DOCKETED	
Docket Number:	19-SPPE-01
Project Title:	Laurelwood Data Center (MECP I Santa Clara I, LLC)
TN #:	230314
Document Title:	Rebuttal Testimony of Robert Sarvey
Description:	Reply testimony
Filer:	Robert Sarvey
Organization:	Robert Sarvey
Submitter Role:	Intervenor
Submission Date:	10/22/2019 3:55:46 PM
Docketed Date:	10/22/2019

State of California
State Energy Resources Conservation and Development Commission

In the matter of:	
Laurelwood Data Center	Docket 19-SPPE-01

REBUTTAL TESTIMONY OF ROBERT SARVEY

The project does not qualify for the Small Power Plant Exemption

Section 1934 of Title 20 provides the purpose of the Small Power Plant Exemption. Section 1934 states, "*It is the policy of the State Energy Resources Conservation and Development Commission to promote the development of electric energy supply technologies that prudently conserve and economically use energy resources. A major purpose of these regulations is to encourage the use of those technologies by expediting the procedures necessary for the approval and development of alternate sources of electric generation."* CEC Staff does not believe that its review of an SPPE application is governed by the purpose stated in Section 1934 of Title 20. CEC Staff claims that, "*regarding innovative or alternative technologies, Section 1934, cited by Mr. Sarvey, is a broad policy statement explaining the reasons for the CEC's enactment of the regulations governing SPPEs. It contains no specific requirements to govern staff's review of this SPPE petition*."[1]

CEC Staffs testimony is that the purpose of Section 1934 the Small Power Plant Exemption is not relevant to the review of the LDC. The purpose of section 1934 is meant to guide the energy commission's review of projects with a generating capacity under 100 MW. A regulation is a rule adopted by a state regulatory agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure. Staff's review procedures do not trump the intent of Section 1934 it's quite the opposite. The purpose of Staff's review is to comply with the purpose of Section 1934, not to define the regulation.

[1] TN 230202 Page 2 of 17

This is very similar to staff's interpretation of the project's generating capacity. In applying Section 2003 the commission staff normally uses a three-step process. First, they determine the gross rating of the project, in this case it would be 168 MW.[2] Then they determine the Coincidental Minimum Auxiliary load, which would be zero in this case. Then they determine the projects generating capacity which is the gross generating capacity minus the auxiliary load. In this case the generating capacity determined pursuant to Section 2003 is 168 MW. Section 2003 also provides that, *"the maximum gross rating cannot be limited by an operator's discretion to lower the output of the turbine generator(s) or by temporary design modifications that have no function other than to limit a turbine generator's output.*" This project is not under 100 MW and does not qualify for the Small Power Plant Exemption. Staff considers the data centers design load of 99 MW as the maximum load of the data center. This method does not comply with Section 2003. Nowhere in Section 2003 does it mention the load from a data center being the generating capacity.

To illustrate how inconsistent this method is, consider the three 100 MW data centers being reviewed by the commission. The first is the approved McLaren data center with 47 generators and a total generating capacity of 129.25 megawatts. The second is the Laurelwood data center with 56 generators and a gross generating capacity of 168 megawatts. The third is the Sequoia Data Center with 47 generators totaling 121.5 megawatts. Under Staff's method of calculating generating capacity, no matter how many megawatts of back up generation are utilized in the project, their generating capacity is still under 100 megawatts.

The commission recognizes that Section 2003 does not provide authorization or a methodology for determining generating capacity for non-grid generation. On August 14, 2009 the Commission initiated a new rulemaking proceeding Docket, 19- SIT-01. According to the OIR, *"The new rulemaking docket is opened to updating title 20 sections 2001 and 2003 relating to the methodology for determining generating capacity of power generating facilities. The rulemaking will amend regulatory language to clarify the methodology for calculating generating capacity for non-grid tied electrical generating facilities."*

[2] 56 Generators X 3MW = 168 MW

On August 17, 2019 I filed a motion to dismiss the proceeding as the project has a generating capacity of 168 MW when applying Section 2003 to determine the projects generating capacity. Abruptly on August 29, 2019, twelve days after filing my motion to dismiss, the Commission canceled the order instituting rulemaking.

At this point it's clear the commission is utilizing some underground regulations to process this and other data center applications. They certainly are not complying with the language or purpose of the Small Power Plant Exemption. Section 2003 does not provide a method where generating capacity can be determined by data center load. Accordingly, the project DOES NOT qualify for SPPE treatment, as the LDC's generating capacity calculated under Section 2003 is 168 MW.

The project's potential to emit NOx emissions is over 100 tons per year

According to the initial study, "*staff does not expect the project would be subject to Title V or PSD.*"[3] In calculating the annual potential to emit for 100 hours of emergency operation as required by BAAQMD's policy, the applicant and staff assumed that 33 generators would operate for 100 hours to meet the 99 MW load of the data center for 100 hours. In doing so the applicant calculated that the emergency generators would emit 94 tons of NOx, assuming 100 hours of emergency operation of 33 engines at full load and 21 hours of testing and maintenance.[4] BAAQMD's policy requiring 100 hours of emergency operation states,

> "Such facilities should presume **that each** of their generators will experience 100 hours per year of emergency operation when calculating their PTE for purposes of determining the applicability of the permitting regulations in Reg. 2 - including the District's New Source Review regulations (Reg. 2, Rule 2) and Title V Major Facility Review regulations (Reg. 2, Rule 6)."[5]

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[3] TN 230202 California Energy Commission Staff Reply to Opening Testimony Page 5 of 17

[4] TN 229116 Laurelwood Data Center Bay Area AQMD Policy Compliance Letter Page 4 of 8

[5] **Calculating Potential to Emit for Emergency Backup Power Generators Page 2 of 5** https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwjL8IOUsqzlAhXJGTQIHSgeDEgQFjAAegQIABAC&url=http%3A%2F%2Fwww.baaqmd.gov%2F~%2Fmedia%2Ffiles%2Fengineering%2Fpolicy_and_procedures%2Fbanking-and-offsets%2Fcalculating-pte-for-emergency-generators-06032019-pdf.pdf%3Fla%3Den&usg=AOvVaw0SWoc-Rde7FdGofg0rwW8b

The BAAQMD policy requires that 100 hours of emergency operation **for each** generator be included in the potential to emit.[6] The project has 56 generators, not 33. The BAAQMD policy would require 100 hours of emissions from each of the 56 generators be included in the potential to emit. One hundred hours of emergency operation from each generator would generate approximately 117 tons of NOx per year. Including the 24.4 tons per year for testing and maintenance emissions, the project would emit 141 tons per year of NOx emissions. The project would be subject to BAAQMD's New Source Review regulations (Reg. 2, Rule 2) and Title V requirements.

