



Electricity Supply Reliability Reserve Fund Progress Report

December 1, 2024

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

The Electricity Supply Reliability Reserve Fund Progress Report was prepared under the direction of

Delphine Hou Deputy Director, Statewide Energy

The following individuals supported the development of various sections of the Progress Report.

Wayne Wong Manager, Resource Acquisition and Development
Arslan Sabir Manager, Project Development
Mindy Graybill Manager, Administration & Business Services
May Khang Administration & Business Services
Colin Wood Senior Staff Counsel

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I. Background

California is transitioning to a one hundred percent clean electricity future, leading the nation in electrification. At the same time, climate change-induced extreme weather and emergencies negatively impact 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, Governor Gavin Newsom issued a state of emergency proclamation to take decisive actions to shore up electric grid reliability. On July 30, 2021, Governor Newsom signed an Emergency Proclamation that 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, an 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 various extraordinary factors such as extreme weather events, including 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 pieces of legislation collectively established California's 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 administered by the CEC and one by DWR. CEC's Demand Side Grid Support (DSGS) Program provides incentives to reduce customer net energy load and provide backup generation 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 outlined in AB 205, focusing on supporting the ESSRRP. DWR established the Statewide Energy Office (SWEO), a new Deputy Director-level division and staff, to support the implementation of the programs supporting electric grid reliability and California's clean energy future. SWEO oversees ESRRF and ESSRRP and the State Power Augmentation Program (SPAP) which was developed in response to Governor Newsom's July 30, 2021, Emergency Proclamation¹ 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, and CAISO and other California balancing authorities as applicable through regular meetings and communication. Other responsibilities include conducting technical research and prioritizing projects for feasibility within the program limits, 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, providing 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 the legislation and the urgency of these activities to support electric grid reliability and maintain an affordable and equitable transition to a clean, reliable electric grid, DWR responded by initiating project activities immediately.

Water Code Section 80730² requires DWR to issue a written report to the Joint Legislative Budget Committee detailing actions undertaken by ESSRRP and

¹ Proclamation of a State of Emergency (July 30, 2021), available at: <https://www.gov.ca.gov/wp-content/uploads/2021/07/Energy-Emergency-Proc-7-30-21.pdf>.

² Previous versions of this report included a reference to Public Resources Code Section 25795. This code provision was amended in 2023 to remove a duplicate reporting requirement for DWR.

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 the 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.*

This December 2024 report details actions undertaken by DWR and funded by the ESRRF from July 1, 2024, through September 30, 2024.

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, SWEA manages the ESSRRP in support of improving California's electric grid reliability 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 activities have taken place since the last report:

- Contracted Program Support, Professional and Technical Services, and Equipment
 - DWR executed an agreement with EUCI to provide staff with in-depth training, such as but not limited to, power purchase agreements, regulatory compliance, and energy markets.
- State Power Augmentation Program
 - The CEC accepted the City of Roseville facility into its Distributed Electricity Backup Assets (DEBA) Program to improve performance and retain the availability of the facility through March 29, 2032.
- Extended Operations of Retiring Facilities
 - The California State University Channel Islands contract was amended to clarify the index used to determine escalation rates.
- Historical Project Activities
 - Historical cost information related to Summer 2023 emergency and temporary power generators previously omitted from the summary table has been corrected;
 - The Dudek Environmental task order was closed and moved to Historical Project Activities; and
 - Summer 2023 Imported Firm Energy activities have closed and moved to Historical Project Activities.

Table 1 below summarizes the total committed funds per project category, the disbursements for incremental activities between July 1, 2024, through September 30, 2024, and total cumulative disbursements.

Table 1: Current Activities Reporting Period Disbursement Summary

Project Category	Committed Funds	Disbursed 7/1/24 - 9/30/24	Total Disbursed as of 9/30/24
Contracted Program Support, Professional and Technical Services, and Equipment	\$166,050,343	\$332,671	\$24,248,795
State Power Augmentation Program (SPAP) – Emergency & Temporary Power Generators > 5 MW	\$211,506,080	\$1,520,206	\$192,236,668
2023 – 2027 – Emergency & Temporary Power Generators > 5 MW	\$334,407,842	\$1,793,503	\$251,140,442
Extended Operations of Retiring Facilities	\$1,290,427,064	\$116,832,319	\$319,572,787
Summer 2023 Imported Firm Energy	\$100,000,000	\$0.00	\$100,000,000
Total	\$2,102,391,329	\$120,478,699	\$887,198,692

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
Contracted Program Support, Professional and Technical Services, and Equipment	\$461,648
Summer 2022 – Emergency & Temporary Power Generators > 5 MW	\$11,388,381
Summer 2022 Imported Firm Energy	\$74,324,342
Summer 2023 – Emergency & Temporary Power Generators > 5 MW	\$171,764
Summer 2023 Imported Firm Energy	\$100,000,000
Total	\$186,346,135

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

Summer 2024 Operational Overview

During this reporting period, California experienced both extreme heat and wildfires resulting in multiple declarations of states of emergency. Starting July 1, the state began to warn Californians of a dangerous multi-day heatwave with temperatures exceeding 110 degrees.³ Coincident with the heatwave, the massive Thompson Fire led to the evacuation of the City of Oroville and Governor Newsom proclaimed a state of emergency on July 2.⁴ Both the extreme heat and wildfire negatively impacted electric generation capacity on the grid and the CAISO declared a local transmission emergency for a portion of Northern California to access additional generation.⁵ In addition, to maximize the capability of the electric system, CAISO issued a restricted maintenance operations (RMO) order to limit taking generation and transmission equipment offline for routine maintenance.⁶ During this period, SWEO's resource portfolio was available and responsive to CAISO dispatch, including units in Northern California during the local transmission emergency declaration.

