

DOCKETED

Docket Number:	20-SPPE-01
Project Title:	Great Oaks South Backup Generating Facility Small Power Plant Exemption
TN #:	235803
Document Title:	Bay Area Air Quality Management District Comments - Comment Letter for Great Oaks South Data Center NOP
Description:	N/A
Filer:	System
Organization:	Bay Area Air Quality Management District
Submitter Role:	Public Agency
Submission Date:	11/24/2020 3:49:31 PM
Docketed Date:	11/24/2020

*Comment Received From: Bay Area Air Quality Management District
Submitted On: 11/24/2020
Docket Number: 20-SPPE-01*

Comment Letter for Great Oaks South Data Center NOP

Additional submitted attachment is included below.



**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT**

November 24, 2020

Lisa Worrall, Project Manager
Siting, Transmission and Environmental Protection Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

RE: Great Oaks South Data Center – Notice of Preparation

Dear Ms. Worrall,

Bay Area Air Quality Management District (Air District) staff has reviewed the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Great Oaks South Data Center (Project). The Project applicant proposes to construct three 182,350 square foot, two-story data center buildings and a backup energy generating facility with a generation capacity of 99.0 megawatts (MW) on an approximately 18-acre site in San Jose. In addition, the Project would include 36 3.25-MW diesel-fired generators and three 0.5-MW diesel-fired generators. As the lead agency, the California Energy Commission (CEC) can grant the project applicant a Small Power Plant Exemption if it finds that the proposed project would not create a substantial adverse impact on the environment or energy resources. The Project will require Air District approval of an Authority to Construct and Permit to Operate the backup diesel generators, and, as such, the Project will be required to comply with all applicable Air District regulations.

The Air District has worked for many years to improve air quality and health in Santa Clara County and continues to do so today. Since the San Jose community has long been disproportionately impacted by air pollution and is identified as a priority community through our Community Air Risk Evaluation (CARE) program, the Air District is concerned about the potential for any increase in emissions that could result from the Project. Specifically, the Air District is concerned about the diesel-fueled backup generators that would be located outside of each building. Because residences are located near the Project site, the Air District highly recommends that the CEC consider requiring the project proponent to use the cleanest available technologies such as solar battery power or fuel cells or, at a minimum, relocating the generators further away from residential receptors.

Air District staff recommends the EIR include the following information and analysis:

ALAMEDA COUNTY
John J. Bauters
Pauline Russo Cutter
Scott Haggerty
Nate Miley

CONTRA COSTA COUNTY
John Gioia
David Hudson
Karen Mitchoff
(Secretary)
Mark Ross

MARIN COUNTY
Katie Rice

NAPA COUNTY
Brad Wagenknecht

SAN FRANCISCO COUNTY
VACANT
Shamann Walton
Tyrone Jue
(SF Mayor's Appointee)

SAN MATEO COUNTY
David J. Canepa
Carole Groom
Davina Hurt

SANTA CLARA COUNTY
Margaret Abe-Koga
Cindy Chavez
(Vice Chair)
Liz Kniss
Rod G. Sinks
(Chair)

SOLANO COUNTY
James Spering
Lori Wilson

SONOMA COUNTY
Teresa Barrett
Shirlee Zane

Jack P. Broadbent
EXECUTIVE OFFICER/APCO

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- **The greenhouse gas (GHG) impact analysis should include an evaluation of the Project's consistency with the most recent draft of the AB 32 Scoping Plan by the California Air Resources Board and with the State's 2030, 2045, and 2050 climate goals.** The current recommended GHG thresholds in the Air District's 2017 CEQA Guidelines are based on the State's 2020 GHG targets, which are now superseded by the 2030 GHG targets established in SB 32. The EIR should demonstrate how the Project will be consistent with the Scoping Plan as well as the State's long-term climate goals. This includes an evaluation and discussion of how the GHG emissions associated with the electricity used by the data center and diesel fuel combusted by the backup power generators (including non-testing/non-maintenance operations) are consistent with the State's goal of carbon neutrality as soon as possible and no later than 2045.
 - **The EIR should estimate and evaluate the potential health risk to existing and future sensitive populations within and near the Project area from toxic air contaminants (TAC) and fine particulate matter (PM_{2.5}) as a result of the Project's construction and operation.** Air District staff recommends that the EIR evaluate potential cumulative health risk impacts of TAC and PM_{2.5} emissions on sensitive receptors within and near the Project area.
 - **The EIR should include various scenarios of backup power generation operations beyond routine testing and maintenance.** Air District staff recommends that the EIR include GHG, criteria pollutant, and TAC impacts due to the non-testing/non-maintenance operations of backup power generators. Various scenarios should be considered for non-testing/non-maintenance operations, including non-zero hours of operation and concurrent generator operations. Air District staff has reviewed recent data regarding backup generator usage during non-testing/non-maintenance operations at a number of South Bay data centers. Between September 1, 2019, and September 30, 2020 nearly half of the identified data centers in Santa Clara, San Jose, and Sunnyvale operated backup diesel generators for reasons other than routine testing and maintenance. Many of the data centers operated diesel generators during multiple non-testing/non-maintenance events; non-testing/non-maintenance hours of operation approached 50 hours for one generator for one event; it appears 40 or more generators operated concurrently at two facilities; and one facility ran diesel generators for approximately 400 hours for non-testing/non-maintenance purposes over the course of the period. Please see Attachment 1 for details of the preliminary information on non-testing/non-maintenance operations that the Air District has received from data centers. Air District staff can work with CEC staff to refine these data for use in the environmental analysis; these preliminary data are provided here to demonstrate the need to evaluate non-testing/non-maintenance operations.