Emergency Operation

The initial study concludes that an outage occurring on the Northwest Loop is likely to last a maximum of 7 hours and their emergency operations analysis assumes that this is the longest duration an outage could occur.[7] The initial study acknowledges that wildfire impacts from the PSPS events can occur as the initial study states , "*Wildfire policies could impact SVP's ability to supply power to customers if curtailments on the Pacific Gas and Electric (PG&E) system interrupt SVP's electricity supplies."* The initial study also recognizes that, "*The types of major regional events that are normally excluded from AAQS violation as extreme events could also cause the project to operate the standby engine generators in emergency mode due these events causing regional or local electrical outages."*

Under PG&E's Public Safety Power Shutoff program the LDC could experience an extended outage of multiple days according to PG&E's PSPS website.[8] An extended outage requiring operation of the back-up diesel generators is a reasonably foreseeable event. On October 9, 2019 over 700,000 people in PG&E's service area were without power, some for over three days. The October 9, 2019 public safety shutoff impacted 38,250 customers in Santa Clara County alone.[9]

6 TN 229419 Sequoia Data Center SPPE application 19-SPPE-03 Page 61 of 222
7 Initial Study does model 24 hours of emergency operation for PM2.5 but not NOx
8 https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/public-safety-power-shutoff-faq.page also see Attachment 1 to this testimony
9 https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/public-safety-event.page?WT.mc_id=Vanity_pspsupdates Viewed October 9, 2019

The initial studies' conclusions about air quality impacts from emergency operation are inadequate as they fail to analyze the new reality of possible multiple day shutoffs due to PG&E's PSPS shutoffs.

The project will result in a cumulatively considerable net increase of NOx emissions

The initial study concludes that the LDC will not result a cumulatively considerable net increase of any criteria pollutant as it does, "*not exceed any of the BAAQMD operation emissions significance thresholds"*[10]. In arriving at that conclusion, the initial study does not consider the applicant's projected unmitigated 69 tons of NOx emissions[11] from emergency operation, required to be included in the potential to emit by the new BAAQMD policy. The new BAAQMD policy is not applicable for the purposes of determining emissions offsets or BAAQMD Regulation 2 Rule 5 toxics requirements, and does not apply for emergency fire pump engines. All other new source review and major facility rules apply.

> "When determining the Potential to Emit (PTE) for an emergency backup power generator, the District shall include emissions resulting from emergency operation of 100 hours **per year**, in addition to the permitted limit for reliability-related and testing operation. **Applicability** This assumption of 100 hours per year of emergency operation will be used to determine the applicability of District permitting regulations, such as New Source Review and Title V Major Facility Review.

In applying the BAAQMD regulations for "New Source Review" Section 2-2-604 details how to calculate a cumulative increase under new source review. "*Cumulative Increase Calculation Procedures: The cumulative increase in emissions associated with an authority to construct and/or permit to operate for a source shall be calculated as: 604.1 New Source: The emissions increase associated with a new source is the source's potential to emit.*"

[10] TN 229584 Page 61 of 291

[11] TN 229116 Page 4 of 8 Actual NOx emissions from emergency operation are approximately 117 tons per year. See above the actual total is 117 tons per year of unmitigated NOx emissions.

According to the applicant's calculations, when including emergency operation as required by BAAQMD's new rule, the potential to emit NOx for the emergency generators is 94 tons per year of NOx.[12] According to the initial study the project owner will provide 28.4 tons per year of NOx offsets[13] leaving an unmitigated total of 65.6 tpy of NOx emissions. The BAAQMD annual significance threshold is 10 tpy of NOx so the unmitigated 65.6 tpy of NOx would be a significant impact.

The projects daily NOx emissions computed pursuant to BAAQMD's new back-up generator rule[14] would be approximately 515 pounds per day.[15] The project applicant is offering 28.4 tons per year of ERC's or approximately 155 pounds per day leaving approximately 360 pounds per day of unmitigated NOx emissions, which would be higher than the 54 pound per day significance level, and would be a significant impact.

Cumulative Air Quality Impacts

In CEC Staff's testimony CEC staff utilized BAAQMD CEQA significance levels for stationary source projects permitted by BAAQMD to determine that the project had no significant impacts. In their analysis they conclude that the project's backup diesel generators do not exceed any significance levels for a BAAQMD permitted stationary source, therefore no cumulative impact assessment need be conducted[16] because the project's back up generators do not violate any of the BAAQMD single source significance levels. In making the determination that the projects emissions and criteria pollutant impacts are below significance criteria from BAAQMD CEQA Guidelines, the CEC Staff is applying the significance levels for sources that are permitted by BAAQMD and have no other emission sources.[17] In this case, this project has two components,

[12] **TN #:** 229116 Laurelwood Data Center Bay Area AQMD Policy Compliance Letter Page 4 of 8 Actual potential to emit for emergency generators is 141 tons per year of NOx.
[13] TN 229584 Page 61 of 291
[14] https://www.google.com/search?client=firefox-b-1-d&q=BAAQMD+Calculating+Potential+to+Emit+for+EmergencyBackup+Power+Generators
[15] 94 tons / 365 days
[16] TN 230202 Page7 of 17 The actual amount is approximately 780 pound per day
[17] BAAQMD 2017 CEQ Guidelines Section 5.2.3 Page 60 of 224

the diesel generators that are permitted by BAAQMD and the operations of the LDC that are not permitted by BAAQMD.

