



Attachment 5

Rincon Consultants, Inc.

209 East Victoria Street
Santa Barbara, California 93101

805 319 4092 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

May 8, 2020
Project No: 19-08526

Goleta Energy Storage, LLC
c/o: Ryan Hulett, Principal
8614 Westwood Center Drive, Suite 1800
Vienna, Virginia 22182

Subject: Supplemental Air Quality and Greenhouse Gas Modeling Results for the Goleta Energy Storage, LLC Project, 6864 and 6868 Cortona Drive, Goleta, California

Dear Mr. Hulett:

Rincon Consultants, Inc. (Rincon) completed additional criteria air pollutant and greenhouse gas (GHG) emissions analysis for the Goleta Energy Storage, LLC Project as a supplement to the air quality and GHG modeling memorandum dated January 22, 2020. The purpose of this additional modeling is to evaluate operational emissions associated with the project's electricity consumption. According to Tesla, the proposed project would consume approximately 674 megawatt-hours (MWh) annually, which would be approximately 0.77 percent of the electricity it would produce (approximately 87,600 MWh).¹

Methodology

The California Emissions Estimator Model (CalEEMod) only calculates direct emissions of criteria pollutants from energy sources that combust on site, such as natural gas used in a building. CalEEMod does not calculate or attribute emissions of criteria pollutants from electricity generation to individual projects because fossil fuel power plants are existing stationary sources permitted by air districts and/or the United States Environmental Protection Agency, and they are subject to local, State, and federal control measures. Criteria pollutant emissions from power plants are associated with the power plants themselves, and not individual projects or electricity users. Additionally, criteria pollutant emissions from power plants are subject to local, State, and federal control measures, which can be considered to be the maximum feasible level of mitigation for stack emissions.² Therefore, this analysis does not evaluate criteria pollutant emissions from electricity use.

However, GHG emissions from power plants are not subject to stationary source permitting requirements to the same degree as criteria air pollutants, and mitigating GHG emissions using exhaust after treatment control technologies is difficult. Therefore, GHG emissions from power plants may be indirectly attributed to individual electricity users, who have the greatest ability to decrease usage by applying mitigation measures to individual electricity "end uses."³ GHG emissions from energy

¹ Perez, Laurel. 2020. Principal Planner, Suzanne Elledge Planning & Permitting Services, Inc. Personal communication via email regarding the project's energy consumption with Melissa Whittemore, Senior Environmental Planner, Rincon Consultants, Inc. May 6, 2020.

² California Air Pollution Control Officers Association. 2017. California Emissions Estimator Model User Guide: Version 2016.3.2. Prepared by BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts. <http://www.aqmd.gov/docs/default-source/caleemod/user's-guide---october-2017.pdf?sfvrsn=6> (accessed May 2020).

³ Ibid.



consumption were calculated in Excel using CalEEMod energy emissions factors (i.e., the amount of carbon dioxide, methane, and nitrous oxide per kilowatt-hour) for Southern California Edison (SCE). Electricity emissions are calculated by multiplying the energy use times the carbon intensity of the utility district per kilowatt-hour.⁴ The energy intensity factors included in CalEEMod are based on 2012 data by default at which time SCE had only achieved a 20.6 percent procurement of renewable energy. Per Senate Bill 100, the statewide Renewable Portfolio Standard Program requires electricity providers to increase procurement from eligible renewable energy sources to 33 percent by 2020. To account for the continuing effects of the Renewable Portfolio Standard, the energy intensity factors included in CalEEMod were reduced based on the percentage of renewables reported by SCE. SCE energy intensity factors that include this reduction are shown in Table 1.

Table 1 SCE Energy Intensity Factors

	2009 (lbs/MWh)	2020 (lbs/MWh)
Percent procurement	20.6% ¹	33% ²
Carbon dioxide (CO ₂)	702.44	592.74
Methane (CH ₄)	0.029	0.024
Nitrous oxide (N ₂ O)	0.006	0.005

lbs = pounds; MWh = megawatt-hour

¹ Source: Southern California Edison. 2012. 2012 Corporate Responsibility & Sustainability. https://www1.sce.com/wps/wcm/connect/68145014-2eba-40c2-8587-6482ce056977/CRR_08202013.pdf?MOD=AJPERES&ContentCache=NONE (accessed May 2020).

² Renewable Portfolio Standard goal established by Senate Bill 100

Analysis

Criteria Air Pollutants

As discussed under *Methodology*, criteria pollutant emissions from electricity use are not attributed to individual projects because they are regulated at the power plant level with mitigation applied to stack emissions. Therefore, no revisions to the operational emissions modeling included in the air quality and GHG modeling memorandum dated January 22, 2020 are necessary.

Greenhouse Gas Emissions

Table 2 summarizes the project's combined construction and operational GHG emissions, including energy emissions from the project's electricity consumption. As shown therein, combined GHG emissions would be approximately 196 metric tons of carbon dioxide equivalents per year.

⁴ Ibid.



Table 2 Combined Annual Emissions of Greenhouse Gases

Emission Source	Proposed Project Emissions (MT of CO ₂ e)
Construction ¹	8.4
Decommissioning ¹	5.2
Electricity Usage ²	181.3
Water ¹	< 0.1
Mobile¹	
CO ₂ and CH ₄	1.0
N ₂ O	< 0.1
Total Project Emissions	195.9

MT = metric tons; CO₂e = carbon dioxide equivalents; CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrous oxide

¹ Emissions estimates were sourced from the air quality and GHG modeling memorandum dated January 22, 2020.

² Emissions modeling was completed using standalone electricity emissions calculations in accordance with applicant-provided information and data. See Attachment 1 for modeling results.

Conclusion

The additional modeling does not change the conclusions of the air quality and GHG modeling memorandum dated January 22, 2020. Criteria air pollutant emissions would not exceed Santa Barbara County Air Pollution Control District suggested thresholds, and the project would be consistent with the California Air Resources Board 2017 Climate Change Scoping Plan.

Thank you for the opportunity to assist with this assignment. Please do not hesitate to contact us if you have questions about this report.

Sincerely,
Rincon Consultants, Inc.

Annaliese Miller
Associate Environmental Planner

Jennifer Haddow, PhD
Principal Environmental Scientist

Attachment

Attachment 1 Energy Emissions Modeling Results

Attachment 1

Energy Emissions Modeling Results

Goleta Energy Storage Project Energy Calculations

GHG emissions from energy usage were calculated using energy emissions factors for SCE adjusted for the 2020 RPS. Conversions of CH4 and NO2 to CO2e were made using U.S. EPA's Greenhouse Gas Equivalencies Calculator.

**Energy Usage
(MWH/year)**
674

	Emissions Factors (lbs/MWh)	Emissions (lbs)	Emissions (MT)	Emissions (MT of CO2e)
CO2	592.74	399506.76	181.2	181.2
CH4	0.024	16.176	0.01	0.015
N2O	0.005	3.37	0.002	0.037
			Total	181.3

- Greenhouse gas conversions performed using the U.S. EPA's Greenhouse Gas Equivalencies Calculator. Available at: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>