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- **The EIR should evaluate all feasible measures, both onsite and offsite, to minimize air quality and GHG impacts.** The EIR should prioritize onsite measures, followed by offsite measures, within the Project area. Examples of potential emission reduction measures that should be evaluated and considered include, but are not limited to:
 - Prohibiting or minimizing the use of diesel fuel, consistent with the Air District's Diesel Free By '33 initiative (<http://dieselfree33.baaqmd.gov/>) and the commitment by Mayor Sam Liccardo of the City of San Jose to meet this goal.
 - Implementing green infrastructure and fossil fuel alternatives in the development and operation of the Project, such as solar photovoltaic (PV) panels, renewable diesel, electric heat pump water heaters, and/or fuel cells or solar PV backup power with battery storage capacity.
 - Joining San Jose Clean Energy's (SJCE) TotalGreen program and thus committing to the purchase of 100 percent renewable energy or negotiating an electricity contract with SJCE for 100 percent renewable energy.
 - Implementing best available industry energy efficiency practices to achieve a power usage effectiveness (PUE) rating of 1.2 or lower.
 - Requiring construction vehicles to operate with the highest tier engines commercially available.
 - Creating a construction phase traffic management plan that reduces diesel equipment idling.
 - Supporting zero-emission vehicles via provision of electric vehicle (EV) charging infrastructure and preferential parking for EVs.
 - Procuring carbon offsets after implementation of all feasible onsite mitigation measures in order to eliminate remaining GHG emissions associated with construction and operation of the Project.

 - **The EIR should include a robust alternatives analysis, with consistent application of analytical standards and substantiation of claims.** CEC staff should apply the same analytical standard to its alternatives analysis as it does elsewhere in the EIR. Specifically, if a probability risk assessment is used to justify the low likelihood of a grid outage and thus of diesel generator operations, then that same analytical framework should be applied in the assessment of alternatives (e.g., likelihood of a seismic event disrupting natural gas deliveries, likelihood of a diesel supply shortage resulting from a grid outage, etc.). In addition, the analysis should consider calculating and comparing the reliability of primary and backup system options (e.g., the grid as primary and diesel generators as backup as one configuration, compared to fuel cells as primary and the grid as backup). Lastly, CEC staff should consider substantiating claims and anecdotal evidence by citing third-party studies.

 - **The EIR should evaluate the Project's consistency with the Air District's 2017 Clean Air Plan (2017 CAP).** The EIR should discuss 2017 CAP measures relevant to the Project and show the Project's consistency with the measures. The 2017 CAP can be found on the Air

District's website: <http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans>.

- **The Air District's CEQA website contains several tools and resources to assist lead agencies in analyzing air quality and GHG impacts.** These tools include guidance on quantifying local emissions and exposure impacts. The tools can be found on the Air District's website: <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>. If the Project requires a site-specific analysis, please contact Air District staff to obtain more recent data.
- **Certain aspects of the Project will require a permit from the Air District (for example, backup diesel generators).** Please contact Barry Young, Senior Advanced Projects Advisor, at (415) 749-4721 or byoung@baaqmd.gov to discuss permit requirements. Any applicable permit requirements should be discussed in the EIR.

We encourage the CEC to contact Air District staff with any questions and/or to request assistance during the environmental review process. If you have any questions or would like to discuss Air District recommendations further, please contact Josephine Fong, Environmental Planner, at (415) 749-8637 or jfong@baaqmd.gov, or Jakub Zielkiewicz, Advanced Projects Advisor, at (415) 749-8429 or jzielkiewicz@baaqmd.gov.

Sincerely,



Greg Nudd
Deputy Air Pollution Control Officer

Attachment

cc: BAAQMD Director Margaret Abe-Koga
BAAQMD Vice Chair Cindy Chavez
BAAQMD Director Liz Kniss
BAAQMD Chair Rod G. Sinks
CARB Executive Officer Richard Corey