According to the BAAQMD CEQA guidelines, some projects have emissions that are permitted by BAAQMD, and some sources which are not permitted by BAAQMD, as is the case here.[18] In those instances, the BAAQMD CEQA guidelines recommend quantifying both the permitted sources and the non-permitted source emissions and compare them to the BAAQMD significance levels. The initial study fails to do so and therefore fails to comply with the BAAQMD CEQA Guidelines that it purportedly uses to evaluate the projects consistency with CEQA.

CEQA is the yardstick the Energy Commission Staff is supposed to use in evaluating this project, not the BAQMD CEQA Guidelines. Unlike the BAAQMD guidelines, CEQA requires that the lead agency must analyze cumulative impacts whenever a proposed project's individual impacts have the potential to combine with related impacts from other projects to compound environmental harm. The Guidelines define cumulative impacts as two or more individual effects which, when considered together, are considerable or compound or increase other environmental impacts. If the proposed project will not make any contribution to the cumulative impact, the lead agency need not address it. **However, if even a tiny portion of the cumulative impact is caused by the proposed project, an EIR must analyze it.** The ultimate goal of this analysis is to determine whether the proposed project's incremental contribution is cumulatively considerable and thus significant. A project's incremental impact may be individually limited, but cumulatively considerable when viewed together with the environmental impacts from past, present, and probable future projects. A proposed project's incremental effects may be cumulatively considerable even when its individual effects are limited. **In other words, CEQA does not excuse an EIR from evaluating cumulative impacts simply because the project-specific analysis determined its impacts would be less than significant. Similarly, a less than significant impact conclusion at the project-level does not guarantee the project's contribution to a significant cumulative impact will be less than cumulatively considerable.**

[18] BAAQMD 2017 CEQ Guidelines Section 5.2.4 Page 61 of 224

Utilities and Service Systems

The initial study claims without analysis that, "*Construction and operation of the project would not require new or expanded electric power utilities. Therefore, potential impacts would be less than significant.*"[19] Currently there are over 656 megawatts of data centers in construction or in review, which is close to SVP's current demand. The CEC itself has approved the 99.4 MW McLaren Data Center, and is reviewing three data centers with a combined load of over 274 MW. The CEC data center applications total 373 MW. The City of Santa Clara has approved another 73.5 MW with the 2175 Martin Avenue Data Center[20], and 60 MW at the 2305 Mission College Data Center, [21] which is located approximately 1,000- feet from the LDC. The 18 MW Core Site is currently under construction.[22] Cyrus 1 has announced land acquisition for a 144 MW site[23] and Digital Realty has announced a site purchase for 48 MW. [24] The publicly available facts demonstrate that Silicon Valley Power will have to obtain additional resources to accommodate the load growth generated by the LDC and other data centers in the SVP service area. According to the 2019 electricity planning forms submitted by SVP to the energy commission, peak load in the SVP service area was 758.8 MW in 2018 and 774 .8 MW in 2017. [25] Silicon Valley Power Authority currently has ownership of 1100.4 MW of generation.[26] The large amount of data centers in review and approved will require new or expanded electric power facilites. Therefore, potential impacts from the LDC in conjunction with other data centers would be significant.

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[19] TN 229584 Page 228 of 291

[20] http://santaclaraca.gov/home/showdocument?id=65138 Page 6of 290

[21] http://santaclaraca.gov/home/showdocument?id=56607 Page 11 of 126

[22] https://datacenterfrontier.com/coresite-buys-expansion-property-in-santa-clara/

[23] https://datacenterfrontier.com/cyrusone-preps-144-megawatt-santa-clara-campus-with-on-site-power/ "The company expects to deploy 96 megawatts of capacity on its first 15-acre property, which it acquired in August for $53.1 million. The adjacent 8-acre parcel will house a 48-megawatt data center." Property also houses a 25 MW co-gen which would reduce its footprint to 123 MW.

[24] https://datacenterfrontier.com/digital-realty-plans-for-next-phase-of-growth-in-silicon-valley-manassas/

[25] https://ww2.energy.ca.gov/almanac/electricity_data/supply_forms_2019/

[26] The planning forms submitted to the CEC show only 854 MW of supply in 2018 https://emma.msrb.org/ER1173549-ER917302-ER1317844.pdf Page 21 of 196

The LDC as proposed has a significant impact on energy resources.

In order to assure that energy implications are considered in project decisions, the California Environmental Quality Act requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. This project wastes large amounts of energy in two ways. First, the project utilizes more generators than necessary to provide 99 MW of back up power. To illustrate this, consider the three data center projects under energy commission review. The first project the McLaren Data Center (17-SPPE-01) utilizes 47 generators with a generating capacity of 129.25 MW to provide 99 MW of backup power for the 99 MW McLaren Data Center. The commission is currently reviewing the Sequoia Data Center with 121.5 MW of generators to back up the 96.5 MW Sequoia project. The LDC is proposing to use 56 generators with a combined generating capacity of 168 MW to support 99 MW. Listed in the table below are the approximate GHG emissions and diesel consumption of all three projects when testing each of the projects' generators for 50 hours.

How many generators does it take to support 99 MW[27]					
GHG Emissions 50 Hours Testing					
Facility	# Generators	Size	Generating Capacity	GHG Emissions	Diesel Gallons
Laurelwood	56	3 MW	168 MW	6,142[28]	605,952
Sequoia	54	2.25 MW	121.5 MW	4,301[29]	423,324[30]
McLaren	47	2.75 MW	129.25 MW	5,044[31]	497,626

Increasing the number of generators to provide 100 MW of backup power has significant GHG and criteria pollutant impacts, due to the fact that each generator must be tested. As shown in the table above the McLaren Data Centers 47 generators total 129.5 MW and tested for 50 hours emits 5,044 metric tons of CO2E per year. In comparison, the LDC, with its 56 generators, totaling 168 MW, testing for 50 hours will emit 6,142 metric tons of CO2E per year. The LDC will also consume approximately

[27] Sequoia Data Center is slightly less than 100 MW

[28] TN 227273 19-SPPE_01 Laurelwood 'SPPE Application Page 101 of 172

[29] TN 229419 19-SPPE-03 Sequoia Data Center SPPE Application Page 128 of 222

[30] Sequoia Data Center load is only 96.5 MW not 100

[31] TN 223911 McLaren Data Center Initial Study Page 106 of 329

108,326 more gallons of diesel fuel to provide the same back up capacity as the McLaren Data Center. The oversizing of the LDC generators leads to excess GHG emissions and diesel consumption which is an inefficient, wasteful and unnecessary consumption of energy, in violation of CEQA.