Extreme heat and wildfire conditions extended into the second week of July, prompting CAISO to issue a "heat bulletin" on July 10 noting⁷:

As the heat persists, it's important to emphasize that events that linger for many consecutive days can overtax generators running at high outputs for long periods, causing outages and reduced generation. Wildfires are also active in many areas of the state, which can pose a threat to generators and transmission lines. And the hotter weather is now extending to other areas of the West, which could limit the potential for importing energy.

Although the grid remained stable throughout this period, continued stress on the system led the CAISO to instruct the long-start Strategic Reliability Reserve

³ "California prepares for dangerous heatwave ahead of Fourth of July," (July 1, 2024), available at: <https://www.gov.ca.gov/2024/07/01/california-prepares-for-dangerous-heatwave-ahead-of-fourth-of-july/>

⁴ Proclamation of a State of Emergency (July 2, 2024), available at: <https://www.gov.ca.gov/wp-content/uploads/2024/07/7.3.24-Thompson-Fire-SOE.pdf>

⁵ California Independent System Operator, Grid Emergencies History Report, available at: <https://www.caiso.com/documents/grid-emergencies-history-report-1998-to-present.pdf>

⁶ California Independent System Operator, Grid Emergencies History Report, available at: <https://www.caiso.com/documents/grid-emergencies-history-report-1998-to-present.pdf>

⁷ California Independent System Operator, "Californians urged to prepare for continued high heat," July 10, 2024, available at: <https://www.caiso.com/about/news/news-releases/californians-urged-to-prepare-for-continued-high-heat>

resources to start up and remain on standby at minimum operating levels in preparation for peak demand conditions starting July 11.⁸ As grid conditions improved, the CAISO instructed the long-start Strategic Reliability Reserve resources to shut down by the end of July 11.⁹

Throughout the rest of July, CAISO continued to issue RMO orders and call localized transmission emergencies in order to access additional generation in Northern California to address high heat and demand and wildfire risk.¹⁰ On July 24, the CAISO declared an Energy Emergency Alert (EEA) Watch for the same day followed by an EEA Watch declaration by the Turlock Irrigation District Balancing Authority on July 25 for the same day due to wildfires threatening California's ability to import energy.¹¹ SWEO's short-start resource portfolio was available and responsive to both Balancing Authority declarations.

In September, California once again experienced multiple days of extreme heat and wildfires. On August 31, the CAISO issued a heat bulletin forecasting above-normal temperatures and increased electrical demand across California and the West over the Labor Day holiday weekend and intensifying through the following week.¹² The CAISO therefore instructed the long-start Strategic Reliability Reserve resources to start up and remain on standby at minimum and dispatchable operating levels in preparation for peak demand conditions starting September 5.¹³ As grid conditions improved, the CAISO instructed the long-start Strategic Reliability Reserve resources to shut down by the end of September 6.¹⁴

⁸ California Independent System Operator, Market Performance and Advanced Analytics, Summer Market Performance Report July 2024, August 30, 2024, p. 76. Available at: <https://www.caiso.com/documents/summer-market-performance-report-july-2024.pdf>

⁹ California Independent System Operator, Market Performance and Advanced Analytics, Summer Market Performance Report July 2024, August 30, 2024, p. 77. Available at: <https://www.caiso.com/documents/summer-market-performance-report-july-2024.pdf>

¹⁰ California Independent System Operator, Grid Emergencies History Report, available at: <https://www.caiso.com/documents/grid-emergencies-history-report-1998-to-present.pdf>

¹¹ California Independent System Operator, Grid Emergencies History Report, available at: <https://www.caiso.com/documents/grid-emergencies-history-report-1998-to-present.pdf>

¹² California Independent System Operator, "Heat forecasted for much of the western United States," August 31, 2024, available at: <https://www.caiso.com/about/news/news-releases/heat-forecasted-for-much-of-the-western-united-states>

¹³ California Independent System Operator, Market Performance and Advanced Analytics, Summer Market Performance Report September 2024, October 31, 2024, p. 76. Available at: <https://www.caiso.com/documents/summer-market-performance-report-september-2024.pdf>

¹⁴ California Independent System Operator, Market Performance and Advanced Analytics, Summer Market Performance Report September 2024, October 31, 2024, p. 77. Available at: <https://www.caiso.com/documents/summer-market-performance-report-september-2024.pdf>

After Labor Day, the CAISO issued a second heat bulletin on September 7 accompanied by an RMO order citing above-normal temperatures, especially in Southern California, and risks to reliability of overtaxing generation running for extended periods of time in high heat and potentially reduced imports given high temperatures across the West.¹⁵ Also on September 7, Governor Newsom proclaimed a state of emergency in San Bernardino County due to the fast-moving Line Fire near the City of Highland, forcing the evacuation of residents and threatening homes and critical infrastructure.¹⁶

Given these concerns, the CAISO instructed the long-start Strategic Reliability Reserve resources to start up and remain on standby at minimum operating levels in preparation for peak demand conditions starting September 9.¹⁷ As grid conditions improved, the CAISO instructed the long-start Strategic Reliability Reserve resources to shut down by the end of September 9.¹⁸ As with the events in July, SWEO's resource portfolio was available and responsive to CAISO dispatch.