Attachment

Preliminary back-up diesel engine operations (non-testing/non-maintenance) for select facilities in Santa Clara, Sunnyvale, and San Jose							
September 1, 2019 - September 30, 2020							
Facility operator data, based on facility responses to BAAQMD's 9/25/20 data request. Data may be refined and additional information may be available during follow-up discussions.							
Facility data requested by BAAQMD pursuant to CEC and CARB information request dated 9/17/20 and 9/18/20.							
Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
1	1	2	9	5%	90	8/17/20-8/18/20	State Emergency Load Shedding
1	2	2	8.8	6%	240	8/17/20-8/18/20	State Emergency Load Shedding
1	2	2	1.2	5%	29	8/17/20-8/18/20	Human error event
1	3	2	1	1%	5	8/17/20-8/18/20	Human error event
1	4	2	8.5	25%	390	8/17/20-8/18/20	State Emergency Load Shedding
1	4	2	1	26%	58	8/17/20-8/18/20	Human error event
1	5	2	9.1	31%	400	8/17/20-8/18/20	State Emergency Load Shedding
1	6	2	8.9	21%	300	8/17/20-8/18/20	State Emergency Load Shedding
1	7	2	8.8	24%	350	8/17/20-8/18/20	State Emergency Load Shedding
1	8	2	8.8	25%	350	8/17/20-8/18/20	State Emergency Load Shedding
1	9	2	8.6	22%	325	8/17/20-8/18/20	State Emergency Load Shedding
1	10	2	9	19%	300	8/17/20-8/18/20	State Emergency Load Shedding
2	1	2	12.6	34%	682	Various	Utility inflicted disturbance
2	2	2	14.7	41%	795	Various	Utility inflicted disturbance
2	3	2	15.3	30%	828	Various	Utility inflicted disturbance
2	4	2	13.8	32%	747	Various	Utility inflicted disturbance
2	5	2	20.2	26%	1093	Various	Utility inflicted disturbance
3	1	2	0.5	1%		8/17/20-8/18/20	State Emergency Load Shedding
3	2	2	1.4	2%		8/17/20-8/18/20	State Emergency Load Shedding
3	3	2	36.7	40%		8/17/20-8/18/20	State Emergency Load Shedding
3	4	2.25	0.2	1%		8/17/20-8/18/20	State Emergency Load Shedding
3	5	2.25	31.7	36%		8/17/20-8/18/20	State Emergency Load Shedding
3	6	2.25	37.3	36%		8/17/20-8/18/20	State Emergency Load Shedding
4	1	2.25	0.4	33%	25	8/16/2020	Lightning strikes to transmission line
4	2	2.25	0.4	33%	25	8/16/2020	Lightning strikes to transmission line
4	3	2.25	0.4	33%	25	8/16/2020	Lightning strikes to transmission line
4	4	2.25	0.4	33%	25	8/16/2020	Lightning strikes to transmission line
4	5	2.25	0.4	33%	25	8/16/2020	Lightning strikes to transmission line
4	6	2.25	0.5	33%	32	8/16/2020	Lightning strikes to transmission line
4	7	2.25	0.5	33%	32	8/16/2020	Lightning strikes to transmission line
4	8	2.25	0.5	33%	32	8/16/2020	Lightning strikes to transmission line
4	9	2.25	0.5	33%	32	8/16/2020	Lightning strikes to transmission line

Preliminary back-up diesel engine operations (non-testing/non-maintenance) for select facilities in Santa Clara, Sunnyvale, and San Jose

September 1, 2019 - September 30, 2020

Facility operator data, based on facility responses to BAAQMD's 9/25/20 data request. Data may be refined and additional information may be available during follow-up discussions.

Facility data requested by BAAQMD pursuant to CEC and CARB information request dated 9/17/20 and 9/18/20.

Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
4	10	2.25	0.5	33%	32	8/16/2020	Lightning strikes to transmission line
4	11	2.25	0.5	33%	32	8/16/2020	Lightning strikes to transmission line
4	12	2.25	0.6	33%	38	8/16/2020	Lightning strikes to transmission line
4	13	2.25	0.6	33%	38	8/16/2020	Lightning strikes to transmission line
4	14	2.25	0.6	33%	38	8/16/2020	Lightning strikes to transmission line
4	15	2.25	0.6	33%	38	8/16/2020	Lightning strikes to transmission line
4	16	2.25	0.6	33%	38	8/16/2020	Lightning strikes to transmission line
4	17	2.25	0.4	43%	33	8/16/2020	Lightning strikes to transmission line
4	18	2.25	0.4	43%	33	8/16/2020	Lightning strikes to transmission line
4	19	2.25	0.4	43%	33	8/16/2020	Lightning strikes to transmission line
4	20	2.25	0.4	43%	33	8/16/2020	Lightning strikes to transmission line
4	21	2.25	0.4	43%	33	8/16/2020	Lightning strikes to transmission line
4	22	2.25	0.5	43%	41	8/16/2020	Lightning strikes to transmission line
4	23	2.25	0.5	43%	41	8/16/2020	Lightning strikes to transmission line
4	24	2.25	0.5	43%	41	8/16/2020	Lightning strikes to transmission line
4	25	2.25	0.5	43%	41	8/16/2020	Lightning strikes to transmission line
4	26	2.25	0.5	43%	41	8/16/2020	Lightning strikes to transmission line
4	27	2.25	0.5	43%	41	8/16/2020	Lightning strikes to transmission line
4	28	2.25	0.6	43%	49	8/16/2020	Lightning strikes to transmission line
4	29	2.25	0.6	43%	49	8/16/2020	Lightning strikes to transmission line
4	30	2.25	0.6	43%	49	8/16/2020	Lightning strikes to transmission line
4	31	2.25	0.6	43%	49	8/16/2020	Lightning strikes to transmission line
4	32	2.25	0.6	43%	49	8/16/2020	Lightning strikes to transmission line
4	33	2.25	0.4	52%	34	8/16/2020	Lightning strikes to transmission line
4	34	2.25	0.4	52%	34	8/16/2020	Lightning strikes to transmission line
4	35	2.25	0.4	52%	34	8/16/2020	Lightning strikes to transmission line
4	36	2.25	0.4	52%	34	8/16/2020	Lightning strikes to transmission line
4	37	2.25	0.4	52%	34	8/16/2020	Lightning strikes to transmission line
4	38	2.25	0.5	52%	43	8/16/2020	Lightning strikes to transmission line
4	39	2.25	0.5	52%	43	8/16/2020	Lightning strikes to transmission line
4	40	2.25	0.5	52%	43	8/16/2020	Lightning strikes to transmission line
4	41	2.25	0.5	52%	43	8/16/2020	Lightning strikes to transmission line