The second way the project wastes energy is by achieving a PUE of only 1.25. CEC Staff argues that, *"With this lower level of power density per rack, no additional study of PUE would be warranted by Measure 2.3 of the Climate Action Plan."* The climate action plan is not meeting its goals and clearly its mitigation measures cannot be relied upon to demonstrate compliance with CEQA. According to the City of Santa Clara's 2018 CAP progress report, "*The total emissions from 2016 is **1,769,178 MTCO2e.** The GHG emissions from 2008 were 1,854,300 MTCO2e. In conclusion a reduction of 85,122 MTCO2e has been realized. This represents a 4.5% reduction of GHG emissions from the baseline. The City needs to reduce GHG emissions by 10.5% to reach 2020 goals."*[32] The Santa Clara Climate Action Plan has proven that the measures contained in their plan will not achieve the desired 15% GHG emissions reductions to meet its 2020 goals. If the city only achieved a 4.5 % reduction in GHG emissions in eight years (2008-2016) then it is highly unlikely they will reduce another 10.5 % in GHG emission reduction to meet the 2020 GHG emission reduction target in three years.

In its comments on the Santa Clara Climate Action Plan, BAAQMD specifically stated, *"Expand Measure 2.3, Data Center, to require existing rather than just new data center to complete feasibility studies to achieve a power usage effectiveness rating of 1.2 or lower. Staff recommends that this measure also incentivize data center to utilize alternatives to diesel powered back up generators to reduce GHG emissions and 0ther air pollutants from the testing and use of diesel generators."*[33]

BAAQMD further commented on the Mitigated Negative Declaration for the McLaren Data Center Project, "*Finally, the Project could be required to meet a Power Usage Effectiveness (PUE) of 1.2 or less, which would be both consistent with Measure*

[32] City of Santa Clara Climate Action Plan 2018 Report Page 12 of 29
santaclaraca.gov/home/showdocument?id=62433
[33] Exhibit 402

2.3 of the City's Climate Action Plan for extremely large power rack rating data centers and consistent ***with efficiencies achieved at other datacenters (e.g., Google).***"[34] The data centers surrounding the LDC are achieving and proposing PUE's far lower than 1.25. The intel campus located next to the LDC contains data centers. One of the data centers, "*uses close-coupled evaporative cooling that relies on recycled water, to help it to reach an annualized PUE of 1.06.*"[35] "*Elsewhere in the old semiconductor fabrication plant are smaller data centers, including D2P4, which has 5MW of power capacity across 5,000 square feet (465 sq m). Thanks to free air cooling, it, too, has a PUE of 1.06 - "they have exactly the same PUE, but totally different techniques. The two facilities have the lowest PUE of any of Intel's data centers. "We've closed lots of small, inefficient data centers, and are trying to reduce our average PUE across our data centers to near 1.06.*"[36]

The MND for the 2305 Mission College Boulevard Data Center states, "*with implementation of the proposed mechanical and electrical design of the building and the anticipated data center occupancy, the PUE of the data center would be1.09*."[37]

GHG impacts from operation of the emergency generators are significant.

The initial study concludes that the project's emissions from the diesel generators are not significant because the potential to emit from the generators would not exceed the BAAQMD significance level of 10,000 MTCO2e/yr. The initial study estimates that the back-up diesel generators will emit 2,583 MTCO2e/yr while operating for 21 hours a year per engine for testing and maintenance.[38] CEC staff states that it is unsure whether the BAAQMD 2017 CEQA Guidelines require inclusion of GHG emissions from emergency operation in calculating the potential to emit for the GHG emissions of the

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[34] Exhibit 401

[35] **Inside Intel: From silicon fabrication plant, to energy-efficient data center** https://www.datacenterdynamics.com/analysis/inside-intel-silicon-fabrication-energy-efficient-data-center/

[36] **Inside Intel: From silicon fabrication plant, to energy-efficient data center** https://www.datacenterdynamics.com/analysis/inside-intel-silicon-fabrication-energy-efficient-data-center/

[37] http://santaclaraca.gov/home/showdocument?id=56607 Page 71 of 126

[38] TN 229584 Page 160 of 291

backup generators. CEC Staff posits that even if the GHG emissions from emergency operation are included the project's backup generators still emit less than 10,000 MTCO2e/yr, the BAAQMD significance level. CEC Staff argues that the intervenor miscalculated the GHG emissions from emergency operation and testing and that GHG emissions from testing and emergency operation are only 9,833 MTCO2e/yr.[39]

In calculating the GHG emissions from 100 hours of emergency operation, CEC Staff assumed 100 hours of emergency use per year per engine for 33 engines, each operating at 100 percent load and also estimated 100 hours of emergency use per year per engine for 41 engines, each operating at 80 percent load. BAAQMD's policy requiring 100 hours of emergency operation states, "*Such facilities should presume* ***that each*** *of their generators will experience 100 hours per year of emergency operation when calculating their PTE for purposes of determining the applicability of the permitting regulations."* When properly calculating the GHG emissions from the standby generators under the BAAQMD policy, emergency emissions from all 56 emergency generators are to be included in the potential to emit. One hundred hours of emergency operation of each engine will lead to 12,180 MTCO2e/yr of GHG emissions from the backup generators. Including the GHG emissions from 21 hours of testing and maintenance of 2,583 MTCO2e/yr and the 12,180 MTCO2e/yr of GHG emissions from emergency operation provides a potential to emit for the 56 back up diesel generators of 14,763 MTCO2e/yr, which is over the 10,000 MTCO2e/yr BAAQMD significance level. The projects GHG emissions from the back up diesel engines are significant**.**

The indirect emissions from the LDC are significant.

