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The Resources Agency of California

M e m o r a n d u m

To: Commissioner Karen Douglas, Presiding Member
Chair David Hochschild, Associate Member

Date: September 3, 2021

From: California Energy Commission
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Subject: CEC STAFF RESPONSE TO INTERVENOR SARVEY'S REPLY TESTIMONY (20-SPPE-01)

On August 24, 2021, Intervenor Robert Sarvey filed *Great Oaks South Intervenor Sarvey's Reply Testimony* for the Great Oaks South Backup Generating Facility. The following are staff's responses to this filing:

Air Quality

The intervenor confused the proposed Great Oaks South Backup Generating Facility (including the data center) project with the Equinix Data Center in the Great Oaks Mixed Use Project. After the adoption of the Great Oaks Mixed Use Project in 2014, the City of San Jose prepared an Addendum to the Great Oaks Mixed Use Project Final Environmental Impact Report and the Envision San Jose 2040 General Plan Final Supplemental Environmental Impact Report in February 2016¹. The addendum shows more clearly that the Equinix data centers in the Great Oaks Mixed Use Project are Equinix SV10 and SV11, both of which are already built and operating. Equinix data centers SV1 and SV5 are also in that campus and are operating.

The Equinix data centers SV1, SV5, SV10, and SV11 are more than 2,000 feet away from the standby generators of the GOSBGF project site. They are also more than 1,700 feet away from the maximally exposes individual receptors analyzed for the GOSBGF project. As stated in **Section 4.3 Air Quality** of the FEIR, staff followed the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines to do the air quality analysis which includes the cumulative health risk assessment. The BAAQMD CEQA Guidelines recommends including nearby cumulative sources within 1,000-foot radius of the proposed project in the cumulative health risk assessment. The 1,000-foot radius recommended by the BAAQMD is appropriate for the diesel emergency standby engines with short stacks and low plumes that are being proposed for this project. The worst-case impacts of the diesel emergency standby engines would occur at or near the fence line and decrease rapidly with distance from the fence line. According to

¹ City of San Jose, Addendum to the Great Oaks Mixed Use Project Final Environmental Impact Report (SCH# 2013032047) and the Envision San Jose 2040 General Plan Final Supplemental Environmental Impact Report (SCH# 2009072096), dated February 11, 2016. Available online at: <https://www.sanjoseca.gov/home/showdocument?id=20235>.

the Health Risk Calculator provided by BAAQMD, the risk number drops to around 4 percent of the risk at the source when the distance goes to around 1,000 feet for diesel backup generators. Emissions from sources such as diesel backup generators outside of a project's 1,000-foot radius are unlikely to contribute to a significant cumulative impact. Therefore, Equinix data centers SV1, SV5, SV10, and SV11 are not included in staff's cumulative health risk assessment.

However, the residential areas from the Great Oaks Mixed Use Project are shown in **Section 4.3 Air Quality, Figure 4.3-1** on page 4.3-15 of the FEIR. The air quality and public health impacts to these residential areas were evaluated in the FEIR. However, only worst-case ambient impacts for air quality and health risks at maximally exposed individual receptors are shown. The project impacts at the residential areas from the Great Oaks Mixed Use Project would be lower than those shown in **Section 4.3 Air Quality** of the FEIR; therefore, they are not explicitly discussed in the FEIR.

Emergency Operations

Starting from page 4 in **Appendix B**, the FEIR provides a detailed analysis of the "non-testing/non-maintenance" engine operations data provided by the BAAQMD. As staff explained on page 5 in **Appendix B** of the FEIR, the BAAQMD data shows that 75 percent of all engine-hours occurred either during the August 2020 State of Emergency or the subsequent heat event in September 2020. Staff does not consider this a typical year, and the data is probably not representative or indicative of future years. On page 10 in **Appendix B** of the FEIR, staff also acknowledged that the BAAQMD's review of diesel engine use considers more types of reasons for running the engines than solely an electric power service outage. However, although emergency operations could be triggered for a range of situations, including extreme events like those of August and September 2020, this information confirms that regardless of triggering event, emergency operations of standby generator engines would be expected to be infrequent and of short duration. The overall number of hours of operation for the less than half of the facilities in the review that did run was 0.07 percent of the available time. Engine loading levels recorded during these times of use were low (average below 40 percent) and the capacity factor of these engines was extremely low (0.024 percent). Therefore, on page 10 in **Appendix B** of the FEIR, staff concludes that the BAAQMD review confirms that these types of events remain infrequent, irregular, and unlikely and the resulting emissions are not easily predictable or quantifiable and cannot be modeled in an informative or meaningful way. The BAAQMD review does not show that these facilities operate significantly more than staff previously analyzed in the grid reliability context in prior cases.