III. Current Project Activities

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

DWR entered into agreements for professional program and project management, construction and commissioning expertise, and other related specialized technical services. SWEO utilizes these agreements to validate and secure viable sites, provide services and expertise for site feasibility studies and support, program management, site and project management, and to meet the deadlines outlined 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

¹⁵ California Independent System Operator, "Hot temperatures persist in California," September 7, 2024, available at: <https://www.caiso.com/about/news/news-releases/hot-temperatures-persist-in-california>

¹⁶ Proclamation of a State of Emergency (September 5, 2024), available at: https://www.gov.ca.gov/wp-content/uploads/2024/09/2024.09.07.SOE-Line-Fire.FINAL_.pdf

¹⁷ California Independent System Operator, Market Performance and Advanced Analytics, Summer Market Performance Report September 2024, October 31, 2024, p. 77. Available at: <https://www.caiso.com/documents/summer-market-performance-report-september-2024.pdf>

¹⁸ California Independent System Operator, Market Performance and Advanced Analytics, Summer Market Performance Report September 2024, October 31, 2024, p. 77. Available at: <https://www.caiso.com/documents/summer-market-performance-report-september-2024.pdf>

term, committed funds, disbursed funds prior to July 1, 2024, amounts disbursed this reporting period (July 1, 2024, through September 30, 2024), and the total cumulative disbursed amounts. The agreements listed below support multiple objectives and efforts under the ESSRRP.

The Bureau Veritas North America, Inc (Bureau Veritas) agreement provides quality control and 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 for environmental studies, surveying, environmental analysis, tribal consultation, and filings with local air pollution control districts to support new project development was closed and moved to the Historical Project Activities section. The Kiewit Power Constructors, Co. agreement provides design, construction, and commissioning expertise, and other related technical services. The Linda Rogers & Associates, Inc. agreement supports compliance with mandatory North American Electric Reliability Corporation reliability standards via permitting, reliability, technical engineering support, and auditing services. The EDF Trading North America LLC (EDF) and Pacific Gas & Electric (PG&E) agreements support the fuel management services for the Modesto Irrigation District (MID), Turlock Irrigation District (TID), and City of Lodi (Lodi) facilities under the Enchanted Rock agreement. The EDF agreement provides purchasing and scheduling needs and the PG&E agreement finances the transportation of natural gas to each of the three facilities. The MID agreement is for the purchase of a spare transformer to replace the one used to interconnect the Enchanted Rock generator at the MID site. The Stantec Consulting Services, Inc. and Ulteig Operations, LLC¹⁹ agreements support engineering, professional and technical programs, and project management services for all ESSRRP activities. On September 3, 2024, SWEO executed an agreement with EUCI to provide training services for staff. The training services provided under this agreement will include, but are not limited to, power purchase agreements, regulatory compliance, and energy markets.

¹⁹ Previously doing business as Ulteig Engineers, Inc.

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

Counterparty	Agreement Start Date	Agreement End Date	Committed Funds	Disbursed prior to 7/1/24	Disbursed 7/1/24 – 9/30/24	Total Disbursed
Bureau Veritas	02/01/2023	02/05/2026	\$6,000,000	\$839,331	\$0.00	\$839,331
EDF	12/1/2023	12/31/2027	\$15,313,065	\$87,191	\$51,863	\$139,054
EUCI	10/01/2024	09/30/2026	\$49,999	\$0	\$0	\$0
Kiewit Power Constructors, Co.	10/15/2022	06/30/2027	\$120,000,000	\$18,289,281	\$0.00	\$18,289,281
MID Spare Transformer	11/16/2023	12/31/2027	\$2,607,294	\$2,607,294	\$0.00	\$2,607,294
Linda Rogers & Associates, Inc.	01/01/2024	12/31/2026	\$3,000,000	\$36,273	\$5,808	\$42,081
PG&E – Lodi	12/1/2023	12/31/2027	\$2,381,345	\$14,586	\$1,904	\$16,490
PG&E – MID	12/1/2023	12/31/2027	\$2,381,345	\$43,940	\$3,577	\$47,517
PG&E – TID	12/1/2023	12/31/2027	\$2,317,295	\$29,440	\$40,788	\$70,228
Stantec Consulting Services, Inc.	07/29/2022	06/30/2027	\$6,000,000	\$299,785	\$0.00	\$299,785
Ulteig Operations, LLC	07/01/2022	06/30/2027	\$6,000,000	\$1,669,003	\$228,731	\$1,897,734
Total			\$166,050,343	\$23,916,124	\$332,671	\$24,248,795

