

Exhibit to Agenda Item #1.a.

Provide the Board an overview of methane, a greenhouse gas, including SMUD's tracking and monitoring efforts.

Board Strategic Development Committee and Special SMUD Board of Directors Meeting

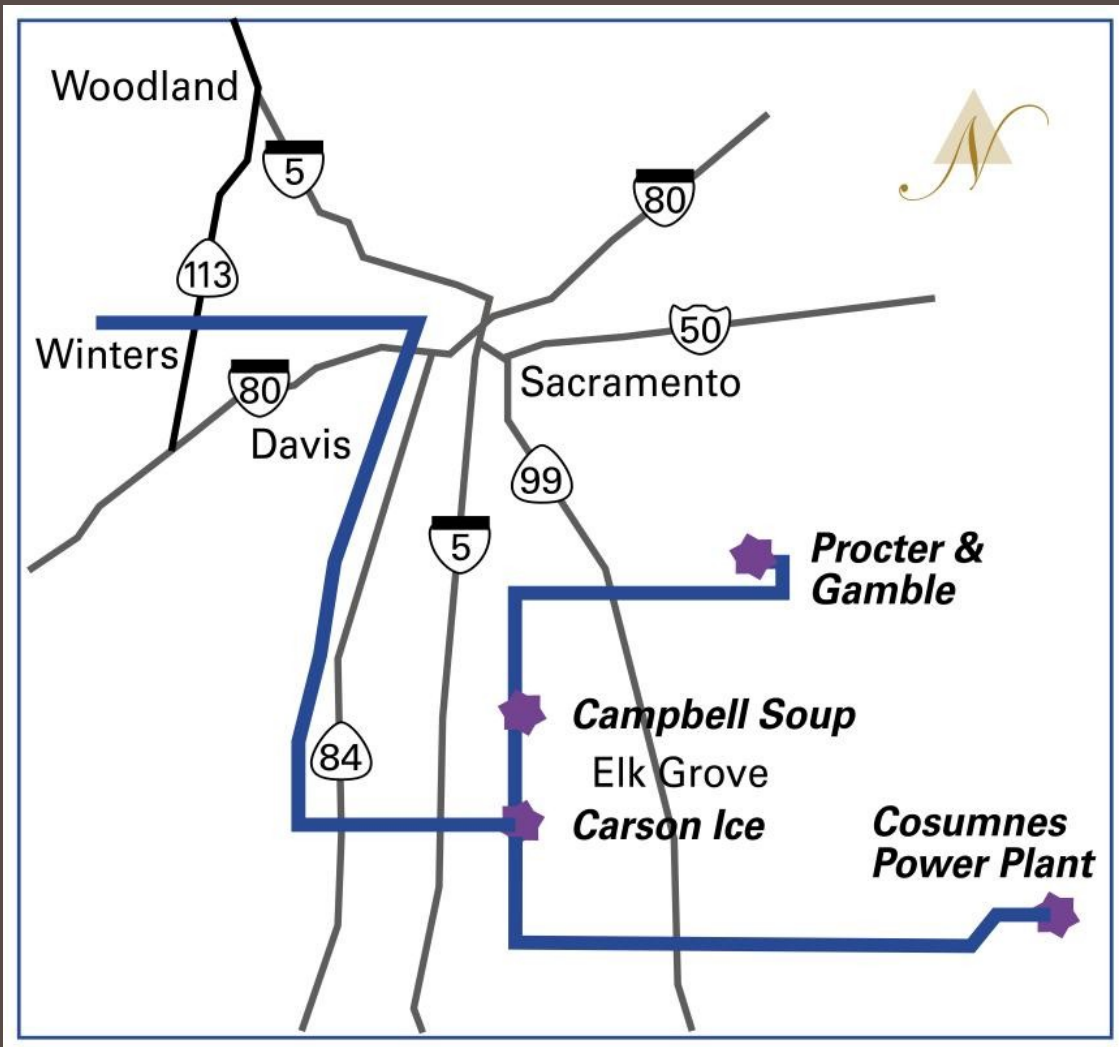
Tuesday, June 8, 2021, scheduled to begin at 5:30 p.m.

