

DOCKETED	
Docket Number:	01-EP-10C
Project Title:	Enterprise Emergency Peaker Project - Compliance
TN #:	266077
Document Title:	Data Request for Enterprise Emergency Peaker Project
Description:	Letter to Jon Boyer
Filer:	susan fleming
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	9/19/2025 11:08:32 AM
Docketed Date:	9/19/2025



**CALIFORNIA
ENERGY COMMISSION**



**CALIFORNIA
NATURAL
RESOURCES
AGENCY**

September 19, 2025

Jon Boyer
Director of Environmental Health and Safety
Middle River Power
4350 Executive Dr, Suite 320
San Diego, California 92121

Data Requests for Enterprise Emergency Peaker Project (01-EP-10C)

Dear Jon Boyer:

The California Energy Commission (CEC) staff is asking for the information specified in the enclosed Data Requests, which is necessary for the completion of staff's analysis of the Enterprise Emergency Peaker Project (EEPP) petition to amend (TN# 255290). The proposed project changes include installation of a 52-megawatt (MW) battery energy storage system (BESS) adjacent to the existing EEPP site.

These Data Requests seek further information in the areas of Air Quality and Greenhouse Gases, based on the contents of the petition to amend that was provided.

To assist CEC staff in timely completing its environmental review and to meet the requirements of CEQA (see Cal. Code Regs., tit. 14, §§ 15108, 15109), CEC staff is requesting responses to the data requests within 30 days. If you are unable to provide the information requested or need to revise the timeline, please let me know within 10 days of receipt of this letter.

If you have any questions, please email me at joseph.douglas@energy.ca.gov.

Joseph Douglas
Compliance Project Manager

Enclosure: Data Requests

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AIR QUALITY AND GREENHOUSE GASES

Author: Andres Perez

BACKGROUND: CALEEMOD PROJECT FILES

Appendix C (Air Quality and Greenhouse Gas Study), Section 3.1 of the Supplemental Petition (TN 262237) states that the petitioner used the California Emissions Estimator Model (CalEEMod) to quantify the criteria pollutant and greenhouse gas (GHG) emissions associated with project construction and operation. Appendix B of the Air Quality and Greenhouse Gas Study, Section 8, contains information on the changes from CalEEMod defaults that the petitioner used when performing these calculations; however, the specifics of each change are not included in the section nor are they explained in the remainder of the Air Quality and Greenhouse Gas Study. Staff require the CalEEMod project files used to quantify project operational and construction emissions to fully evaluate the project's impacts.

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1. Please provide the JSON file containing the CalEEMod project used to quantify the project's construction and operation emissions and explain the changes made to the CalEEMod default values.

BACKGROUND: CONSTRUCTION IMPACT ANALYSIS

Section 2.1 of the Air Quality and Greenhouse Gas Study states that the project (and consequently the construction site) would be located within 950 feet of the Palomar Medical Center Escondido, which represents the nearest sensitive receptor. The applicant states, however, that because project construction would utilize Tier 4 construction equipment and would limit construction equipment and worker vehicle idling to five minutes, health risk impacts to sensitive receptors could be qualitatively stated to be less than significant (Air Quality and Greenhouse Gas Study, p. 34). Because of this, the applicant did not further quantify construction health risk impacts by performing a health risk assessment for construction.

Staff requires air dispersion modeling to quantify the pollutant concentrations and comprehensively evaluate whether project construction would expose sensitive receptors to substantial pollutant concentrations. This would include comparing modeled concentrations against state and federal impact thresholds, as well as performing a health risk assessment to determine if the project complies with San Diego Air Pollution Control District (SDAPCD) Rule 1210's health risk significance thresholds.

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2. Please provide an ambient air quality impacts analysis for criteria pollutants during construction of the project to show compliance with the California Ambient Air

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Quality Standards and the National Ambient Air Quality Standards or justify why such analysis is not needed. Compliance can be shown by demonstrating that project construction impacts would be below all applicable U.S. EPA Significant Impact Levels (SILs).