Preliminary back-up diesel engine operations (non-testing/non-maintenance) for select facilities in Santa Clara, Sunnyvale, and San Jose

September 1, 2019 - September 30, 2020

Facility operator data, based on facility responses to BAAQMD's 9/25/20 data request. Data may be refined and additional information may be available during follow-up discussions.

Facility data requested by BAAQMD pursuant to CEC and CARB information request dated 9/17/20 and 9/18/20.

Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
4	42	2.25	0.5	52%	43	8/16/2020	Lightning strikes to transmission line
4	43	2.25	0.5	52%	43	8/16/2020	Lightning strikes to transmission line
4	44	2.25	0.6	52%	51	8/16/2020	Lightning strikes to transmission line
5	1	2	5	46%	325	8/17/20-8/18/20	State Emergency Load Shedding
5	2	2	6	58%	400	8/17/20-8/18/20	State Emergency Load Shedding
6	1	2	41.9	30%	200	8/17/20-8/18/20	utility outage
6	2	2	47.7	22%	180	8/17/20-8/18/20	utility outage
6	3	2	13	2%	20	8/17/20-8/18/20	utility outage
6	4	2	37.2	54%	500	8/17/20-8/18/20	utility outage
6	5	2	37.3	38%	250	8/17/20-8/18/20	utility outage
6	6	2	41.7	0%	20	8/17/20-8/18/20	utility outage
7	1	2.5	3.5	48%	600	8/18/2020	Power outage
7	1	2.5	3.5	48%	600	9/6/2020	Power outage
7	1	2.5	2.5	48%	480	8/14/2020	Power outage
7	2	2.5	3.5	48%	600	8/18/2020	Power outage
7	2	2.5	3.5	48%	600	9/6/2020	Power outage
7	2	2.5	2.5	48%	480	8/14/2020	Power outage
7	3	2.5	3.5	48%	600	8/18/2020	Power outage
7	3	2.5	3.5	48%	600	9/6/2020	Power outage
7	3	2.5	2.5	48%	480	8/14/2020	Power outage
7	4	2.5	3.5	48%	600	8/18/2020	Power outage
7	4	2.5	3.5	48%	600	9/6/2020	Power outage
7	4	2.5	2.5	48%	480	8/14/2020	Power outage
7	5	2.5	3.5	48%	600	8/18/2020	Power outage
7	5	2.5	3.5	48%	600	9/6/2020	Power outage
7	5	2.5	2.5	48%	480	8/14/2020	Power outage
7	6	2.5	3.5	48%	600	8/18/2020	Power outage
7	6	2.5	3.5	48%	600	9/6/2020	Power outage
7	6	2.5	2.5	48%	480	8/14/2020	Power outage
7	7	2.5	3.5	48%	600	8/18/2020	Power outage
7	7	2.5	3.5	48%	600	9/6/2020	Power outage
7	7	2.5	2.5	48%	480	8/14/2020	Power outage

Preliminary back-up diesel engine operations (non-testing/non-maintenance) for select facilities in Santa Clara, Sunnyvale, and San Jose

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Facility data requested by BAAQMD pursuant to CEC and CARB information request dated 9/17/20 and 9/18/20.

Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
7	8	2.5	3.5	48%	600	8/18/2020	Power outage
7	8	2.5	3.5	48%	600	9/6/2020	Power outage
7	8	2.5	2.5	48%	480	8/14/2020	Power outage
7	9	2.5	3.5	48%	600	8/18/2020	Power outage
7	9	2.5	3.5	48%	600	9/6/2020	Power outage
7	9	2.5	2.5	48%	480	8/14/2020	Power outage
7	10	2.5	3.5	48%	600	8/18/2020	Power outage
7	10	2.5	3.5	48%	600	9/6/2020	Power outage
7	10	2.5	2.5	48%	480	8/14/2020	Power outage
7	11	2.5	3.5	48%	600	8/18/2020	Power outage
7	11	2.5	3.5	48%	600	9/6/2020	Power outage
7	11	2.5	2.5	48%	480	8/14/2020	Power outage
7	12	2.5	3.5	48%	600	8/18/2020	Power outage
7	12	2.5	3.5	48%	600	9/6/2020	Power outage
7	12	2.5	2.5	48%	480	8/14/2020	Power outage
7	13	2.5	3.5	48%	600	8/18/2020	Power outage
7	13	2.5	3.5	48%	600	9/6/2020	Power outage
7	13	2.5	2.5	48%	480	8/14/2020	Power outage
8	1	2	0.3	5%	2	11/27/2019	System-wide power quality event
8	1	2	0.2	6%	2	2/15/2020	System-wide power quality event
8	2	2	0.3	5%	2	11/27/2019	System-wide power quality event
8	2	2	0.3	5%	2	2/15/2020	System-wide power quality event
8	3	2	0.3	6%	2	11/27/2019	System-wide power quality event
8	3	2	0.2	6%	2	2/15/2020	System-wide power quality event
8	4	2	0.3	7%	2	2/15/2020	System-wide power quality event
8	4	2	0.2	8%	2	11/27/2019	System-wide power quality event
8	5	2	0.2	10%	2	11/27/2019	System-wide power quality event
8	5	2	0.2	8%	2	2/15/2020	System-wide power quality event
8	6	2	0.2	9%	2	11/27/2019	System-wide power quality event
8	6	2	0.2	7%	2	2/15/2020	System-wide power quality event
8	7	2	0.2	15%	2	11/27/2019	System-wide power quality event
8	7	2	0.2	8%	2	2/15/2020	System-wide power quality event

Preliminary back-up diesel engine operations (non-testing/non-maintenance) for select facilities in Santa Clara, Sunnyvale, and San Jose

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Facility data requested by BAAQMD pursuant to CEC and CARB information request dated 9/17/20 and 9/18/20.

Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
8	8	2	0.2	13%	2	11/27/2019	System-wide power quality event
8	8	2	0.2	6%	2	2/15/2020	System-wide power quality event
8	9	2	0.2	9%	2	11/27/2019	System-wide power quality event
8	9	2	0.2	6%	2	2/15/2020	System-wide power quality event
8	10	2	0.2	12%	2	11/27/2019	System-wide power quality event
8	10	2	0.2	7%	2	2/15/2020	System-wide power quality event
8	11	2	0.2	5%	2	11/27/2019	System-wide power quality event
8	11	2	0.2	6%	2	2/15/2020	System-wide power quality event
8	12	2	0.2	5%	2	11/27/2019	System-wide power quality event
8	12	2	0.2	6%	2	2/15/2020	System-wide power quality event
8	13	2	0.2	6%	2	11/27/2019	System-wide power quality event
8	13	2	0.2	7%	2	2/15/2020	System-wide power quality event
8	14	2	0.2	6%	2	11/27/2019	System-wide power quality event
8	14	2	0.2	7%	2	2/15/2020	System-wide power quality event
8	15	2	0.2	12%	2	11/27/2019	System-wide power quality event
8	15	2	0.2	11%	2	2/15/2020	System-wide power quality event
8	16	2	0.3	10%	2	11/27/2019	System-wide power quality event
8	16	2	0.2	9%	2	2/15/2020	System-wide power quality event
8	17	2	0.3	9%	2	11/27/2019	System-wide power quality event
8	17	2	0.2	9%	2	2/15/2020	System-wide power quality event
8	18	2	0.2	7%	2	11/27/2019	System-wide power quality event
8	18	2	0.2	6%	2	2/15/2020	System-wide power quality event
8	19	2	0.2	10%	2	11/27/2019	System-wide power quality event
8	19	2	0.2	8%	2	2/15/2020	System-wide power quality event
8	20	2	0.2	9%	2	11/27/2019	System-wide power quality event
8	20	2	0.2	7%	2	2/15/2020	System-wide power quality event
8	21	2	0.2	17%	2	11/27/2019	System-wide power quality event
8	21	2	0.2	12%	2	2/15/2020	System-wide power quality event
8	22	2	0.2	8%	2	11/27/2019	System-wide power quality event
8	22	2	0.2	8%	2	2/15/2020	System-wide power quality event
8	23	2	0.2	6%	2	11/27/2019	System-wide power quality event
8	23	2	0.2	5%	2	2/15/2020	System-wide power quality event

Preliminary back-up diesel engine operations (non-testing/non-maintenance) for select facilities in Santa Clara, Sunnyvale, and San Jose

September 1, 2019 - September 30, 2020

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Facility data requested by BAAQMD pursuant to CEC and CARB information request dated 9/17/20 and 9/18/20.

Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
8	24	2	0.2	6%	2	11/27/2019	System-wide power quality event
8	24	2	0.2	5%	2	2/15/2020	System-wide power quality event
9	1	2	8.4	65%	524	8/17/20-8/18/20	State Emergency Load Shedding
9	2	2	5.6	60%	400	8/17/20-8/18/20	State Emergency Load Shedding
9	3	2	2.6	50%	300	8/17/20-8/18/20	Equipment failure
9	4	2	2.9	1%	20	8/17/20-8/18/20	State Emergency Load Shedding
9	5	0.23	6.5	7%	10	8/17/20-8/18/20	State Emergency Load Shedding
10	1	2	9		256	8/17/20-8/18/20	State Emergency Load Shedding
10	2	2	9		256	8/17/20-8/18/20	State Emergency Load Shedding
10	3	2	9		256	8/17/20-8/18/20	State Emergency Load Shedding
10	4	2.06	4		296	8/17/20-8/18/20	State Emergency Load Shedding
10	5	2.06	4		296	8/17/20-8/18/20	State Emergency Load Shedding
10	6	2.06	4		296	8/17/20-8/18/20	State Emergency Load Shedding
10	7	3	7		1280	8/17/20-8/18/20	State Emergency Load Shedding
10	7	3	4		731.5	8/17/20-8/18/20	State Emergency Load Shedding
10	8	3	7		1280	8/17/20-8/18/20	State Emergency Load Shedding
10	8	3	4		731.5	8/17/20-8/18/20	State Emergency Load Shedding
10	9	3	7		1280	8/17/20-8/18/20	State Emergency Load Shedding
10	9	3	4		731.5	8/17/20-8/18/20	State Emergency Load Shedding
10	10	3	7		1280	8/17/20-8/18/20	State Emergency Load Shedding
10	10	3	4		731.5	8/17/20-8/18/20	State Emergency Load Shedding
10	11	3	5		780	8/17/20-8/18/20	State Emergency Load Shedding
10	12	3	5		780	8/17/20-8/18/20	State Emergency Load Shedding
10	13	3	5.5		930	8/17/20-8/18/20	State Emergency Load Shedding
10	14	3	5		780	8/17/20-8/18/20	State Emergency Load Shedding
10	15	3	5.5		930	8/17/20-8/18/20	State Emergency Load Shedding
10	16	3	5.5		930	8/17/20-8/18/20	State Emergency Load Shedding
10	17	2.75	9		625	8/17/20-8/18/20	State Emergency Load Shedding
10	18	2.75	8.2		525	8/17/20-8/18/20	State Emergency Load Shedding
10	19	2.75	8.9		615	8/17/20-8/18/20	State Emergency Load Shedding
10	20	2.75	11.3		975	8/17/20-8/18/20	State Emergency Load Shedding
10	21	2	4		238	8/17/20-8/18/20	State Emergency Load Shedding

Preliminary back-up diesel engine operations (non-testing/non-maintenance) for select facilities in Santa Clara, Sunnyvale, and San Jose

September 1, 2019 - September 30, 2020

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Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
10	22	3	5.5		930	8/17/20-8/18/20	State Emergency Load Shedding
10	23	3	5.5		930	8/17/20-8/18/20	State Emergency Load Shedding
10	24	3	5.5		930	8/17/20-8/18/20	State Emergency Load Shedding
10	25	2.75	8.3		530	8/17/20-8/18/20	State Emergency Load Shedding
10	26	2.75	8.3		530	8/17/20-8/18/20	State Emergency Load Shedding
10	27	2.75	8.3		530	8/17/20-8/18/20	State Emergency Load Shedding
10	28	2.75	8.3		530	8/17/20-8/18/20	State Emergency Load Shedding
10	29	3	11.6		1786		Power bump
10	29	3	4		616		Power bump
10	29	3	3.5		539	8/17/20-8/18/20	State Emergency Load Shedding
10	29	3	3		462		Power bump
10	29	3	2.7		416		Power bump
10	29	3	1		154		Power bump
10	29	3	1		154		Utility outage
10	30	3	10.1		1555		Utility outage
10	30	3	5.5		847		Power bump
10	30	3	4		616		Utility outage
10	30	3	3.7		569.8	8/17/20-8/18/20	State Emergency Load Shedding
10	30	3	2.8		431		Power bump
10	30	3	1		154		Utility outage
10	30	3	1		154		Utility outage
10	31	3	11.5		1771		Utility outage
10	31	3	4		616		Utility outage
10	31	3	3.7		569.8	8/17/20-8/18/20	State Emergency Load Shedding
10	31	3	3		462		Power bump
10	31	3	2.7		416		Power bump
10	31	3	1		154		Utility outage
10	31	3	1		154		Utility outage
10	32	3	11.6		1786		Utility outage
10	32	3	4		616		Utility outage
10	32	3	3		462		Power bump
10	32	3	3		462	8/17/20-8/18/20	State Emergency Load Shedding

Preliminary back-up diesel engine operations (non-testing/non-maintenance) for select facilities in Santa Clara, Sunnyvale, and San Jose

