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San José City Data Center (19-SPPE-04)

Responses to CURE Data Requests Set 1A
(Data Request 24)

Submitted to
California Energy Commission

Prepared by
Microsoft Corporation

with technical assistance from

JACOBS[®]

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Introduction

Consistent with the Committee Order dated September 16, 2020 (Transaction Number 234779), the Applicant Microsoft Corporation (Microsoft or the Applicant) hereby submits a response to the California Unions for Reliable Energy (CURE) Data Request #24, regarding the San José City Data Center (SJC02) (19-SPPE-04) Small Power Plant Exemption (SPPE). The Committee's Order directed Microsoft to file the greenhouse gas (GHG) emission factors and the source of such factors used in its GHG emissions analysis no later than September 25, 2020.

Air Quality (CURE Request 24)

24) All estimates of emissions associated with electricity consumption.

Response: The Applicant’s SPPE Application included estimated GHG for electrical use during operation in Section 3.8, Table 3.8-3 (TN 230741). Table 3.8-3, reproduced below for convenience, shows energy use GHG emissions of 253,279 metric tons per year of carbon dioxide equivalent (CO₂E), which was based on the data center requiring electricity 24 hours a day to operate. The projected maximum demand for the entire project is 91.75 megawatts (MW). On an annual basis, the project would consume up to the maximum electrical usage of 803,730 MWh per year. However, to provide maximum project flexibility, GHG emission estimates for energy use were based on a maximum demand of 99 MW, or 867,240 MWh per year, which is the maximum allowed for projects eligible for the Small Power Plant Exemption under California Energy Commission regulations.

Table 3.8-3. Greenhouse Gas Emissions from Energy Use, Cooling Units, Mobile Sources, Area Sources, Water Use, and Waste Generation During Project Operation

Source	Annual Emissions (Metric Tons per Year of CO ₂ e)
Energy Use ^a	253,279
Cooling Units	55.2
Mobile Sources ^b	457
Area Sources ^c	0.01
Water Use	27.9
Waste Generation	303
Total	254,122

^a Energy use emissions include emissions from electricity use.

^b Mobile source emissions include emissions from worker commute and vendor trips.

^c Area source emissions include emissions from architectural coatings, consumer products, and landscaping.

The background data for Table 3.8-3 was provided previously to the Intervener in response to CURE Data Request # 23 (Transaction Number 234057). The GHG emissions presented in Table 3.8-3 were based on the California Emissions Estimator Model (CalEEMod), which was used to analyze operational air emissions from non-point sources. However, using Pacific Gas and Electric Company’s reported 2018 delivered electricity GHG emissions factor of 206 pounds of CO₂ per megawatt-hour¹ (lb/MWh) and assuming the project consumes 867,240 MWh (99 MW * 8760 hours per year) of electricity, the resulting GHG emissions are 178,651,440 pounds of CO₂ or 81,034.9 metric tons of CO₂ per year.

¹ https://www.pgecorp.com/corp_responsibility/reports/2019/en02_climate_change.html#en1_fn2