

Docket No.: A.25-12-009
Exhibit No.: UCAN-04
ALJ: Camille Watts-Zagha
Witness: Tyson Siegele

Exhibit UCAN-04

SDG&E Supplemental Response to UCAN Data Request 01
(July 20, 2026)

UCAN DATA REQUEST 01
PALOMAR DECARBONIZATION DEMONSTRATION – A.25-12-009
SDG&E FIFTH SUPPLEMENTAL RESPONSE
PROVIDED PURSUANT TO JUNE 24, 2026 MEET & CONFER
DATE RECEIVED: JUNE 5, 2026
DATE RESPONDED: JULY 20, 2026

QUESTION 33:

Provide all SDG&E correspondence with the Palomar Energy Center's turbine manufacturer discussing hydrogen blending.

SDG&E RESPONSE TO QUESTION 33:

SDG&E objects to this request under Rule 10.1 of the Commission's Rules of Practice and Procedure to the extent it seeks the production of information that is neither relevant to the subject matter involved in the pending proceeding nor is reasonably calculated to lead to the discovery of admissible evidence. SDG&E further objects to the request on the grounds that it is overbroad and calls for information that is confidential, proprietary, contains trade secrets, is privileged or otherwise entitled to confidential protection by reference to statutory protection.

SDG&E 6/29 SUPPLEMENTAL RESPONSE TO QUESTION 33:

SDG&E reserves the right to supplement this response.

SDG&E 7/14 SUPPLEMENTAL RESPONSE TO QUESTION 33:

SDG&E's director of generation had several meetings with the turbine manufacturer in September 2020. He has retired and his communication on the hydrogen blending with the turbine manufacturer is not readily available. However, an internal record shows a discussion with the turbine manufacturer on performance impact of hydrogen on a separate GE engine (LM6000) in September 2020.

SDG&E 7/20 SUPPLEMENTAL RESPONSE TO QUESTION 33:

SDG&E reiterates its above objections to this request under Rule 10.1 and on the basis that it is overly broad, burdensome and to the extent it seeks production of information that is not relevant to the pending proceeding. SDG&E further objections to this request on the grounds it seeks confidential and proprietary third-party materials for which SDG&E expressly does not have permission to disclose. Subject to and without waving the foregoing objections, SDG&E responds as follows:

SDG&E's director of generation had several meetings with the turbine manufacturer in September 2020. He has retired and his communication on the hydrogen blending with the turbine manufacturer is not readily available or may not exist at all due to SDG&E's document retention policies. SDG&E's technical staff estimates that it would likely take several weeks to several months to search archived emails and determine if any relevant communications still exist. Current SDG&E employees involved in the Project conducted a search of their files and identified the email chain attached hereto:

GE_SDG&E Miramar LM6000PC Hydrogen Fuel Mix Discussion

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QUESTION 45:

SDG&E Testimony at AB-8 states that “electrolytic hydrogen was favored due to its commercial availability and the general consensus that it had the ability to scale to generate abundant, affordable, and reliable clean hydrogen within the decade.” State the dollar amount of hydrogen in \$/kg, including delivery cost, that SDG&E defines as “affordable.”

SDG&E RESPONSE TO QUESTION 45:

SDG&E will address this question in its supplemental response.

SDG&E 6/29 SUPPLEMENTAL RESPONSE TO QUESTION 45:

SDG&E objects to this question on the basis it calls for speculation, and to the extent it mischaracterizes testimony. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

SDG&E does not independently or in a vacuum make determinations about affordability metrics that are in actuality defined by the market and a host of variables, contexts, and relative factors. The testimony does not suggest an objective \$/kg affordability number, but rather indicates that the potential for electrolytic hydrogen to scale to the point that hydrogen is made affordable is a driving force and justification for developing the demonstration project. SDG&E also notes that the US Department of Energy “Hydrogen Shot” and the BloombergNEF Hydrogen Economy Outlook (as referenced on AB-8) state that electrolytic hydrogen is cost-effective.