B. State Power Augmentation Program (SPAP)

In accordance with the Governor's Emergency Proclamation issued July 30, 2021,²⁰ 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 from climate change-induced drought, wildfires, heat waves, and other extreme events. DWR collaborated with the CEC and CAISO to procure, install, and license four temporary natural gas

²⁰ Proclamation of a State of Emergency (July 30, 2021), available at <https://www.gov.ca.gov/wp-content/uploads/2021/07/Energy-Emergency-Proc-7-30-21.pdf>.

fueled electric generators totaling 120 MW, at existing electric generation sites located in Roseville (two generators) and Yuba City (two generators). These temporary electric power generators are fueled by natural gas and capable of running on a blend of up to 75 percent hydrogen in the future depending on the availability of hydrogen fuel. The SPAP generators are placed at existing electric generation sites to feed directly into the electric grid as needed. The SPAP facilities provide support during extreme events, including localized energy emergencies. SWEO met the challenge of the July 2021 Emergency Proclamation with the support of the CEC and CAISO, and the SPAP facilities became operational on September 22, 2021. These facilities directly supported California's electric grid during the September 2022 extreme heat event. During this reporting period, the SPAP units were operational, available, and responsive to dispatch. The original agreements and their committed funds allowed the facilities to remain available to support electric grid reliability until the end of 2023. DWR successfully negotiated extensions with both facility operators to retain the 120 MW of capacity within the ESSRP portfolio through 2027 for the Roseville Energy Park site and through 2028 for the Calpine Greenleaf 1 site.

On August 14, 2024, the CEC approved the City of Roseville's application for efficiency enhancements for the two SPAP generators at the Roseville Energy Park site.²¹ Given the urgency of the Emergency Proclamation and energy needs during summer 2021, the units at the Roseville Energy Park site were installed expeditiously and on a temporary basis. Many long-term improvements and upgrades were foregone in the interest of time. To increase the operational capacity of the units, the City of Roseville, with permission from SWEO, applied to and was successfully accepted into the CEC's Distributed Energy Backup Assets (DEBA) Program for bulk grid efficiency upgrades. The DEBA grant of approximately \$1.4 million allows for the installation of evaporative coolers and additional natural gas compression which will increase the combined output by 9.5 MW.²² The City of Roseville committed \$7.5 million in matching funds to complete the efficiency upgrades. In addition to this, City of Roseville will no longer charge SWEO site lease, operations and maintenance, and energy services fees in exchange for title of the SPAP assets and equipment at the Roseville Energy Park site. City of Roseville's participation in the DEBA program

²¹ California Energy Commission August 14, 2024, Business Meeting, Item 15: Distributed Electricity Backup Assets Program Bulk Grid Asset Enhancements for Grid Reliability - GFO-23-401, available at: <https://www.energy.ca.gov/event/meeting/2024-08/energy-commission-business-meeting>.

²² California Energy Commission August 14, 2024, Business Meeting, Item 15: Distributed Electricity Backup Assets Program Bulk Grid Asset Enhancements for Grid Reliability - GFO-23-401, Grant Request Form, available at: <https://www.energy.ca.gov/filebrowser/download/6527?fid=6527#block-symsoft-page-title>.

started September 10, 2024, and the term of the grant is expected to last through March 29, 2032. This transaction represents a significant benefit to California's electric grid reliability by retaining the facility in the state's Strategic Reliability Reserve beyond the 2027 negotiated term extension and cost-effectively supports an efficiency upgrade. Moreover, under the City of Roseville, the facility at the Roseville Energy Park site would displace less efficient resources in Roseville Electric's portfolio.

In future, CEC will report on the activities of the former SPAP facility at the Roseville Energy Park site per Section 25795 of the Public Resources Code.

Table 4: State Power Augmentation Program

Site	MW	Committed Funds	Disbursed before 7/1/24	Disbursed 7/1/24 – 9/30/24	Total Disbursed
Roseville Energy Park	60.0	\$104,522,494	\$93,848,815	\$306,670	\$94,155,485
Calpine Greenleaf 1	60.0	\$106,983,586	\$96,867,647	\$1,213,536	\$98,018,183
Total	120.0	\$211,506,080	\$190,716,462	\$1,520,206	\$192,236,668

1. SPAP Emissions

Emissions data for the SPAP units are reported for informational purposes only. Emissions data includes greenhouse gas (GHG) emissions, criteria pollutants, and toxic air contaminants. SWEQ staff collect data from the United States Environmental Protection Agency (US EPA) Emissions Collections and Monitoring Plan System (ECMPS) and reporting provided to local air districts, in consultation with CARB, for each site. Reporting timeframes vary by data set and source. SWEQ staff collects emissions data annually for each calendar year. GHG emissions reported include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Criteria pollutants reported include carbon monoxide (CO), nitrogen oxides (NO_x), sulfur oxides (SO_x), and particulate matter (PM₁₀). Toxic air contaminants are only reported when there is an exceedance.

Table 5 reports all emissions data for calendar year 2023 and the operating time in hours.