The intervenor interprets the BAAQMD data for facilities in the City of Santa Clara as one subset of those presented in **Appendix B** to arrive at his estimate of probability of a Santa Clara data center experiencing an outage in a given year. In contrast, staff considers the full scope of the BAAQMD's review including other existing nearby data centers operated by the applicant and those outside of Santa Clara. Mr. Sarvey's estimate supports staff's acknowledgement that "BAAQMD shows more instances of engines running than staff found

in prior cases and longer durations of runtimes during emergency situations (page 10 in **Appendix B** of the FEIR). However, the intervenor used a total of 39 data centers in his calculation, which does not agree with any information in the BAAQMD data (i.e., 66 data centers under BAAQMD jurisdiction, information collected for 45 data centers, 20 data centers reported some "non-testing/non-maintenance" diesel engine use). Evidence from BAAQMD supports staff in the conclusion that engine use occurs only during a very small fraction of the engines' available time. Nothing in the intervenor's estimate contradicts staff's key conclusion, after taking all of the BAAQMD data into consideration, that this type of engine use is "infrequent, irregular, and unlikely and the resulting emissions are not easily predictable or quantifiable and cannot be modeled in an informative or meaningful way" (page 10 in **Appendix B** of the FEIR).

Staff discussed the modeling of emergency operations issue in detail in **Section 4.3 Air Quality** of the FEIR. Staff also specifically addressed the request for modeling of emergency operations from the BAAQMD comment B-4 in **Section 7 Response to Comments**, as shown on pages 7-18 and 7-19 of the FEIR. Staff consulted with the BAAQMD and other air districts regarding modeling of emergency operations. The air quality impacts, especially the short-term (1-hour, 8-hour, and 24-hour) impacts, of standby generator operation during emergencies are not quantified because impacts of emergency operations are typically not evaluated during facility permitting and air districts do not normally conduct an air quality impact assessment of such impacts. An example of a recent BAAQMD analysis of a data center project (China Mobile Data Center) can be found in the Report of Conversation between CEC staff and BAAQMD staff (TN237298). Staff followed the example analysis by the BAAQMD as well as the BAAQMD CEQA Guidelines to do the FEIR of the project. In fact, staff went beyond the requirements of the BAAQMD CEQA Guidelines by conducting an air quality impact analysis for construction and readiness testing and maintenance. Staff also notes that this project is consistent with the joint recommendation letter (December 14, 2020) from the California Air Resources Board (CARB) and the BAAQMD that emphasizes the use of Tier 4 engines as a way to minimize impacts especially during emergency operations (page 7-19 of the FEIR).

As stated in the response to BAAQMD comment B-4 in **Section 7.0 Response to Comments**, on page 7-19 of the FEIR, CEC staff assessed the likelihood of emergency events but finds that assessing the air quality impacts of emergency operations would require a host of unvalidated, unverifiable, and speculative assumptions about when and under what circumstances such a hypothetical emergency would occur. Such a speculative analysis is not required under CEQA (CEQA Guidelines § 15064(d)(3) and § 15145), and, most importantly, would not provide meaningful information by which to determine project impacts.

Staff's response to BAAQMD comment B-4 in **Section 7.0 Response to Comments**, on page 7-19 of the FEIR also states that there is no clear significance threshold to apply to emergency operations and no agency has adopted these thresholds for use in evaluating emergency situations. Staff continues to believe that the best indicator that this project will not result in a significant adverse impact to air quality from emergency operations is the continued infrequency of such events and the fact that in the rare instances when they do occur, they are of limited duration.

GHG Emissions

Staff also contends that participation in the SJCE Total Green Level or equivalent programs would meet the 2030 Greenhouse Gas Reduction Strategy. The project would need to submit to the City an enrollment documentation for SJCE Total Green level or verification by a qualified third-party auditor for alternative equivalent programs. Please see the response to Committee question number 10 for more detailed information in *CEC Staff Response to Order Requesting Supplemental Information in Response to Committee Questions for Great Oaks South Backup Generating Facility Small Power Plant Exemption Proceeding (20-SPPE-01)* filed to the project's docket on September 2, 2021 (TN# 239582).

Alternatives

Mr. Sarvey claims that because Equinix is developing a data center (SV-11) with Bloom Energy's fuel cells, GOS should use fuel cells as an alternative to diesel gensets. SV-11 would use Solid Oxide Fuel Cells (SOFCs) provided by Bloom Energy. SOFCs require high operating temperatures to reach their potential capacity. This means they are slow in reaching operational capacity from cold start, because it requires approximately 60 minutes to several hours to attain the high operating temperatures needed (TN# 239063, page 5-8 and 5-9). However, GOS requires fast startup for backup generation. Therefore, the SOFCs are not suitable for GOS.

As explained in **Section 5.0 Alternatives**, on page 5-8 and 5-10 of the FEIR, for Polymer or Proton Exchange Membrane (PEM) fuel cells to be used, GOS would require 13 times the volume requirements of diesel. However, the hydrogen pipeline infrastructure is too limited and obtaining the needed supply of hydrogen may be problematic.

Mr. Sarvey claims that natural gas fuel supplies are more reliable than diesel fuel. This is misleading. As described in the FEIR on page 5-30, onsite diesel storage provides assurance that fuel can be sustained for a predetermined duration, while storing large amounts of natural gas onsite is not viable.

As stated on page 5-31 of the FEIR, in the event natural gas fuel is cut off, fuel quantity and pressure remaining in the pipeline may not be adequate to last long enough before the utility's electricity or natural gas is restored. Therefore, access to a second pipeline is needed to ensure the reliability requirements of the data center are met. This would make internal combustion engines using natural gas potentially feasible if a second fuel line can be provided to the site.

The above arguments notwithstanding, an alternative technology is not justified for the project because staff has concluded that the proposed project would not result in any significant, adverse impacts to the environment.