SDG&E 7/14 SUPPLEMENTAL RESPONSE TO QUESTION 45:

SDG&E objects to this question on the basis it calls for speculation, and to the extent it mischaracterizes testimony. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

In 2022, the Legislature passed Senate Bill (SB) 1075, which called for California Air Resource Board (CARB), in consultation with the California Energy Commission and California Public Utilities Commission, to produce a comprehensive report on hydrogen. This report will cover the development, deployment, and use of hydrogen across all sectors. There are benchmarks for hydrogen production cost range forecasts for 2045 for several technologies, including electrolyzers with solar.¹

SDG&E 7/20 SUPPLEMENTAL RESPONSE TO QUESTION 45:

SDG&E reiterates its objections to this request on the basis it calls for speculation and mischaracterizes testimony. SDG&E further objects to the extent a response would require SDG&E to conduct analysis or create documents that do not exist. Subject to and without waiving the foregoing objections, and following the July 20 meet and confer with UCAN, whereby UCAN contended SDGE's previous answer was nonresponsive, SDG&E responds as follows:

SDG&E reiterates that its direct response to this request continues to be that SDG&E does not independently or in a vacuum make determinations about affordability metrics that are in actuality defined by the market and a host of variables, contexts, and relative factors. The testimony does not

¹ Analysis of Hydrogen in California for Senate Bill 1075 Report, California Air Resource Board, Available at: <https://ww2.arb.ca.gov/sites/default/files/2025-02/sb-1075-workshop-022525-presentation-e3.pdf>

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suggest an objective \$/kg affordability number, but rather indicates that the potential for electrolytic hydrogen to scale to the point that hydrogen is made affordable is a driving force and justification for developing the demonstration project. It appears UCAN would like SDG&E to provide an affordability metric that SDG&E has not calculated and does not calculate, because, as noted above, affordability metrics are defined by the market and a host of variables, contexts, and relative factors external to SDG&E. SDG&E also continues to point UCAN to the US Department of Energy “Hydrogen Shot” and the BloombergNEF Hydrogen Economy Outlook (as referenced on AB-8), which state that electrolytic hydrogen is cost-effective, and to Analysis of Hydrogen in California for Senate Bill 1075 Report, California Air Resource Board, Available at: <https://ww2.arb.ca.gov/sites/default/files/2025-02/sb-1075-workshop-022525-presentation-e3.pdf>.

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QUESTION 48:

SDG&E Testimony at AB-11 states that “SDG&E is also collaborating with faculty at the University of California Irvine Combustion Laboratory to develop a data collection framework for the hydrogen blending aspect of the Project, including emissions and system performance. The goal is to collect and disseminate meaningful data and compare results with other projects that use blended hydrogen for power generation.”

QUESTION 48a:

Provide all data and communications since the start of 2019 between SDG&E and faculty and staff of the University of California Irvine related to the Project.

SDG&E RESPONSE TO QUESTION 48a:

SDG&E will address this question in its supplemental response.

SDG&E 6/29 SUPPLEMENTAL RESPONSE TO QUESTION 48a:

With respect to the requests for all data and communications since the start of 2019 between SDG&E and University of California Irvine (UCI), SDG&E objects to this request under Rule 10.1 of the Commission’s Rules of Practice and Procedure to the extent “all data and communications” seeks the production of information that is neither relevant to the subject matter involved in the pending proceeding nor is reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

Per the testimony of Ari Beer and Pooyan Kabir and Kevin Counts, communications with UCI are related to data collection framework for the hydrogen blending aspect of the Project. SDG&E reserves the right to supplement this response.

SDG&E 7/14 SUPPLEMENTAL RESPONSE TO QUESTION 48a:

SDG&E has communicated with UCI faculty however the individual who was in direct communications has left the company in late 2025, and the role has not been filled yet. The UCI faculty was on campus for a tour of the facility on November 13, 2025. SDG&E is awaiting a decision on the application to formally start engaging with UCI faculty for collaboration on hydrogen combustion at the turbine.

SDG&E provided email communication on November 13, 2025, in a separate document.