Table 5: SPAP Emissions for Calendar Year 2023

Emissions	Roseville Energy Park Mass (Tons)	Calpine Greenleaf 1 Mass (Tons)	Total Mass (Tons)
CO ₂	1,781.74	1,585.90	3,367.64
CH ₄	0.03	0.03	0.07
N ₂ O	0.00	0.00	0.01
CO	0.06	0.10	0.16
NO _x *	0.26	0.10	0.36
SO _x	0.00	0.00	0.00
PM ₁₀	0.03	0.00	0.03
Total Operating Time (hours)	123.91	107.27	231.18

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

Under the authority provided in Water Code Section 80710 subsection (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 new emergency and temporary power generators to support electric grid reliability during extreme events by September 2023, as shown in Table 6 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 agreements were entered into to support the installation of new electric generators under the authority of Water Code Section 80710 subsection(b)(1)(B). These new emergency resources are contracted to operate until 2027 to support electric grid reliability 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 the 52 MW project commenced operation. DWR will reimburse Panoche for their respective incurred costs, as deemed acceptable under the agreement. The final invoicing is currently expected to occur in 2025 with final close-out to be reported in a subsequent report.

As noted in the *Contracted Program Support, Professional and Technical Services, and Equipment* section, 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 facilities. Environmental reports and findings for these projects are available on DWR's public website.²³ Moreover, ERock's proprietary technology, similar to those contracted by DWR, has met CARB's Distributed Generation (DG) Certification Program requirements.²⁴ The DG Certification Program certifies electrical generation technologies that are exempt from the permit requirements of air pollution control or air quality management districts.

Since the ERock facilities came online in 2024, emission data will be provided in a subsequent report.

Table 6: Emergency and Temporary Power Generators > 5 MW

Counterparty	Site Name	MW	Committed Funds	Disbursed prior to 7/1/24	Disbursed 7/1/24 – 9/30/24	Total Disbursed
ERock	City of Lodi	48	\$113,832,881	\$85,121,916	\$842,013	\$85,963,929
	Modesto Irrigation District	48	\$104,418,556	\$80,324,677	\$430,556	\$80,755,233
	Turlock Irrigation District	47	\$115,706,405	\$83,627,184	\$520,934	\$84,148,118
Panoche	Unicorn	N/A	\$450,000	\$273,162	\$0.00	\$273,162
Total		143	\$334,407,842	\$249,346,939	\$1,793,503	\$251,140,442

D. Extended Operations of Retiring Facilities

Pursuant to Division 29 Section 80710 of the Water Code, 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 7 below summarizes five such agreements executed to retain

²³ "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>.

²⁴ 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>.

existing resources while load-serving entities are actively pursuing clean energy resources, which are negatively affected by global supply chain constraints and other delays, to meet traditional planning requirements.²⁵

Table 7: Extended Operations of Retiring Facilities

Counterparty	MW	Committed Funds	Disbursed prior to 7/1/24	Disbursed 7/1/24 – 9/30/24	Total Disbursed
CSUCI	27.5	\$23,000,000	\$3,693,247	\$517,789	\$4,211,039
AES - Alamitos	1,141.2	\$528,616,081	\$67,375,605	\$57,382,633	\$124,758,238
AES - Huntington Beach	226.8	\$105,799,596	\$13,429,648	\$16,919,935	\$30,349,583
GenON	1,491.3	\$558,011,387	\$65,753,100	\$42,011,962	\$107,765,062
PG&E*	-	\$75,000,000	\$52,488,868	\$0.00	\$52,488,868
Total	2,886.8	\$1,290,427,064	\$202,740,468	\$116,832,319	\$319,572,787

*Capacity for PG&E's contract is not considered part of the ESSRRP portfolio.

California State University Channel Islands

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.²⁶ Later in August 2022, the CAISO noted that the unit was no longer needed for local electric reliability.²⁷ Under the authority of Water Code Section 80710 subsection (b)(1)(A), DWR entered into an agreement with CSUCI to ensure the facility remained online beginning January 1, 2023, until 2027. Through this agreement SWEQ retained 27.5 MW under the ESSRRP portfolio and has conducted, with its CSUCI and CAISO partners, summer readiness testing along with regular maintenance in preparation to support California's electric grid reliability during extreme events. SWEQ will be overseeing these same activities in preparation for the summer 2025.

²⁵ Kootstra, Mark, and Nathan Barcic (CPUC). 2023. Joint Agency Reliability Planning Assessment. California Energy Commission. Publication Number: CEC-200-2023-002

²⁶ 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>.

²⁷ 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>.

AES Alamitos, AES Huntington Beach, and GenOn

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.²⁸ Without SWRCB action, these resources with a combined capacity of 2,859.3 MW²⁹ would retire by December 31, 2023 in order to comply with OTC policy.³⁰ 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 resources.”³¹ 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.”³² Instead, the OTC “resources will only be called upon to support grid operations during extreme events (including any

²⁸ 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>.

²⁹ Based on net qualifying capacity as determined by the CAISO.

³⁰ 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.