Virtual Meeting (online)

Agenda

- Overview of SMUD Natural Gas (NG) Pipeline
- Source of Methane Emissions
- SMUD Methane Emissions Reporting
 - Information on organizations that SMUD reports to
 - Reported methane emissions values
- California Air Resources Board (CARB) Requirements for NG Pipeline
 - Cap and Trade Obligation (Responses from CARB)

SMUD Natural Gas Pipeline



- Natural gas is received from PG&E at Winters station and delivered to SMUD's thermal plants.
- Pipeline properties
 - 20-inch (50 miles, Winters to Procter and Gamble)
 - 24-inch (26 miles Carson to CPP) diameter pipelines
- In 2020, delivered about 38 billion cubic feet of natural gas
- For reference, about 2,000 billion cubic feet of NG is consumed in California per year.¹

1. Source: https://www.eia.gov/dnav/ng/hist/na1490_sca_2a.htm

Methane Emissions from Pipeline Operations



- Methane (CH_4) is the main compound found in Natural Gas
- As a greenhouse gas (GHG), Methane is about 28 times more potent than CO_2
- Fugitive methane emissions occur from loose flanges, valves, compressors and interconnections
- Emissions may occur during regular maintenance (blowdown emissions)

SMUD Fugitive Methane Emissions Reporting

- Currently, there are no mandatory requirements on SMUD to report on emissions associated with natural gas deliveries to SMUD.
- Fugitive methane emission reporting is done by SMUD on a voluntary basis:
 - Fugitive emissions from SMUD's pipeline are reported to The Climate Registry (TCR)
 - Upstream methane emissions are reported to CDP (formerly the Carbon Disclosure Project).
 - Voluntary reports are verified by an independent 3rd party.
- Greenhouse gas emissions from SMUD's pipeline are calculated for in CARB's Cap and Trade Program as explained in later slides.

The Climate Registry (TCR)

- A non-profit organization that empowers North American organizations to reduce their carbon footprint
- Established in 2007
 - Formerly the California Climate Action Registry (CCAR) which was established in 2001.
- SMUD has been reporting to TCR/CCAR since 2002
 - For calendar year 2018 and 2019 reporting, SMUD received a platinum certification level of recognition from TCR.