SDG&E 7/20 SUPPLEMENTAL RESPONSE TO QUESTION 48a:

SDG&E objects to this request under Rule 10.1 and on the basis that it is overly broad, burdensome and to the extent it seeks production of information that is not relevant to the pending proceeding. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

As noted, SDG&E has communicated with UCI faculty however the individual who was in direct communications has left the company in late 2025, and the role has not been filled yet. As a departed employee, their custodial emails are not readily available or may not exist at all due to SDG&E's document retention policies. SDG&E's technical staff estimates that it would likely take several weeks to several months to search archived emails and determine if any relevant communications still exist. Current SDG&E employees involved in the Project conducted a search of their files and—

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as reflected in the above response—identified that the UCI faculty was on campus for a tour of the facility on November 13, 2025. SDG&E previously provided the email communication that occurred on November 13, 2025 in connection with this tour. As previously noted, SDG&E is awaiting a decision on the Project Application to formally reengage with UCI faculty for collaboration on hydrogen combustion at the turbine.

QUESTION 48b:

Provide all other data and communications since the start of 2019 between SDG&E and faculty and staff of the University of California Irvine regarding hydrogen.

SDG&E RESPONSE TO QUESTION 48b:

SDG&E will address this question in its supplemental response.

SDG&E 6/29 SUPPLEMENTAL RESPONSE TO QUESTION 48b:

Please see response to 48a.

SDG&E 7/14 SUPPLEMENTAL RESPONSE TO QUESTION 48b:

Please see response to 48a.

SDG&E 7/20 SUPPLEMENTAL RESPONSE TO QUESTION 48b:

Please see response to 48a.

END OF REQUEST

Docket No.: A.25-12-009
Exhibit No.: UCAN-04-A
ALJ: Camille Watts-Zagha
Witness: Tyson Siegele

Exhibit UCAN-04-A

SDG&E Response to UCAN Data Request 01, Question 33 – Attachment
“GE_SDG&E Miramar LM6000PC Hydrogen Fuel Mix Discussion”
(July 20, 2026)

deBoer, Krista S

From: Patel, Sagar (GE Gas Power) <sagar.B.patel@ge.com>
Sent: Wednesday, January 12, 2022 1:26 PM
To: Sarosa, Sugandi
Subject: [EXTERNAL] Re: GE - SDG&E Miramar LM6000PC Hydrogen Fuel Mix Discussion

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Sungadi,

For injection of 5% H2 blend with NG, there's minimal impact to the change in HR per the deck we provided, even at 35% H2 blend we expect very slight change in the HR.

We do not have other document expect the performance run we provided, if you need additional performance runs specific to certain criteria & parameter then we would have to run additional cases.

Thanks,
Sagar

From: "Sarosa, Sugandi" <SSarosa@sdge.com>
Date: Wednesday, January 12, 2022 at 2:05 PM
To: Sagar Patel <sagar.B.patel@ge.com>
Subject: EXT: RE: GE - SDG&E Miramar LM6000PC Hydrogen Fuel Mix Discussion

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Sagar,

We are looking into up to 5% blending only.

The specific info we are interested is %H2 vs Heat Rate. I cannot find any whitepaper on this, only data I have is from the table in your presentation.

Do you have other document on the Heat Rate I can share with other?

Thanks,
Sugandi

From: Patel, Sagar (GE Gas Power) <sagar.B.patel@ge.com>
Sent: Wednesday, January 12, 2022 12:53 PM
To: Sarosa, Sugandi <SSarosa@sdge.com>
Subject: [EXTERNAL] Re: GE - SDG&E Miramar LM6000PC Hydrogen Fuel Mix Discussion

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Hello Sugandi,

Happy New Year! Hope you had good holidays.

I am glad to hear SDG&E is considering blending H2 w/ NG in the Aero Turbines. Do you have rough idea of how much % blend is being considered or expected and potential timing of operation?

I would also like to share couple of whitepapers: [Hydrogen gas turbine \[ge.com\]](#) and [Carbon Capture \[ge.com\]](#), also I recommend you taking a look at [H2 Turbine web page \[gepower.com\]](#) to help you get more insights on GE's journey and capabilities to operate Turbines on various fuels. GE is currently in process of testing and demonstration to burn H2 in Aero Gas Turbine in New York at NYPA Brentwood Demo, Public announcement: <https://www.governor.ny.gov/news/governor-cuomo-announces-new-york-will-explore-potential-role-green-hydrogen-part> [governor.ny.gov]

I would recommend you to not share GE documentation to third parties. Please let me know if you have any questions and would like to setup another conversation to further understand SDG&E's future Hydrogen Combustion plans.

