity necessary to successfully deliver the energy. In contrast, non-firm energy may be curtailed due to lack of transmission capacity. Firm energy contracts are widely used throughout the west such as Schedule C of the Western Systems Power Pool (WSPP) Agreement used to support these import transactions. MW totals reflect contracted amounts, which may be provided for less than a whole month or a whole day.

Table 10: Imported Firm Energy

Corporation	Contract capacity (MW)	Allocated Budget	Disbursed prior to 1/1/23	Disbursed 1/1/23 – 4/30/23	Total Disbursed
PG&E	991	$95,000,000	$42,048,677	($117,828)	$41,930,849
SCE	2,258	$50,000,000	$7,195,891	$22,758,391	$29,954,282
SDG&E	100	$5,000,000	$0	$2,321,423	$2,321,423
Total	**3,349**	**$150,000,000**	**$49,244,568**	**$24,961,987**	**$74,206,554**

1. Summer 2022 – Imported Firm Energy Emissions

Table 10 provides a listing of the MWs, MWhs, GHG emissions factor, and total GHG emissions in metric tons of carbon dioxide equivalent (MT CO2e) by month. The delivery period for the transactions was July 1, 2022 to September 30, 2022. The Imported Firm Energy emissions data has been aggregated to protect confidentiality, pursuant to the import agreements.

Approximately 47 percent of the generation (385,831 MWhs out of 820,668 MWh) from imported firm energy were from zero or low-emission resources as categorized by the CARB.[17] The remaining 53 percent (434,837 MWh) were from non-specified energy resources. This means that the seller of electricity does not provide information on the specific assets or asset types that are generating the electricity. Consequently, the emissions are based on CARB's default emissions rate—which is that of a single-cycle natural gas-fired power plant. The party responsible for paying the greenhouse gas (GHG) allowance is the entity that imports the energy to California. For the majority of the imported energy transactions, PG&E, SCE, and SDG&E took on the role of the importer and were responsible for the GHG allowance costs. There were some individual transactions where the seller of that product to PG&E, SCE, and SDG&E took on the role of the importer and in those cases the seller was responsible for paying the GHG allowance costs.

[17] As determined by the California Air Resources Board, an asset-controlling supplier has an assigned system emission factor for the wholesale electricity procured from its system and imported into California. This factor is small and thus the associated imports are categorized as having a low emissions factor in Table 10. https://ww2.arb.ca.gov/mrr-acs.

Table 11: Imported Firm Energy Emissions

Delivery Month in 2022	Contract capacity (MW)	Total generation (MWh)	GHG Emission Factor (MT CO2e / MWh)	Total GHG Emission (MT CO2e)	Total GHG Emission By Month (MT CO2e)
July	185	73,654	0.428	31,524	31,838
	250	118,705	Zero or low	314	
August	210	90,089	0.428	38,558	38,902
	250	120,081	Zero or low	344	
September	2,054	271,094	0.428	116,028	116,846
	400	147,045	Zero or low	818	
Total	**3,349**	**820,668**	**-**	**187,586**	**187,586**
Total emissions generation percentage calculation					
		434,837	0.428	(53% of total)	
		385,831	Zero or low	(47% of total)	

B. Summer 2022 – Emergency & Temporary Power Generators > 5 MW

Pursuant to Water Code Section 80710(b)(1)(B), DWR contracted with PG&E and SCE for a total of 82.4 MW of back-up diesel electric generating units that were installed and operational by September 1, 2022. PG&E and SCE were critical partners for DWR in this urgent effort. PG&E and SCE leveraged their expertise and procurement reach to secure these back-up diesel electric generators from construction equipment rental companies. Due to limited supply, some of the generators were imported from other parts of the United States to support California. These electric generators would not have been installed in a timely manner if DWR had not entered into agreements with PG&E and SCE. Second, PG&E and SCE identified sites within their utility footprints where distribution capacity was readily available to maximize emergency response capability. Lastly, the diesel electric generators secured were certified in CARB's Portable Equipment Registration Program (PERP), and with extra precaution, DWR worked with PG&E and SCE to secure approval of their use per the local Air Pollution Control Districts' local requirements for back-up electric diesel generators. These ESSRRP assets supported the California electric grid during the historic September 2022 heat event. The delivery period for each agreement ended October 31, 2022. As shown in Table 11, the 82.4 MW were distributed over four locations in California: Oroville, Cloverdale, Clearlake, and Goleta. The assets were decommissioned in October 2022. DWR has authority to procure and operate diesel-fueled electric generation until July 2023, however, DWR does

not have plans to procure diesel-fueled electric generating resources before the July 31, 2023 procurement authority expiration.

Table 12: Summer 2022 – Emergency & Temporary Power Generators > 5 MW

Utility Footprint	Site Name	MW	Allocated Budget	Disbursed prior to 1/1/23	Disbursed 1/1/23 – 4/30/23	Total Disbursed
PG&E	Clearlake	17.7	$19,776,805	$0	$7,884,848	$7,884,848
	Cloverdale	17.0				
	Oroville	16.0				
SCE	Goleta	31.7	$17,700,000	$1,281,256	$2,222,277	$3,503,533
Total		**82.4**	**$37,476,805**	**$1,281,256**	**$10,107,125**	**$11,388,381**

1. Summer 2022 – Emergency & Temporary Power Generators > 5 MW Emissions

All of the diesel-fueled electric generators were temporary rentals and were secured, installed, and commissioned during the month of August 2022 at the four locations noted above. DWR collaborated with PG&E and SCE to obtain the CARB PERP certificates for each 2022 emergency diesel-fueled electric generator. CARB utilizes the Diesel Particulate Matter (DPM) as the regulated air pollutant in both pollutant and toxic categories. DWR, in collaboration with CARB, calculated the DPM mass by this specific load type, as shown in Table 13 below. As noted above, these assets were decommissioned and are no longer in the ESSRRP. This project is closed and these values will remain only as historical information in future reporting.

Table 13: Summer 2022 – Emergency & Temporary Power Generators Emissions

Utility Footprint	Site Name	Runtime prior to 1/1/23 [Hours]	Emissions prior to 1/1/23 [DPM g]	Runtime 1/1/23 – 4/30/23 [Hours]	Emissions 1/1/23 – 4/30/23 [DPM g]	Total Runtime [Hours]	Total Emissions [DPM g]
PG&E	Clearlake	244	29,066	0	0	244	29,066
	Cloverdale	242	5,557	0	0	242	5,557
	Oroville	272	42,343	0	0	272	42,343
SCE	Goleta	399	88,212	0	0	399	88,212
Total		**1,157**	**165,178**	**0**	**0**	**1,157**	**165,178**

V. Summary

The following program status changes have occurred since the prior May 2023 report:

- Summer 2023 Imported Firm Energy Agreements
    - New legislative action provides DWR with the funding and authority to oversee a 2023 program up through October 31, 2023. Since this is new authorization, information on this program will be provided in a subsequent report.
- New Historical Activities section added to retain documentation of programs that have closed and will no longer be updated.

DWR, while being a prudent steward of state funds, mitigating project risk, and being cognizant of local communities, continues to research new and innovative zero- and low-emission technologies to bolster the ESSRRP portfolio. DWR and its partners continue improving and utilizing the established communication channels to expedite processes. This collaborative approach strengthens California's electric grid reliability while transitioning to meeting California's clean energy goals.