3. Please provide a health risk assessment for toxic air contaminant emissions during construction of the project to show that health risk impacts from construction at sensitive receptor locations would be below the SDAPCD health risk significance thresholds given in SDAPCD Rule 1210(c)(17) or justify why such analysis is not needed.

BACKGROUND: BESS COOLING SYSTEM

To help meet hydrofluorocarbon (HFC) reduction goals, in 2018 the California Air Resources Board adopted HFC prohibitions, which restricted the manufacture and sale of certain HFCs. These HFC prohibitions (previously Cal. Code Regs., tit. 17, §§ 95371-95377) were later consolidated with an adjacent HFC-regulating statute (SB 1013, Health and Saf. Code § 39734) in 2020. Section 95375(c)(1) of the new and now current HFC prohibition regulation (now Cal. Code Regs., tit. 17, §§ 95371-95378) states that no person shall sell, lease, rent, install, use, or otherwise enter into commerce in the State of California any end-use equipment or product manufactured after the effective date that does not comply with Table 3 of section 95374(c), with exceptions stated under section 95375(c)(2).

Section 5.15 of Appendix B (CalEEMod Output Files) of the Air Quality and Greenhouse Gas Study (Appendix C of the Supplemental Petition, TN 262237), shows that the applicant used the CalEEMod default refrigerant (R-404A) for the land use subtype "refrigerated warehouse-no rail." However, Table 3 of section 95374(c) states that BESS cooling systems fall under the "Chillers-Industrial Process Refrigeration" specific end-use and would be prohibited from using refrigerants with a 100-year global warming potential (GWP) greater than 750 to 2,200 after January 1, 2024, with the specific GWP restriction depending on the temperature at which the chilled fluid exits the chiller. According to the IPCC Fourth Assessment Report (AR4), refrigerant R-404A has a 100-year GWP of 3,921.6 and would thus be prohibited from use in BESS cooling systems after January 1, 2024, regardless of the temperature at which the chilled fluid exits the chiller.

Staff requires clarification regarding the cooling system design and refrigerant used to determine if the project would comply with Cal. Code Regs., tit. 17, § 95375(c)(1).

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4. Please provide a description of the cooling system design for the battery energy storage system and confirm the identity of the refrigerant proposed or provide the identity of refrigerant that the BESS cooling system will use.

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5. If the refrigerant proposed differs from that analyzed in CalEEMod (listed as R-404A), provide an estimate of annual refrigerant leakage, reported as carbon dioxide equivalent (CO₂e) emissions, from the cooling system proposed for the project.
6. Please demonstrate how the use of any refrigerant(s) proposed for BESS cooling would comply with the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning and Other End-Uses. If not, please propose an alternative refrigerant, and provide updated annual refrigerant leakage estimates, reported as carbon dioxide equivalent (CO₂e) emissions, associated with the newly proposed refrigerant.

BACKGROUND: BESS INDIRECT GHG EMISSIONS

Battery performance degrades over time, gradually decreasing round-trip efficiency. Staff expects that battery augmentation would be performed to offset battery degradation and maintain Project performance commitments, increasing auxiliary loads. This is supported by Section 2.3 of the Supplemental Petition (TN 262237), which states that “[i]t is anticipated that battery module augmentation via installation of additional battery enclosures will be required to make up for decreased battery performance over time”. Staff needs to determine the total number of battery enclosures by year 20 which would be the midpoint of the Project’s life cycle.

Staff will also need the annual indirect GHG emissions calculations with estimated transmission and charging/discharging cycle losses and auxiliary loads for both the beginning (year-1) and midpoint of the Project life (20-year assuming a 40-year project life, as stated in Section 1.2.2 of the Air Quality and Greenhouse Gas Study [Appendix C of the Supplemental Petition]). Additionally, if grid power is used to charge the BESS, staff needs to know the indirect GHG emissions associated with charging from the electrical grid and the carbon intensity value used to derive the indirect GHG emissions associated with grid charging. Staff needs the spreadsheet file(s) of the emissions calculations with live, embedded calculations to complete the analysis.