September 1, 2019 - September 30, 2020

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Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
10	32	3	2.7		416		Power bump
10	32	3	1		154		Utility outage
10	32	3	1		154		Utility outage
10	33	3	11.6		1786		Utility outage
10	33	3	4		616		Utility outage
10	33	3	3.7		569.8	8/17/20-8/18/20	State Emergency Load Shedding
10	33	3	3		462		Power bump
10	33	3	2.8		431.2		Power bump
10	33	3	1		154		Utility outage
10	33	3	1		154		Utility outage
10	34	3	11.6		1786		Utility outage
10	34	3	4		616		Utility outage
10	34	3	3.7		569.8	8/17/20-8/18/20	State Emergency Load Shedding
10	34	3	3		462		Power bump
10	34	3	2.9		447		Power bump
10	34	3	1		154		Utility outage
10	34	3	1		154		Utility outage
10	35	3	6		450	8/17/20-8/18/20	State Emergency Load Shedding
10	36	3	2		150	8/17/20-8/18/20	State Emergency Load Shedding
10	37	3	5.5		412	8/17/20-8/18/20	State Emergency Load Shedding
10	38	3	5.5		412	8/17/20-8/18/20	State Emergency Load Shedding
10	39	3	5.5		412	8/17/20-8/18/20	State Emergency Load Shedding
10	40	2.75	8.3		530	8/17/20-8/18/20	State Emergency Load Shedding
11	1	2	5.8	25%	390	8/17/20-8/18/20	Power supplier request
11	1	2	4.1	25%	390	8/17/20-8/18/20	Power supplier request
11	2	2	4.7	31%	280	8/17/20-8/18/20	Power supplier request
11	2	2	3.9	31%	280	8/17/20-8/18/20	Power supplier request
11	3	2	5.6	28%	380	8/17/20-8/18/20	Power supplier request
11	3	2	4.3	28%	380	8/17/20-8/18/20	Power supplier request
11	4	2	5.4	43%	605	8/17/20-8/18/20	Power supplier request
11	4	2	3.5	43%	605	8/17/20-8/18/20	Power supplier request
11	5	0.23	6	17%	27	8/17/20-8/18/20	Power supplier request

Preliminary back-up diesel engine operations (non-testing/non-maintenance) for select facilities in Santa Clara, Sunnyvale, and San Jose

September 1, 2019 - September 30, 2020

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Facility data requested by BAAQMD pursuant to CEC and CARB information request dated 9/17/20 and 9/18/20.

Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
11	5	0.23	3.5	17%	27	8/17/20-8/18/20	Power supplier request
11	6	2	4.5	17%	75	8/17/20-8/18/20	Power supplier request
11	7	2	4.7	8%	75	8/17/20-8/18/20	Power supplier request
11	8	2	4.7	8%	100	8/17/20-8/18/20	Power supplier request
11	9	2	4.7	9%	100	8/17/20-8/18/20	Power supplier request
11	10	2	4.8	11%	100	8/17/20-8/18/20	Power supplier request
11	11	0.23	4.8	7%	30	8/17/20-8/18/20	Power supplier request
12	1	0.23	2.9	14%	87	8/17/20-8/18/20	Utility outage
12	2	2	43	8%	160	8/17/20-8/18/20	Utility outage
12	3	2	42.8	6%	160	8/17/20-8/18/20	Utility outage
12	4	2	38	15%	420	8/17/20-8/18/20	Utility outage
12	5	2	24	55%	500	8/17/20-8/18/20	Utility outage
12	6	2	10	6%	160	8/17/20-8/18/20	Utility outage
12	7	2	10.4	7%	160	8/17/20-8/18/20	Utility outage
12	8	2	42.1	30%	250	8/17/20-8/18/20	Utility outage
12	9	2	41.8	30%	250	8/17/20-8/18/20	Utility outage
12	10	2	10.3	1%	50	8/17/20-8/18/20	Utility outage
12	11	2	10	7%	160	8/17/20-8/18/20	Utility outage
13	1	2	19.8	37%	80.3	Various	Utility power outages; power blips, UPS/board repair
13	2	2	20.4	37%	82.5	Various	Utility power outages; power blips, UPS/board repair
13	3	1.25	14.96	43%	527	Various	Utility power outages; power blips, UPS/board repair
13	4	1.25	14.94	42%	525	Various	Utility power outages; power blips, UPS/board repair
13	5	1.25	14.92	43%	523	Various	Utility power outages; power blips, UPS/board repair
14	1	2.7	1.9	22%	90	11/27/2019	Utility sag event
14	2	2.7	1.9	32%	95	11/27/2019	Utility sag event
14	3	2.7	1.9	1%	57	11/27/2019	Utility sag event
14	4	2.7	1.9	34%	99.75	11/27/2019	Utility sag event
14	5	2.7	4.4	41%	422	8/18/2020	Mandatory load transfer
14	6	2.7	6.3	32%	445	8/18/2020	Mandatory load transfer
14	7	2.7	4.7	2%	139	8/18/2020	Mandatory load transfer
14	8	2.7	4.5	48%	123	8/18/2020	Mandatory load transfer
15	1	2	14	65%	693		