The initial study states that, "*Compliance with appropriate measures in the City's CAP would ensure an individual project's consistency with an adopted GHG reduction plan.*" CEC Staff concludes that, "the project would conform with all applicable plans, policies, and regulations adopted for the purpose of GHG reductions; so, the maximum operation non-stationary source GHG emissions (171,770 MTCO2e/yr) are determined to have less than significant impacts."[40]

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[39] TN 230202 California Energy Commission Staff Reply to Opening Testimony Page 16 of 17

[40] TN 229584 Initial Study/MND Page 164 of 291

The initial study underestimates the LDC's indirect GHG emissions from electricity use. The initial study estimates the indirect GHG emissions from the project's electricity use as 170,170 MTCO2e/yr. In estimating the project's indirect GHG emissions, the initial study utilizes Silicon Valley Power's overall 2017 GHG emissions factor of 430 pounds of CO2e/MWh. As I pointed out in my comments on the initial study, SVP's overall GHG emission factor of 430 pounds of CO2e/MWh is not applicable to the project's GHG emissions. SVP has a residential mix which is 100% renewable but their non-residential power mix is almost identical to the 2018 California Power Mix as can be seen from the 2018 Power Content Label below.

2018 Power Content Label

SILICON VALLEY POWER				
ENERGY RESOURCES	SILICON VALLEY POWER RESIDENTIAL MIX	SILICON VALLEY POWER NON-RESIDENTIAL MIX	SANTA CLARA GREEN POWER (100% VOLUNTARY)	2018 CA POWER MIX**
Eligible Renewable	**45%**	**31%**	**2%**	**31%**
Biomass & Biowaste	0%	2%	0%	2%
Geothermal	0%	5%	0%	5%
Eligible Hydroelectric	0%	13%	0%	2%
Solar	26%	0%	2%	11%
Wind	19%	11%	0%	11%
Coal	**0%**	**0%**	**0%**	**3%**
Large Hydroelectric	**55%**	**11%**	**0%**	**11%**
Natural Gas	**0%**	**34%**	**0%**	**35%**
Nuclear	**0%**	**0%**	**0%**	**9%**
Other	**0%**	**0%**	**98%**	**<1%**
Unspecified sources of power*	**0%**	**24%**	**0%**	**11%**
TOTAL	**100%**	**100%**	**100%**	**100%**

* "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.
** Percentages are estimated annual by the California Energy Commission based on the electricity generated in California and net imports as reported to the Quarterly Fuel and Energy Report database and the Power Source Disclosure program.

CEC Staff's response to the SVP 2018 non-residential power mix chart that I provided stated, "*Thank you for the information.*"[41] The CEC Staff then admits in its testimony that, in fact, SVP's current non- residential power mix matches California power mix. As CEC reply testimony states, "*That SVP's mix matches California's mix today, in one snapshot in time, does not mean that SVP and California's power mix will remain in lockstep as renewables are added, demand and efficiency measures are implemented, and demand changes across California and its electricity providers*."[42] Despite admitting that the SVP's non-residential power mix that will be utilized by the LDC is the same as the 2018 California Power Mix, the CEC Staff fails to reevaluate the project's indirect GHG emissions from electricity use. Utilizing the 2018 California statewide average emissions factor of 1,004 pounds of CO2 per megawatt [43] the projects indirect GHG emissions from the use of energy are approximately 395,059 MTCO2e/yr. That is 233% of the amount of GHG emissions estimated by CEC Staff in the initial study. Additionally, 24% of SVP's non-residential power comes from unspecified sources of power as compared to the 11% unspecified sources of power in the 2018 California Power Mix. The SVP non-residential power mix may in fact have a higher GHG emission rate per megawatt than the 2018 California Power Mix.

<u>The indirect GHG emissions from the LDC are significant.</u>

BAAQMD CEQA guidelines for determining if project level GHG emissions are significant starts with a comparison of the project's GHG emissions to the applicable screening criteria. "*For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy; or annual emissions less than 1,100 metric tons per year (MT/yr) of deCO2e.*"[44] Obviously the project's operational emissions are over 1100 MTCO2e/yr, so in order for the project to be considered less than significant for GHG emissions, the project must be consistent with the Santa Clara Climate Action

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[41] TN 230202 California Energy Commission Staff Reply to Opening Testimony Page 17 of 17

[42] TN 230202 California Energy Commission Staff Reply to Opening Testimony Page 17 of 17

[43] TN 229584 Initial Study/MND Page 162 of 291

[44] BAAQMD 2017 CEQA Guidelines Page 22 of 224 https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwjP7vKGjK7lAhUZITQIHVviC_QQFjAAegQIAxAC&url=http%3A%2F%2Fwww.baaqmd.gov%2F~%2Fmedia%2Ffiles%2Fplanning-and-research%2Fceqa%2Fceqa_guidelines_may2017-pdf.pdf%3Fla%3Den&usg=AOvVaw0_sdwVqNI0nvF1jd9t5JGr

Plan. As the BAAQMD CEQA Guidelines state, *"If a project, including stationary sources, is located in a community with an adopted qualified GHG Reduction Strategy, the project may be considered less than significant if it is consistent with the GHG Reduction Strategy*." In this case the city of Santa Clara has an adopted, qualified GHG reduction strategy called the Santa Clara Climate Action Plan.

