

**DOCKETED**

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<b>Project Title:</b>	STACK SVY03A Data Center Campus
<b>TN #:</b>	254766
<b>Document Title:</b>	SVY03A Campus Supplemental Data Responses Set 1 DR-9
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# SUPPLEMENTAL RESPONSE TO CEC STAFF DATA REQUEST SET 1 (DR-9)

STACK SVY03A Campus (23-SPPE-01)

SUBMITTED TO: CALIFORNIA ENERGY COMMISSION

SUBMITTED BY: **STACK Infrastructure**

March 2024



## **INTRODUCTION**

Attached is STACK Infrastructure's (STACK) supplemental response to California Energy Commission (CEC) Staff Data Request number 9 (CC Staff Set No. 1) for the SVY03A Data Center Campus (SVY03A Campus) Application for Small Power Plant Exemption (SPPE) (23-SPPE-01).

**AIR QUALITY AND GREENHOUSE EMISSIONS**

**BACKGROUND: Insulative Gas Used in Circuit Breakers and Transformers**

**On page 31 of Part 1 of the application, the PG&E switchyard and the project substation will not use sulfur hexafluoride (SF6) unless the short circuit current rating is greater than 63kA to align with California Air Resources Board (CARB) requirements.**

**DATA REQUEST**

- 9. Please discuss the alternative that will be used instead of SF6 and quantify the GHG emissions associated with the alternative.

**RESPONSE TO DATA REQUEST 9**

There are two alternatives under consideration for equipment that will not use SF6. However, the actual alternative will not be selected until the design of the SVY03 Campus progresses. One alternative from Siemens uses N2 and O2 and therefore would not have any GHG emissions from leakage.

The other alternative is from Hitachi/ABB. The gas mixture used in this equipment is C4-FN and an estimate of the associated GHG emissions from potential leakage.

**CO2e Emissions Calculations for C4F7N Gas**

Substance	Mol%	Mol Wt.	Wt%
C4F7N	5	195	19.504
CO2	82	44	72.174
O2	13	32	8.322 (not a GHG, not further considered)

**System Capacity:** 500 kg which equals 1102.3 lbs

C4F7N = 214.99 lbs

CO2 = 795.57 lbs

**Annual Leak Rate of System:** 0.3% wt which equals 0.003 (wt fraction)

<b>Leakage</b>	<b>GWP</b>
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C4F7N = 0.645 lbs/yr	2750
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CO2 = 2.39 lbs/yr	1
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**Total CO2e Emissions**

C4F7N = 1773.75 lbs/yr

CO2 = 2.39 lbs/yr

= 1776.1 lbs CO2e/yr

= 0.89 tons CO2e/yr