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Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
15	2	2	14	65%	693		
15	3	2	14	65%	693		
15	4	2	14				
15	5	2	14				
15	6	2.5	14	19%	486		
15	7	2.5	14				
16	1	2	2.4	2%	45.6	7/31/2020	Utility power outage
16	2	2	2.4	18%	48	7/31/2020	Utility power outage
16	3	1.5	2.4	30%	40.8	7/31/2020	Utility power outage
16	4	1.5	2.4	25%	38.4	7/31/2020	Utility power outage
17	1	2	2	14%	80	11/26/2019	Commercial power outage
17	2	2	2	14%	80	11/26/2019	Commercial power outage
18	1	2	1.5	30%	150	8/16/2020	Utility power outage
18	1	2	1.5	30%	150	8/25/2020	Utility power outage
18	2	2	1.5	30%	150	8/16/2020	Utility power outage
18	2	2	1.5	30%	150	8/25/2020	Utility power outage
18	3	2	1.5	30%	150	8/16/2020	Utility power outage
18	3	2	1.5	30%	150	8/25/2020	Utility power outage
18	4	2	1.5	30%	150	8/16/2020	Utility power outage
18	4	2	1.5	30%	150	8/25/2020	Utility power outage
18	5	2	1.5	30%	150	8/16/2020	Utility power outage
18	5	2	1.5	30%	150	8/25/2020	Utility power outage
18	6	2	1.5	30%	150	8/16/2020	Utility power outage
18	6	2	1.5	30%	150	8/25/2020	Utility power outage
19	1	1.5	4	20%	200	8/19/2020	Substation transformer power equipment failure
19	2	1.5	4	17%	190	8/19/2020	Substation transformer power equipment failure
19	3	1.5	4	50%	290	8/19/2020	Substation transformer power equipment failure
19	4	1.5	4	60%	310	8/19/2020	Substation transformer power equipment failure
19	5	1.5	4	53%	300	8/19/2020	Substation transformer power equipment failure
19	6	1.5	4	40%	280	8/19/2020	Substation transformer power equipment failure
20	1	3	4.1	42%	410	8/18/2020	State Emergency Load Shedding
20	1	3	3.5	42%	350	9/7/2020	State Emergency Load Shedding

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September 1, 2019 - September 30, 2020

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Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
20	1	3	1.5	42%	150	8/17/2020	State Emergency Load Shedding
20	2	3	4.1	37%	410	8/18/2020	State Emergency Load Shedding
20	2	3	3.6	37%	360	9/7/2020	State Emergency Load Shedding
20	2	3	2.6	37%	250	8/17/2020	State Emergency Load Shedding
20	3	3	4.1	40%	410	8/18/2020	State Emergency Load Shedding
20	3	3	3.6	40%	360	9/7/2020	State Emergency Load Shedding
20	3	3	1.8	40%	180	8/17/2020	State Emergency Load Shedding
20	4	3	4.1	38%	410	8/18/2020	State Emergency Load Shedding
20	4	3	3.6	38%	360	9/7/2020	State Emergency Load Shedding
20	4	3	1.4	38%	150	8/17/2020	State Emergency Load Shedding
20	5	3	4.2	20%	410	8/18/2020	State Emergency Load Shedding
20	5	3	1.1	20%	120	8/17/2020	State Emergency Load Shedding
20	6	3	4.1	17%	410	8/18/2020	State Emergency Load Shedding
20	6	3	1.3	17%	130	8/17/2020	State Emergency Load Shedding
20	7	3	4.1	18%	410	8/18/2020	State Emergency Load Shedding
20	7	3	1.4	18%	140	8/17/2020	State Emergency Load Shedding
20	8	3	4.1	19%	410	8/18/2020	State Emergency Load Shedding
20	8	3	1.4	19%	140	8/17/2020	State Emergency Load Shedding
20	9	3	4.2	15%	420	8/18/2020	State Emergency Load Shedding
20	9	3	1.1	15%	110	8/17/2020	State Emergency Load Shedding
20	10	3	4.1	29%	410	8/18/2020	State Emergency Load Shedding
20	10	3	1.3	29%	130	8/17/2020	State Emergency Load Shedding
20	11	3	4.3	18%	430	8/18/2020	State Emergency Load Shedding
20	11	3	1.4	18%	140	8/17/2020	State Emergency Load Shedding
20	12	3	4.1	19%	410	8/18/2020	State Emergency Load Shedding
20	12	3	1.4	19%	140	8/17/2020	State Emergency Load Shedding
20	13	3	4.1	3%	120	8/18/2020	State Emergency Load Shedding
20	13	3	1.2	3%	40	8/17/2020	State Emergency Load Shedding
20	14	3	4	2%	120	8/18/2020	State Emergency Load Shedding
20	14	3	1.3	2%	40	8/17/2020	State Emergency Load Shedding
20	15	3	4	2%	160	8/18/2020	State Emergency Load Shedding
20	15	3	1.3	2%	50	8/17/2020	State Emergency Load Shedding

Preliminary back-up diesel engine operations (non-testing/non-maintenance) for select facilities in Santa Clara, Sunnyvale, and San Jose

September 1, 2019 - September 30, 2020

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Data Center #	Engine #	Engine Size (MW)	Hours of operation (non-testing/non-maintenance)	Estimated engine load percentage during each non-testing/non-maintenance operations	Estimated fuel usage during each non-testing/non-maintenance operation (gallons)	Date	Explanation of non-testing/non-maintenance operation
20	16	3	2	30%	20	8/17/2020	State Emergency Load Shedding
20	16	3	1.5	30%	20	8/18/2020	State Emergency Load Shedding
20	17	3	0.9	10%	20	8/17/2020	State Emergency Load Shedding
20	17	3	0.8	10%	20	8/18/2020	State Emergency Load Shedding