The project is not eligible to use the CAP to evaluate full-build emissions to determine its significance under CEQA, because the CAP is based on 2020 GHG reduction goals and this project will not be completed until 2021. Therefore, the IS/MND reliance on the Santa Clara CAP does not provide the substantial evidence needed to justify a less than significant determination.[45]

In addition, in order to utilize the CAP, the Santa Clara CAP would have to demonstrate that it is achieving its planned GHG reductions. Neither the applicant nor staff has made such a showing. According to the City of Santa Clara's 2018 CAP progress report, "*The total emissions from 2016 is **1,769,178 MTCO2e.** The GHG emissions from 2008 were 1,854,300 MTCO2e. In conclusion a reduction of 85,122 MTCO2e has been realized. This represents a 4.5% reduction of GHG emissions from the baseline. The City needs to reduce GHG emissions by 10.5% to reach 2020 goals."*[46] If the city only achieved a 4.5 % reduction in GHG emissions in eight years (2008-2016), then it is highly unlikely they will reduce another 10.5 % in GHG emission reduction to meet the 2020 GHG emission reduction target in three years. The Santa Clara Climate Action Plan has proven that the measures contained in their plan will not achieve the desired 15% GHG emissions reductions to meet its 2020 goals.

FINAL 2017 BAAQMD CLEAN AIR PLAN

The 2017 Bay Area Clean Air Plan defines an integrated, multipollutant control strategy to reduce emissions of particulate matter, TACs, ozone precursors and greenhouse gases. The Bay Area Clean Air Plan states, *"It is especially important to rapidly reduce emissions of those GHGs with very high global warming*

[45] See Exhibit 405 BAAQMD Comments on the Mitigated Negative Declaration for the McLaren Data Center Project Page 1

[46] City of Santa Clara Climate Action Plan 2018 Report Page 12 of 29
santaclaraca.gov/home/showdocument?id=62433

potential, such as methane, black carbon, and F-gases, which we refer to as "super-GHGs" in this document. (The Air Resources Board refers to these compounds as short-lived climate pollutants or SLCPs.)"[47] This project proposes to use 63,550 pounds of R-134a, a very potent super-GHG. According to CEC Staff, using the regulatory leakage rate of 10 percent per year would increase the maximum allowable GHG annual emissions to 4,122 MTCO2e. The Clean air plan uses a value of $62 per metric ton of CO2-equivalent to estimate the avoided social and economic costs related to the anticipated impacts of climate change.[48] The projects potential R-134a leakage would have a societal cost of $255,564 each year. The LDC also emits large amounts of black carbon through its diesel generators, another compound the 2017 Clean Air Plan proposes to eliminate. The project is not consistent with the BAAQMD Clean air Plan.

California SB 100

The initial study claims that as a reduction measure to comply with SB 100, "*This project could significantly reduce GHG emissions by purchasing all of its electricity from Santa Clara Green Power, which is available through SVP.*"[49] The LDC has a maximum electrical usage of 867,240 MWh per year.[50] Santa Clara Green power set a record for delivering clean energy of 423,808 Megawatt-hours in 2017.[51] The power usage of the LDC is twice the record amount of megawatts delivered by Santa Clara Green Energy. It's unlikely that Santa Clara Clean Energy has the resources to serve the LDC and the initial study provides no analysis that it can. Like all of the mitigation measures the applicant proposes and Staff identifies, there is no mitigation measure requiring the project to use Santa Clara Green Power, as required of a CEQA mitigation measure.

The initial study goes on further to state that this, "project could further reduce its GHG impacts by installing solar panels over parking spaces and any roof area not being used for the adiabatic condenser cooling system or other equipment, consistent with a

[47] FINAL 2017 CLEAN AIR PLAN Page
[48] FINAL 2017 CLEAN AIR PLAN Page 15 of 268
[49] TN 229584 Initial Study/MND Page 167 of 291
[50] TN 229584 Initial Study/MND Page 162 f 291
[51] http://www.siliconvalleypower.com/solar-and-green-power/santa-clara-green-power/santa-clara-green-power-faq

City of Santa Clara design review condition, **should one be issued**. [52] There is no condition of certification in the initial study that would require the use of solar panels and it is not clear from the initial study that a Santa Clara design review condition would require it. Like all of the applicant's proposed conditions without a condition of certification, they are not enforceable as required by a mitigation measure under CEQA.

Santa Clara General Plan

The Santa Clara General Plan relies on tiering off the Santa Clara Climate Action Plan to reduce GHG emission by 15% over 1990 levels to avoid a significant and unavoidable impact. As stated in the general plan, "*Through its General Plan policies the City is committed to the preparation, adoption, and implementation of a comprehensive greenhouse gas emissions reduction strategy (Climate Action Plan) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with AB 32" [53]* According to the City of Santa Clara's 2018 CAP progress report, "*The total emissions from 2016 is **1,769,178 MTCO2e.** The GHG emissions from 2008 were 1,854,300 MTCO2e. In conclusion a reduction of 85,122 MTCO2e has been realized. This represents a 4.5% reduction of GHG emissions from the baseline. The City needs to reduce GHG emissions by 10.5% to reach 2020 goals."[54]* The Santa Clara Climate Action Plan has proven that the measures contained in their plan will not achieve the desired 15% GHG emissions reductions to meet its 2020 goals.

Further the Santa Clara General Plan states that the City of Santa Clara's, *"Citywide 2035 GHG emissions are projected to exceed efficiency standards necessary to maintain a trajectory to meet long-term 2050 state climate change reduction goals. Achieving the substantial emissions reductions will require policy decisions at the federal and state level and new and substantially advanced technologies that cannot today be anticipated, and are outside the City's control, and therefore cannot be relied upon as feasible mitigation strategies. Given the uncertainties about the feasibility of*

[52] TN 229584 Initial Study/MND Page 167 of 291
[53] 2010-2035 General Plan ES-8 Integrated Final EIR City of Santa Clara Page 34 of 593 santaclaraca.gov/home/showdocument?id=12900
[54] City of Santa Clara Climate Action Plan 2018 Report Page 12 of 29 santaclaraca.gov/home/showdocument?id=62433

achieving the substantial 2035 emissions reductions, the City's contribution to climate change for the 2035 timeframe is conservatively determined to be cumulatively considerable."[55] Both the Climate Action Plan and the general plan do not meet the GHG reduction goals required by AB 32 and other state policies. Accordingly, the project's GHG emissions are cumulative, considerable and a significant impact requiring preparation of an AFC.