³¹ 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

³² 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>.

maintenance or test events recommended by and coordinated with the CAISO)."³³ Otherwise, the resources will be offline. The SWRCB unanimously voted to extend the OTC compliance period to December 31, 2026, at its August 15, 2023, Board meeting.³⁴ DWR executed separate agreements with AES Alamos LLC, AES Huntington Beach LLC, and Ormond Beach Power, LLC. The term for all three contracts is from January 1, 2024, through December 31, 2026. SWEO staff collaborated with the CPUC, CEC, and CAISO staff to negotiate the agreements which added the OTC facilities to the ESSRRP portfolio to support electric grid reliability during extreme events. These assets provide 2,859.3 MW to support California's electric grid reliability as California is taking action to accelerate the deployment of clean energy resources. As shown in Table 7 above, costs incurred for AES Alamos LLC and AES Huntington Beach LLC prior to this reporting period include capital expenditures for maximizing the availability and reducing maintenance of the facilities. Costs incurred for AES Alamos, AES Huntington Beach, and GenOn during the reporting period largely reflect capacity payments for each unit's availability, which began January 1, 2024.

Pacific Gas & Electric

The last agreement listed in Table 7 is with PG&E, the owner and operator of the Diablo Canyon Power Plant (DCPP), which had been scheduled for decommissioning on November 2, 2024 (Unit 1) and August 26, 2025 (Unit 2). DWR's agreement with PG&E allows for the procurement of fuel purchases, spent fuel management, and other costs necessary to maintain the option of extending operations for DCPP. This agreement was executed pursuant to AB 205 (Committee on Budget, Chapter 61, Statutes of 2022). Subsequently, in September 2022, Senate Bill (SB) 846 (Dodd, Chapter 239, Statutes of 2022) was signed into law to preserve the option of continued operations at DCPP to improve statewide electric reliability and reduce greenhouse gas (GHG) emissions while additional renewable and zero-carbon resources are built. DCPP currently supplies approximately 17 percent of California's zero-carbon electricity supply and 8.6 percent of California's total electricity supply. SB 846

³³ Tesfai, Leuwam, et al. "Use of the Once-Through Cooling Power Plants in the Strategic Reserve." www.aiso.com, 30 Nov. 2022, <http://www.aiso.com/Documents/Nov30-2022-JointLetter-CaliforniaStateWaterResourcesControlBoard-Use-Once-ThroughCoolingPowerPlants-StrategicReserve.pdf>.

³⁴ 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.

found that actions to extend DCP's operations for a renewed license term are prudent, cost effective, and in the best interests of all California electricity customers. SB 846 established the Diablo Canyon Extension Fund overseen by DWR as well as milestones and criteria for PG&E and various state agencies to extend the operating life of DCP for another five years to no later than October 31, 2030. DWR's agreement with PG&E under AB 205 and the loan agreement pursuant to SB 846 and funded by the Diablo Canyon Extension Fund are separate legal agreements.

Pursuant to SB 846, the SWRCB unanimously voted to revise the OTC compliance date for DCP to October 31, 2030, at its August 15, 2023, Board meeting.³⁵ On November 7, 2023, PG&E filed a License Renewal Application (LRA) with the United States Nuclear Regulatory Commission (NRC), which the NRC deemed sufficient on December 19, 2023.³⁶ This means that DCP may continue to operate, even beyond its current licensed end dates, while the NRC reviews PG&E's LRA. The NRC expects to provide a decision on the LRA in August 2025.³⁷ In parallel, the CPUC voted to conditionally extend DCP operations until October 31, 2029 (Unit 1) and October 31, 2030 (Unit 2).³⁸

Table 7 above shows costs incurred by PG&E pursuant to AB 205 to support DCP license renewal, including the purchase of nuclear fuel.

1. Extended Operations of Retiring Facilities Emissions

Emissions data includes greenhouse gas (GHG) emissions, criteria pollutants, and toxic air contaminants. SWEO staff collect data from the United States Environmental Protection Agency (US EPA) Emissions Collections and Monitoring Plan System (ECMPS) and reporting provided to local air districts, in consultation with CARB, for each site. Reporting timeframes vary by data set and source. SWEO staff will collect emissions data annually for each calendar year.

³⁵ 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.

³⁶ Federal Register / Vol. 88, No. 242 / Tuesday, December 19, 2023 / Notices page 87817 to 87819.

³⁷ <https://www.nrc.gov/reactors/operating/licensing/renewal/applications/diablo-canyon.html> (accessed on February 23, 2024).

³⁸ California Public Utilities Commission, Decision Conditionally Approving Extended Operations at Diablo Canyon Nuclear Power Plant Pursuant to Senate Bill 846, Rulemaking 23-01-007, Decision 23-12-036, December 14, 2023, <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M521/K496/521496276.PDF> (accessed on January 17, 2024).

During calendar year 2023, only CSUCI reported emissions as shown in Table 8 below. GHG emissions reported include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Criteria pollutants reported include nitrogen oxides (NO_x), sulfur oxides (SO_x), and particulate matter (PM₁₀). Toxic air contaminants emissions are not reported for CSUCI. The emissions shown in Table 8 are the result of emissions testing and maintenance.

Since the OTC units only joined the ESSRRP portfolio on January 1, 2024, emission data will be provided in a subsequent report. There are no GHG emissions or pollutant data for DCPD because it is a nuclear power plant.