CDP Climate Change Benchmarking



Moving to sector-based disclosure and focusing in on company-specific details

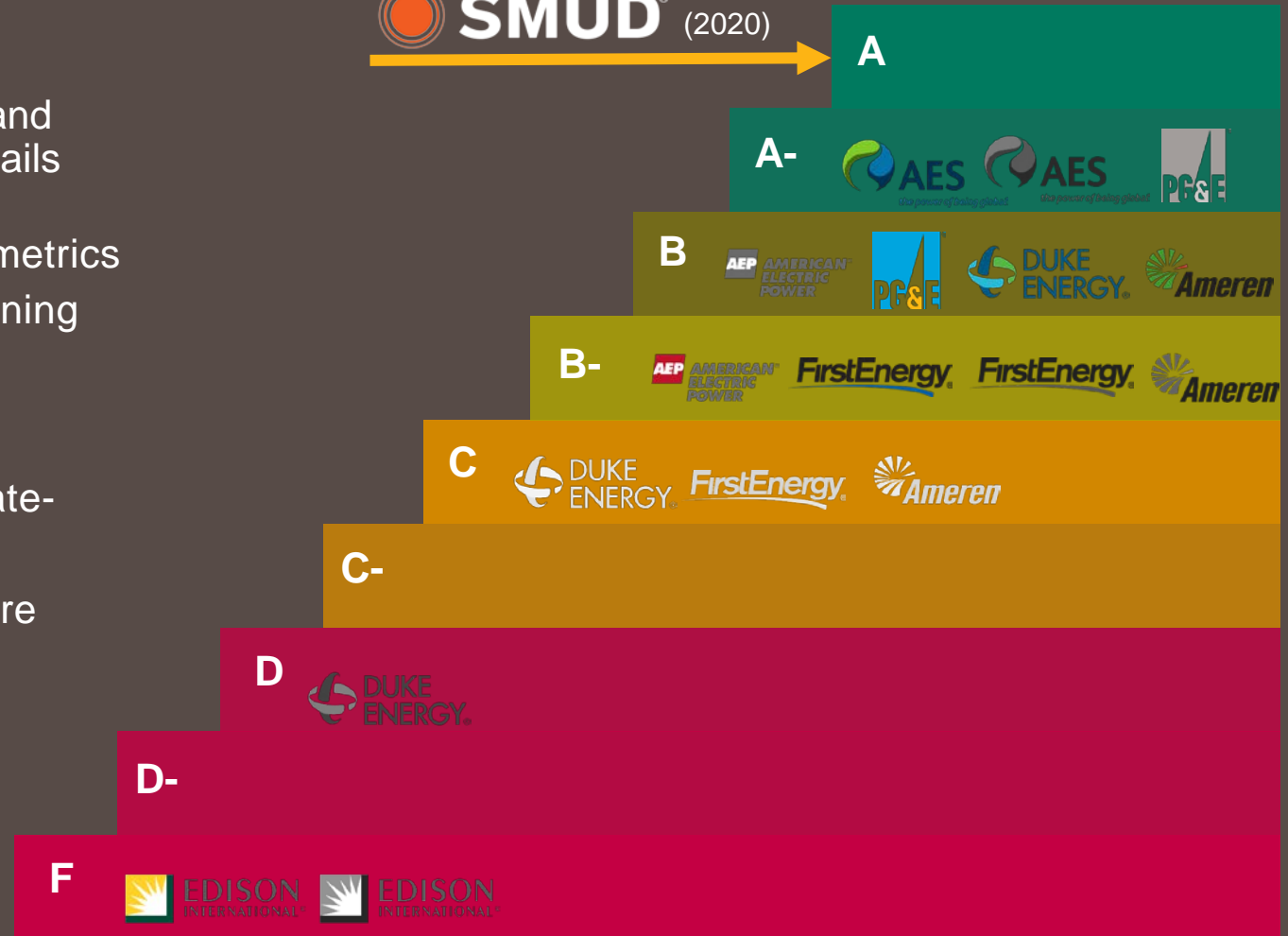


Requesting more forward-looking metrics to assess how companies are planning for the transition to a sustainable economy



Integrated the Task Force on Climate-related Financial Disclosure recommendations into the disclosure platform

 **SMUD**[®] (2020)



Methane Emissions from SMUD NG Pipeline

Year	Fugitive Methane Emissions (Metric Ton of CO ₂ eq) (calculated, not directly measured)	Pipeline Maintenance Methane Emissions (Metric Ton of CO ₂ eq)
2015	5,756	0
2016	5,756	0
2017	5,756	336
2018	5,756	912
2019	5,756	0

1. Methane emission values are verified by an Independent 3rd Party using the protocols and guidance developed by The Climate Registry (TCR).
2. The methane emissions values shown here represent emissions directly from SMUD's NG Pipeline. It does not account for any methane emissions that may occur prior to SMUD receiving natural gas at Winters.

Natural Gas Pipeline Emissions and Cap and Trade

Questions from SMUD Staff to CARB

1. Is our understanding correct, that all NG whether it is combusted, vented, or escapes via fugitive emissions are captured under CARB's mass balancing accounting?
2. If so, is our understanding correct, that fugitive emissions and venting from PG&E are in fact being captured under Cap & Trade and PG&E has a carbon obligation for fugitive emissions and venting?

Natural Gas Pipeline Emissions and Cap and Trade

1. Is our understanding correct, that all NG whether it is combusted, vented, or escapes via fugitive emissions are captured under CARB's mass balancing accounting?

Response 1

“Correct. Natural gas suppliers report emissions to CARB pursuant to the mass balance method in section 95122 of CARB’s Mandatory Reporting Regulation. Natural gas suppliers report emissions for all net natural gas received at its boundaries (including storage) unless the natural gas is supplied to another natural gas supplier. The emissions reported to CARB for the natural gas supplier are the emissions that would result from combustion of all the supplied natural gas calculated via this mass balance method. Additionally, per section 95852(c) of the Cap-and-Trade Regulation, natural gas suppliers have a compliance obligation for the net emissions that are calculated in this manner, minus the emissions from all natural gas that is supplied to facilities with a direct Cap-and-Trade Program compliance obligation”- CARB Correspondence, 5/19/2021

Natural Gas Pipeline Emissions and Cap and Trade

2. If so, is our understanding correct, that fugitive emissions and venting from PG&E are in fact being captured under Cap & Trade and PG&E has a carbon obligation for fugitive emissions and venting?

Response 2A:

“Correct. Per section 95852.2(b)(3) of the Cap-and-Trade Regulation, vented and fugitive emissions from natural gas transmission and distribution do not separately incur a compliance obligation because the quantification methods are not sufficiently accurate for use in a market-based program like the Cap-and-Trade Program (see responses below). However, as noted above, due to the mass balance method used for calculating and reporting natural gas supplier emissions, any fugitive methane emissions that occur from the transmission/distribution system are effectively treated as if the methane were combusted and not released as methane.”- CARB Correspondence, 5/19/2021

Natural Gas Pipeline Emissions and Cap and Trade

2. If so, is our understanding correct, that fugitive emissions and venting from PG&E are in fact being captured under Cap & Trade and PG&E has a carbon obligation for fugitive emissions and venting?

Response 2B:

“The primary reason these vented, and fugitive emissions are not subject to compliance obligation is that the emissions quantification methods are not considered to be sufficiently accurate for use in a market-based program like the Cap-and-Trade Program and are therefore included as “reporting only” emissions that are excluded from a Cap-and-Trade compliance obligation. This is stated in the original Final Statement of Reasons (FSOR) document for the 2010 Cap-and-Trade regulation”- CARB Correspondence, 5/19/2021