Thank you,
Sagar

Sagar Patel
GE Gas Power

M: 404-831-7039

[Building a World That Works \[ge.com\]](#)

From: "Sarosa, Sugandi" <SSarosa@sdge.com>

Date: Wednesday, January 12, 2022 at 1:08 PM

To: Sagar Patel <sagar.B.patel@ge.com>

Subject: EXT: RE: GE - SDG&E Miramar LM6000PC Hydrogen Fuel Mix Discussion

WARNING: This email originated from outside of GE. Please validate the sender's email address before clicking on links or attachments as they may not be safe.

Hi Sagar,

We have a lot of interest and questions on blending Hydrogen on the gas turbine.

Do you have any whitepaper or publish document showing the performance impact table as in the attached presentation?

Or can I share the table with other party?

Regards,

Sugandi Sarosa
Plant Engineer
SDG&E - Electric Generation
Palomar Energy Center
2300 Harveson Place | Escondido CA 92029
Mobile: 951-541-7533
Office: 760-432-2508

From: Patel, Sagar (GE Gas Power) <sagar.B.patel@ge.com>
Sent: Friday, September 25, 2020 6:39 AM
To: Sarosa, Sugandi <ssarosa@sdge.com>; LaPeter, Carl S. <CLaPeter@sdge.com>
Subject: [EXTERNAL] Re: GE - SDG&E Miramar LM6000PC Hydrogen Fuel Mix Discussion

*** EXTERNAL EMAIL - Be cautious of attachments, web links, and requests for information ***

Hello Sugandi,

Attached please find high level modification required for blending more than 5% of H2 by volume and associated performance analysis to understand the impact on emissions. Upto 5% of H2 blending has minimal impact to engine and emissions however higher than 5% blending will require modifications to package.

Please let me know if you have any further questions.

Thank you,
Sagar

Sagar Patel

Senior Sales Manager, Aero Services
GE Gas Power

M: 404-831-7039

E: sagar.b.patel@ge.com

[LinkedIn \[linkedin.com\]](https://www.linkedin.com/in/sagarpatel/)

[www.ge.com \[ge.com\]](http://www.ge.com)

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From: "Sarosa, Sugandi" <ssarosa@sdge.com>
Date: Thursday, September 24, 2020 at 7:15 PM
To: Sagar Patel <sagar.B.patel@ge.com>, "LaPeter, Carl S." <CLaPeter@sdge.com>
Subject: EXT: RE: GE - SDG&E Miramar LM6000PC Hydrogen Fuel Mix Discussion

Sagar,

Thank you for the H2 discussion today. It's very informative for me.

Is it possible to get the table data slide on the emission vs H2 percentages so I can discuss this with the team member that missed the meeting today?

Regards,

Sugandi Sarosa

Plant Engineer

SDG&E - Electric Generation

Palomar Energy Center

2300 Harveson Place | Escondido CA 92029

Mobile: 951-541-7533

Office: 760-432-2508

From: Patel, Sagar (GE Gas Power) <sagar.B.patel@ge.com>
Sent: Thursday, September 24, 2020 10:24 AM

To: LaPeter, Carl S. <CLaPeter@sdge.com>; Sarosa, Sugandi <SSarosa@sdge.com>
Subject: [EXTERNAL] Re: GE - SDG&E Miramar LM6000PC Hydrogen Fuel Mix Discussion

*** EXTERNAL EMAIL - Be cautious of attachments, web links, and requests for information ***

Hello Sugandi,

Do you prefer to keep the meeting as scheduled for today or should we re-schedule it to tomorrow? Want to make sure everyone from SDG&E gets to participate in LM6000PC Hydrogen discussion. Please advise!

Thank you,
Sagar

Sagar Patel
GE Gas Power

M: 404-831-7039

From: "LaPeter, Carl S." <CLaPeter@sdge.com>
Date: Thursday, September 24, 2020 at 12:32 PM
To: Sagar Patel <sagar.B.patel@ge.com>
Subject: EXT: Declined: GE - SDG&E Miramar LM6000PC Hydrogen Fuel Mix Discussion

I have another meeting at this time. I'm available Friday at 0900 or 0930.

Carl S. La Peter
Plant Manager
SDG&E - Electric Generation
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2300 Harveson Place
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Cell: 760-331-7810
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