Table 8: CSUCI Emissions for Calendar Year 2023

Emissions	Mass (Tons)
CO ₂	2323.07
CH ₄	0.04
N ₂ O	0.00
NO _x	0.05
SO _x	0.00
PM ₁₀	0.02
Total Operating Time (hours)	24.44

IV. Historical Project Activities

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

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

DWR entered into agreements for professional program and project management, construction and commissioning expertise, and other related specialized technical services. SWEO utilizes these agreements to validate and secure viable sites, provide services and expertise for site feasibility studies and support, program management, site and project management, and to meet the deadlines outlined 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 9 below provides a historical listing of each agreement's term, committed funds, and disbursed funds. The agreements listed below supported multiple objectives and efforts under the ESSRRP.

The Dudek task order supported environmental studies, surveying, environmental analysis, tribal consultation, and filings with local air pollution control districts to support new project development.

Table 9: Historical Contracted Program Support, Professional and Technical Services, and Equipment

Counterparty	Agreement Start Date	Agreement End Date	Committed Funds	Total Disbursed
Dudek	10/14/2022	01/31/2024	\$461,648	\$461,648

B. Summer 2022 – Emergency and 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. PG&E and SCE identified sites within their utility footprints where distribution capacity was readily available to maximize emergency response capability. In addition, the diesel-electric generators secured were certified in CARB's Portable Equipment Registration Program (PERP), and 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 10, the 82.4 MW were distributed over four locations in California: Oroville, Cloverdale, Clearlake, and Goleta. The assets were decommissioned in October 2022. DWR had the authority to procure and operate diesel-fueled electric generation until July 2023; however, DWR did not procure diesel-fueled

electric generating resources again before the July 31, 2023, procurement authority expiration.

Table 10: Summer 2022 – Emergency and Temporary Power Generators > 5 MW

Utility Footprint	Site Name	MW	Allocated Budget	Disbursed before 7/1/23	Disbursed 7/1/23 – 9/30/23	Total Disbursed
PG&E	Clearlake	17.7	\$19,776,805	\$7,884,848	\$0	\$7,884,848
	Cloverdale	17.0				
	Oroville	16.0				
SCE	Goleta	31.7	\$17,700,000	\$3,503,533	\$0	\$3,503,533
Total		82.4	\$37,476,805	\$11,388,381	\$0	\$11,388,381

1. Summer 2022 – Emergency and 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 11 below. As noted above, these assets were decommissioned and are no longer in the ESSRRP.

Table 11: Summer 2022 – Emergency and Temporary Power Generators > 5 MW - Emissions

Utility Footprint	Site Name	Runtime before 1/1/23 [Hours]	Emissions before 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

C. 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 PG&E, SCE, and SDG&E. All three electrical corporations contracted for imported Firm Energy³⁹ 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 of the electrical corporations and disbursed final payments. SWEQ staff confirmed, in consultation with CPUC staff, that all contracted imported firm energy procured through these agreements was 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 heatwave event. SWEQ staff have closed this program and reallocated the 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 12 below, which includes adjustments based on CAISO's settlement true-up timeframe (i.e., 70 business days after the trade date or T+70B).

Table 12: Summer 2022 Imported Firm Energy (July 1, 2022 – September 30, 2022)

Corporation	Contract Capacity (MW)	Committed	Disbursed before 7/1/23	Disbursed 7/1/23 – 9/30/23	Total Disbursed
PG&E	991	\$95,000,000	\$42,048,637	\$0	\$42,048,637
SCE	2,258	\$50,000,000	\$29,954,282	\$0	\$29,954,282
SDG&E	100	\$5,000,000	\$2,321,423	\$0	\$2,321,423
Total	3,349	\$150,000,000	\$74,324,342	\$0	\$74,324,342

1. Summer 2022 – Imported Firm Energy Emissions

Table 13 provides a listing of the MWhs, greenhouse gas (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

³⁹ 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.

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 was from zero or low-emission resources as categorized by the CARB.⁴⁰ 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 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.

⁴⁰ 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. <https://ww2.arb.ca.gov/mrr-acf>.

Table 13: Summer 2022 Imported Firm Energy Emissions (July 1, 2022 – September 30, 2022)

Delivery Month in 2022	Contract Capacity (MW)	Total Generation (MWh)	GHG Emission Factor (MT CO ₂ e / MWh)	Total GHG Emission (MT CO ₂ e)	Total GHG Emission By Month (MT CO ₂ e)
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)	

D. Summer 2023 – Emergency and Temporary Power Generators > 5 MW

Under the authority provided in Water Code Section 80710 subsection (b)(1)(B), DWR executed an agreement with Wellhead Energy, LLC (Wellhead) to secure emergency and temporary power generation to support electric grid reliability during extreme events by September 2023. The anticipated 60 MW Wellhead project in Goleta under the ESSRRP commenced, however, it was determined the project was no longer viable on December 7, 2022, due to a change in site ownership. DWR could no longer pursue the Wellhead project and DWR and Wellhead Energy mutually terminated the agreement. DWR reimbursed Wellhead for their respective reasonable incurred costs, as deemed acceptable under the agreement, but will no longer include the Wellhead Goleta site activities. Invoicing for the incurred costs began in early 2023 and the budget has been updated to reflect the final costs. As of May 31, 2023, the final invoice for Wellhead's incurred cost was processed and closed.