AB 32

AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020, a reduction of approximately 15 percent below emissions expected under a "business as usual" scenario. According to the City of Santa Clara's 2018 CAP progress report, "*The total emissions from 2016 is **1,769,178 MTCO2e.** The GHG emissions from 2008 were 1,854,300 MTCO2e. In conclusion a reduction of 85,122 MTCO2e has been realized. This represents a 4.5% reduction of GHG emissions from the baseline. The City needs to reduce GHG emissions by 10.5% to reach 2020 goals."*[56] The city is not on track to meet the climate reduction goals of AB 32, which requires California to reduce its GHG emissions to 1990 levels by 2020, a reduction of approximately 15 percent below emissions.

The initial study concludes that, *" With implementation of the efficiency measures to be implemented with the project, in combination with the green power mix used by SVP, GHG emissions related to the project would not conflict with the Santa Clara CAP or other plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs."* Clearly, as explained above, Santa Clara's Climate Action Plan is not going to meet its goal of a 15% reduction in GHG emissions by 2020. The Santa Clara Cap only covers the period up until 2020 and is not applicable to the project, which will not commence operation by 2021.[57] The Santa Clara General Plan relies on the measures in the failing Santa Clara Climate Action Plan to achieve its GHG

[55] 2010-2035 General Plan ES-8 Integrated Final EIR City of Santa Clara Page 35 of 593Asantaclaraca.gov/home/showdocument?id=12900

[56] City of Santa Clara Climate Action Plan 2018 Report Page 12 of 29 santaclaraca.gov/home/showdocument?id=62433

[57] The project has a 17 month construction period.

reduction goals. The Santa Clara General plan makes clear that, "*projected 2035 GHG emissions would constitute a cumulatively considerable contribution to global climate change by exceeding the average carbon-efficiency standard necessary to maintain a trajectory to meet statewide 2050 goals as established by EO S-3-05. (Significant Impact).*"[58] As illustrated previously, the power mix of SVP for non-residential projects is almost identical to the State of California Power Mix, so the SVP green power mix does not provide significant mitigation for the projects GHG emissions.[59] The LDC's GHG emissions are significant under BAAQMD's CEQA requirements.

The project will contribute to violations of the Federal Annual and 24 hour PM 2.5 standard when utilizing current air quality data.

Wildfires have had a significant impact on air quality in the project area. Wildfires have led to exceedances of the particulate matter air quality standards in 2017 and 2018 according to the initial study.[60] In 2018 the Jackson Street Station in San Jose exceeded the federal 24 hour PM 2.5 standard and equaled the federal annual PM 2.5 standards largely due to impacts from November wildfires.[61] Above average 1- hour NO2 concentrations have also been recorded at the nearest monitoring station at Jackson Street in San Jose, largely due to wildfire activity.

CEC Staff analyzed the projects air quality impacts and used the annual background value of 10.6 µg/m3 from 2017 to decide whether or not the project violates any air quality standard. The CEC has the more recent annual background data from 2018, as evinced by the testimony in the initial study on page 5.3-4. Using the 2018 data as background demonstrates that the project's annual PM 2.5 impacts will contribute to an exceedance of the Federal annual PM2.5 standard of 12 µg/m3, as the

[58] 2010-2035 General Plan ES-8 Integrated Final EIR City of Santa Clara Page 34 of 593 santaclaraca.gov/home/showdocument?id=12900

[59] http://www.siliconvalleypower.com/svp-and-community/about-svp/power-content-label

[60] TN 229584 Laurelwood Data Center Initial Study and Proposed Mitigated Negative Declaration Page 49 of 281

annual background data for 2018 is already at the Federal PM2.5 annual limit of 12 µg/m3.

Attachment 1

SVP News List

Public Safety Power Shutoff Update

Post Date:10/11/2019 5:00 PM

We heard it all over the news for months now, and it finally happened… a Public Safety Power Shutoff (PSPS). Thankfully, due to our urban, flat location, we got through it without a hitch. While we didn't lose power in Santa Clara, some of our neighbors in surrounding cities did. We at the City of Santa Clara and our electric utility, Silicon Valley Power, can't thank you enough for your cooperation and understanding as we navigated our first ever PSPS event. Through community outreach both in-person and online via email, web and social media, we aimed to canvas as much ground as we could so that you stayed informed about any impacts that may come from a power shutoff.

Here are some key takeaways from this experience:

- **High wildfire threat elsewhere could affect us here** – Although Santa Clara residents may not live in a high wildfire threat area, power may be shut off due to transmission lines running through an area that's experiencing extreme wildfire danger conditions. Some areas did experience high wind speeds but not everywhere in the region. Even so, the South Bay was affected with power outages due to the interconnected nature of the power grid.
- **We are not immune to power shutdowns or any other electric emergency** - While we are unique that Silicon Valley Power operates and maintains our own local power grid, we still rely on the joint/interconnected transmission lines throughout the State of California to deliver our solar, wind, hydroelectric and geothermal to deliver the bulk of electricity to Santa Clara. Fortunately, these lines were not impacted by the recent PSPS.
- **Technology is not reliable** – As we saw when people from 40 counties and around the U.S. tried to access PG&E's website at the same time, it crashed. Make sure you are signed up to receive alerts from the City and Silicon Valley Power. If technology is completely down, we will take paper copies of information to City facilities such as libraries, the senior center and City Hall as soon as we receive it.
- **Have a personal safety plan in place** – Some areas affected by this event were without cell service and internet access was spotty. It is important to know how you will communicate with your loved ones. Get to know your neighbors so you can share resources, information and have another set of eyes watching over your belongings.
- **Plan for any medical needs** – What do you do if you depend on electricity for your medical needs? Have a backup plan in case of an unexpected emergency.
- **Build an emergency supply kit** – Californians affected by the power shutdown experienced long lines at the gas station and empty shelves at the grocery store where water once sat. Don't wait for the next emergency to stock up.

At this time, PG&E is still working on inspecting and repairing lines that were shut down throughout Santa Clara County and will continue to restore power to communities still left in the dark.