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7. Please estimate the annual indirect GHG emissions (metric tons of CO₂e) resulting from energy losses due to transmission and charging/discharging cycles. Please include assumptions that account for the degradation of round-trip efficiency over the project lifetime in the calculation of indirect GHG emissions.
8. Please estimate the annual indirect GHG emissions (metric tons of CO₂e) from auxiliary loads. Please include assumptions that account for the BESS efficiency degradation over the project lifetime in the calculation of indirect GHG emissions.
9. If the BESS would be charged by the grid, please calculate the indirect GHG emissions (metric tons of CO₂e) associated with charging from the grid. Provide assumptions for the number of hours annually that the BESS could be charged by the grid, the GHG emission intensity factor from the electrical grid during charging,

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and the efficiency degradation over the project lifetime in the calculation of indirect GHG emissions.

10. Please provide a copy of the spreadsheet file(s) containing the emissions calculations performed for **DR-7**, **DR-8**, and **DR-9** with live, embedded calculations.

PUBLIC HEALTH

Author: Andres Perez

BACKGROUND: IMPACTS FROM THERMAL RUNAWAY EVENT

Chapter 12, Section 1207.1.1 of the 2022 California Fire Code (CFC) requires that all BESS systems pass UL 9540A large-scale fire testing and Section 1207.31 of the 2022 CFC also requires that all BESS systems be listed in accordance with UL 9540 system safety certification. Additionally, Chapter 12, Section 1207.6 of the 2022 CFC requires technology-specific protection requirements that may include explosion control and thermal runaway safeguards, depending on the battery type employed for the BESS system.

Section 5.14 (Public Services/Fire Protection) of Appendix A of the Supplemental Petition (TN 262237) states that the BESS system would include “an active aerosol based thermal activated fire suppression system in each individual battery container” but does not state how the enclosures would comply with the 2022 CFC or the anticipated fire safety certifications the enclosures would have. In addition, the petition does not discuss the potential public health and air quality impacts that would result from a thermal runaway/fire event.

To further assist CEC staff and the public in their review of the air quality and public health impacts during the battery thermal runaway/fires, staff requests supplemental information regarding the impacts of a battery thermal runaway/fire event.

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11. Please provide a copy of the UL 9540A report, for the specific or multiple battery technology/manufacture that have been chosen, including measured emissions of criteria air pollutants, toxic air contaminants, greenhouse gases (GHG), and hazardous materials. Otherwise, please provide industry average data or a literature review addressing the emissions and exhaust parameters.
12. Please provide the exact locations (latitude and longitude or UTM coordinates) and dimensions of the BESS enclosures for modeling purposes. Please provide the following input parameters for a dispersion modeling analysis of all potential criteria air pollutants, greenhouse gases, and toxic air contaminants (TACs) that could be

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generated during combustion: emission rates (in grams/second), exhaust temperature, pressure, and exhaust gas velocity resulting from battery damage or thermal runaway of the whole project. Please include the calculation worksheet if available.

13. Please provide a dispersion modeling analysis of all potential criteria air pollutants and TACs for the thermal runaway scenario using a well-validated model (AERMOD is preferred).
14. Please compare the modeled fire-related TACs concentrations to the Office of Environmental Health Hazard Assessment (OEHHA)/ California Air Resources Board (CARB) acute Reference Exposure Levels (RELs) and demonstrate whether the acute hazard Index (HI) of TACs would be higher than the significance threshold of 1 at sensitive receptors. If an OEHHA REL is not available, a level 1 U.S. EPA Acute Exposure Guideline Level (AEGL) shall be used as the threshold of significance. Please demonstrate whether the criteria air pollutant impacts would cause or contribute to any exceedance of ambient air quality standards. If exceedances occur, provide a detailed Emergency Response Plan and outline the applicable regulatory notification requirements.