Table 14: Summer 2023 – Emergency and Temporary Power Generator > 5 MW

Counterparty	Site Name	Allocated Budget	Disbursed before 7/1/23	Disbursed 7/1/23 – 9/30/23	Total Disbursed
Wellhead	Goleta	\$171,764	\$171,764	\$0	\$171,764
Total		\$171,764	\$171,764	\$0	\$171,764

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 of the above-market cost of imported energy and imported capacity products procured from July 1, 2022, to October 31, 2023, to support electric service reliability and reduce costs to rate payers. To fund the reimbursement of above-market costs, \$100 million was allocated to the Summer 2023 Imported Firm Energy program.

For Summer 2023, DWR entered into agreements with Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas and Electric (SDG&E) for above-market cost reimbursement for imports procured above each utility's resource adequacy requirement, as validated with the CPUC, and delivered between June 1, 2023, through October 31, 2023. The electrical corporations contracted for imported Firm Energy to support statewide electric service reliability and DWR provided reimbursement for the resulting above-market costs, pursuant to the agreements. Invoicing began in late 2023 and included adjustments based on CAISO's settlement true-up timeframe (*i.e.*, 70 business days after the trade date or T+70B). Although the total above-market costs exceeded the \$100 million allocated budget, SWEO staff worked with each electrical corporation to ensure reimbursements stay within the allocated budget. The utilities may seek recovery of costs beyond the \$100 million limit through the appropriate CPUC rate recovery process.

Table 15 below shows the corporation, delivered capacity, committed funds, and dollars dispersed, which includes adjustments based on CAISO's T+70B settlement true-up. The delivered capacity includes contracts of various durations such as monthly and daily contracts. Most standard monthly contracts do not cover Sundays and North American Electric Reliability Corporation (NERC) holidays so daily contracts were used to supplement.

Table 15: Summer 2023 Imported Firm Energy (June 1, 2023 – October 31, 2023)

Corporation	Delivered Capacity (MW)	Committed Funds	Total Disbursed
PG&E	1,148	\$45,060,133	\$45,060,133
SCE	2,173	\$49,991,549	\$49,991,549
SDG&E	70	\$4,948,318	\$4,948,318
Total	3,391	\$100,000,000	\$100,000,000

1. Summer 2023 – Imported Firm Energy Emissions

Table 16 below provides a listing by month of the delivered MWs, MWhs, GHG emissions factor, and total GHG emissions in metric tons of carbon dioxide equivalent (MT CO₂e). The delivery period for the transactions was June 1, 2023, to October 31, 2023. The Imported Firm Energy emissions data has been aggregated to protect confidentiality, pursuant to the import agreements.

Approximately 15 percent of the generation (138,696 MWh out of 920,838 MWh) from imported firm energy were from zero or low-emission resources as categorized by the CARB.⁴¹ The remaining 85 percent (782,142 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 fueled power plant. The party responsible for paying the 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. In some individual transactions, the seller of that product took on the role of the importer, and in those cases, the seller was responsible for paying the GHG allowance costs.

⁴¹ 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. <https://ww2.arb.ca.gov/mrr-acf>.

Table 16: Summer 2023 Imported Firm Energy Emissions (June 1, 2023 – October 31, 2023)

Delivery Month in 2023	Delivered Capacity (MW)	Total Generation (MWh)	GHG Emission Factor (MT CO ₂ e / MWh)	Total GHG Emission (MT CO ₂ e)	Total GHG Emission By Month (MT CO ₂ e)
June	175	77,600	0.428	33,213	33,213
	0	0	Zero or low	0	
July	647	128,337	0.428	54,928	54,928
	50	20,000	Zero or low	0	
August	1,550	281,154	0.428	120,334	122,399
	275	118,696	Zero or low	2,065	
September	694	283,599	0.428	121,380	121,380
	0	0	Zero or low	0	
October	28	11,452	0.428	4,901	4,901
	0	0	Zero or low	0	
Total	3,419	920,838	-	336,822	336,822
Total emissions generation percentage calculation					
		782,142 MWh	0.428	(85% of total)	
		138,696 MWh	Zero or low	(15% of total)	

V. Summary

DWR's ESSRRP, part of California's Strategic Reliability Reserve, is charged with securing additional resources above and beyond traditional resource planning and procurement to address extreme events such as wildfires, wide-spread heat, or other climate-driven energy emergencies. The following program status changes have occurred since the last report to the Joint Legislative Budget Committee:

- Contracted Program Support, Professional and Technical Services, and Equipment
 - DWR executed an agreement with EUCI to provide staff with in-depth training, such as but not limited to, power purchase agreements, regulatory compliance, and energy markets.
- State Power Augmentation Program

- The CEC accepted the City of Roseville facility into its Distributed Electricity Backup Assets (DEBA) Program to improve performance and retain the availability of the facility through March 29, 2032.
- Extended Operations of Retiring Facilities
 - The CSUCI contract was amended to clarify the index used to determine escalation rates.
- Historical Project Activities
 - Historical cost information related to Summer 2023 emergency and temporary power generators previously omitted from the summary table has been corrected;
 - The Dudek Environmental task order was closed and moved to Historical Project Activities; and
 - Summer 2023 Imported Firm Energy activities have closed and moved to Historical Project Activities.

DWR, while being a prudent steward of state funds, mitigating project risk, and being cognizant of local communities, continues to work collaboratively with its partners to strengthen California's electric grid reliability while transitioning to meeting its clean energy future.