The wildfire season isn't over yet and another PSPS event could happen again in the coming months. Remember to have a personal safety plan in place and follow Silicon Valley Power on Twitter, twitter.com/SantaClaraPower. If and when Santa Clara is impacted by a PSPS, we will share information with you as soon as possible.

We hope that we never have to feel the effects of a Public Safety Power Shutoff in the City of Santa Clara, but if we do, our employees are ready to assist in serving the community. From all of us here at the City of Santa Clara, may you all have a safe weekend filled with light, hot water and working traffic signals.

http://www.siliconvalleypower.com/Home/Components/News/News/39541/6271?backlist=%2fsvp-and-community%2fnews-and-announcements

RESUME OF ROBERT SARVEY

Academic Background
BA Business Administration California State University Hayward, 1975
MBA Tax Law California State University Hayward, 1985

Experience

San Joaquin Valley Air Pollution Control District Citizens Advisory Board Industry Representative: Analyzed proposed air quality regulations and made recommendations to the Governing Board for approval.

GWF Peaker Plant 01-AFC-16: Participated as an Intervenor in the project and helped negotiate and implement a 1.3 million dollar community benefits program. Successfully negotiated for the use of local emission reduction credits with GWF to offset local air quality impacts.

Tesla Power Project 01- AFC-04: Participated as an Intervenor and provided air quality testimony on local land use and air quality impacts. Participated in the development of the air quality mitigation for the project. Provided testimony and briefing which resulted in denial of the PG&E's construction extension request.

Modesto Irrigation District 03-SPEE-01: Participated as an Intervenor and helped negotiate a $300,000 air quality mitigation agreement between MID and the City of Ripon.

Los Esteros: 03-AFC-2 Participated as an Intervenor and also participated in air quality permitting with the BAAQMD. Responsible for lowering the projects permit limit for PM-10 emissions by 20%.

SFERP 4-AFC-01: Participated as an Intervenor and also participated in the FDOC evaluation. My comments to the BAAQMD resulted in the projects PM -10 emission rate to be reduced from 3.0 pounds per hour to 2.5 pounds per hour by the District. Provided testimony on the air quality impacts of the project.

Long Beach Project: Provided the air quality analysis which was the basis for a settlement agreement reducing the projects NOx emissions from 3.5ppm to 2.5ppm.

ATC Explosive Testing at Site 300: Filed challenge to Authority to Construct for a permit to increase explosive testing at Site 300 a DOE facility above Tracy. The permit was to allow the DOE to increase outdoor explosions at the site from 100 pounds per charge to 300 pounds per charge and also grant an increased annual limit on explosions from 1,000 pounds of explosive to 8,000 pounds of explosives per year. Contested the permit and succeeded in getting the ATC revoked.

CPUC Proceeding C. 07-03-006: Negotiated a settlement with PG&E to voluntarily revoke Resolution SU-58 which was the first pipeline safety waiver of GO112-E granted in the State of California. Provided risk assessment information that was critical in the adoption of the Settlement Agreement with PG&E which, amongst other issues, resulted in PG&E agreeing to withdraw its waiver application and agreeing to replace the 36-inch pipeline under the sports park parcel after construction.

East shore Energy Center: 06-AFC-06: Intervened and provided air quality testimony and evidence of cancellation of Eastshore's power purchase agreement with PG&E.

Colusa Generating Station: 06-AFC-9: Participated as air quality consultant for Emerald Farms. Filed challenge to the PSD Permit.

CPUC proceeding 08-07-018: Tesla Generating Station CPCN participated in proceeding which was dismissed due to motion by IEP. Reviewed all filings, filed protest, signed confidentiality agreement and reviewed all confidential testimony.

GWF Tracy Combined Cycle 08-AFC-07: Participated in negotiation of the Air Quality Mitigation Agreement with the San Joaquin Valley Air Pollution Control District and GWF.

CPUC Proceeding 09-09-021: Provided Testimony that demonstrated PG&E failed to follow its environmental protocol in the LTPP. Provided testimony and evidence that PG&E's need had fallen since 2007 and that the Commission should limit PG&E's procurement to the 950-1000 MW Range.

CPUC Proceeding A. 09-04-001: Demonstrated PG&E had violated terms of Mariposa Settlement Agreement. PG&E was fined $25,000 for breach of settlement.

CPUC Proceeding A. 09-10-022: Provided Testimony on behalf of CAlifornians for Renewable Energy. Provided confidential evaluation of PPA value. Provided testimony and evidence that PG&E had violated the Mariposa Settlement. Provided testimony that demonstrated PG&E's demand had fallen sharply since the issuance of D. 07-12-052.

Oakley Generating Station 09-AFC-04: Participated as an intervenor. Provided testimony in Alternatives, Air Quality, Environmental Justice, and Water Quality. Negotiated settlement with CCGS to not use ERC's and instead exclusively use 2.5 million dollars to create real time emission reductions through BAAQMD real time emission reduction programs.

Pio Pico PSD Permit: Participated in the Pio Pico PSD permit. Comments resulted in a remand to the air district and a lowering of particulate matter emission limits by 10%

CPUC Proceeding A.11-12-003: Was credited by the decision for demonstrating that an additional 5 MW of firm capacity was not needed from the Thermal Energy Biomass Plant. Decision led to the plants closure.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of McLaren Laurelwood Data Center
Docket Number 19-SPPE-01

Declaration of Robert Sarvey

I Robert Sarvey Declare as Follows:

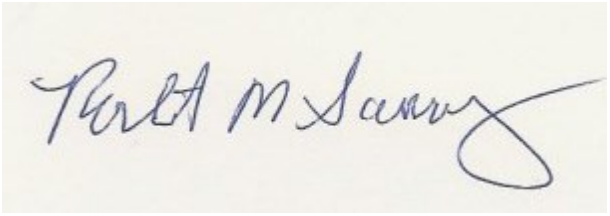
1. I prepared the attached rebuttal testimony on the IS/MND for the Laurelwood Data Center.

2. A copy of my professional qualifications and experience is included with this Testimony and is incorporated by reference in this Declaration.

3. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed in Tracy, California on October 22, 2019.



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