

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



Order Instituting Rulemaking to Modernize the
Electric Grid for a High Distributed Energy
Resources Future.

Rulemaking 21-06-017
(Filed June 24, 2021)

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**COMMENTS OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902 E) ON THE
SMART INVERTER OPERATIONALIZATION WORKING GROUP REPORT AND
CYBERSECURITY WORKING GROUP REPORT**

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July 8, 2024

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I. INTRODUCTION

Pursuant to the Administrative Law Judge’s (“ALJ”) *Ruling Providing Two Working Group Reports And Directing Responses To Questions On Reports* (“Ruling”) dated May 29, 2024, San Diego Gas & Electric Company (“SDG&E”) hereby submits (1) comments on the Smart Inverter Operationalization Working Group (“SIOWG”) Report (Attachment 1) and (2) comments on the Cybersecurity Working Group (“SIO-CS”) Report (Attachment 2).¹ On June 11, 2024, the ALJ issued an *Email Ruling Partially Granting Extension of Time for Comments* which extended the deadline for parties to submit these comments to July 8, 2024.

SDG&E commends the SIOWG and the SIO-CS for their diligent efforts in drafting both reports. SDG&E appreciates the collaborative approach taken by the working groups and acknowledges the significant contributions made by all participants. SDG&E was provided the opportunity to provide consensus, non-consensus, and qualifications statements within the reports during their development.

¹ In order to comply with the formatting requirements set forth in the Ruling, SDG&E is submitting its responses to the questions set forth in Attachment 3 of the Ruling in a separate, contemporaneously submitted document.

II. COMMENTS ON SIOWG REPORT

As an initial matter, SDG&E assumes the context of the terms, “non-firm export capacity”² and “non-firm import capacity”³ are consistent with the definitions in the SIOWG Report. Both terms refer to the additional distribution system export or import capacity that may become available to a generator or load after the initial interconnection/energization of that entities’ generation/load.

The SIOWG report presents several key findings and emphasizes the focus of the report is around “operational flexibility” and optimal use of existing distribution capacity.⁴ The SIOWG report indicates that “firm” and “non-firm” export/import limits must be managed by a Power Control System (“PCS”) and will need to be updated via communications to implement more temporally granular limits. Finally, the SIOWG Report states that regulations and tariffs for managing both export and import flexible limits could be addressed in one new California Public Utilities Commission (“Commission” or “CPUC”) Order Instituting Rulemaking (“OIR”) proceeding or, if need be, two well-coordinated proceedings.⁵

² The SIOWG Report defines “non-firm export capacity” as “Mutually agreed contractual optional additional capacity in watts beyond the firm export limit, some or all of which could be exported if authorized by the DSO, based on current or forecast grid conditions. Such DSO authorization may be modified at any time if grid conditions change. Non-firm export capacity may consist of a single value or may be a schedule of multiple values indicating when some part of that non-firm export capacity may be available to be authorized by the DSO.” SIOWG Report, p. 12.

³ The SIOWG Report defines “non-form import capacity” as “Mutually agreed contractual optional additional capacity in watts beyond the firm import limit, some or all of which could be imported if authorized by the DSO, based on current or forecast grid conditions. Such DSO authorization may be modified at any time if grid conditions change. Non-firm import capacity may consist of a single value or may be a schedule of multiple values indicating when some part of that non-firm import capacity may be available to be authorized by the DSO” SIOWG Report, p.12.

⁴ SIOWG defines “operational flexibility” as “the ability of a power system to respond to changes in electricity demand and generation”.

⁵ SIOWG, p. ii.

The SLOWG report provides considerable information on the potential uses of smart inverter technology and provides stakeholders' assessment of how different capabilities of the technology should be prioritized in terms of likely future usefulness. Indeed, California is one of the pioneer states when it comes to enabling the wide deployment of smart inverter technology. Almost a decade later from the deployment of smart inverters, due to a limited willingness from the Distributed Energy Resource ("DER") industry to provide inverter-level data, or even system level data at a granular level, none of the California Utilities have truly obtained enough telemetry data from the inverters, nor have they been able to develop operating experience related to the DERs, that is necessary to adequately assess future uses of capabilities at this time. SDG&E cautions against using the information in the report to set a roadmap for future Commission or utility actions. Such actions should be driven by the interest of the utilities' customers and needs, and only where it is apparent that the value provided will offset the costs the utility would incur to implement those capabilities, which would be the responsibility of the utility.

The potential uses of smart inverter technology identified in the report generally assume that every customer premise will consist of loads, appliances and power generating devices (*e.g.*, battery storage) that are controllable. To make use of the smart inverter capabilities, customers would need to have a PCS that has the ability to limit the import/export of power flowing through the Point of Common Coupling ("PCC") with the utility's distribution facilities. Thus, on the customer side, the PCC will need to monitor power flows at the PCC and use this information to control the on-site inverters (and/or other on-site controllable devices) to achieve the desired power flow at the PCC. Further, customers would also need support from various vendors that provide the equipment, Distributed Energy Resource ("DER") technology, communication medium, and the communication interface to implement changes to the export/import limits dynamically. On the utility side, the SLOWG report envisions that "In the High DER Future, the

DSO's [Distribution System Operator's] ADMS/DERMS [Advanced Distribution Management Systems/Distributed Energy Resources Management Systems] systems could assess the impact on the distribution circuits and substations of power import required for loads as well as the power export from DER. These assessments would permit the DSO to establish more accurate limits on when power imports might be limited."⁶ The SIOWG report further suggests that "Therefore, in an equivalent structure to Interconnection Agreements for DER, Limited Load Profiles could (optionally) identify flexible power import limits for certain customer facilities. In parallel to Rule 21 Tariff for DER interconnections, Rules 2, 15, and 16 (and Rules 29 and 45 for EVs) would need to take into account the addition of power import limits."⁷

The report appropriately acknowledges that the use cases, business cases, and concepts that are introduced are all new.⁸ The report further suggests that the "DSOs will require additional studies, assessments, and near-real-time information to determine how much and when to authorize the non-firm export and/or import capacity to be operationalized. Many of the tools for such evaluations are (probably) in the designs for their ADMS/DERMS capabilities, but more tools and more detailed and timely information on the grid conditions may also be needed. In addition, regulatory procedures will need to be adjusted or improved to address the many issues that could arise from this new approach."⁹ The extent to which customers are willing to have their loads dynamically managed is another huge unknown and will depend on the magnitude of the financial incentives, if any, that are available to them. In a scenario where developers or customers with the necessary financial capability implement advanced control systems with the

⁶ SIOWG, p. 3.

⁷ *Id.*

⁸ *Id.* at p. 4.

⁹ SIOWG, p. 4.

expectation of corresponding utility actions, the issue of equity for the non-participating ratepayers (*i.e.*, who would be responsible for a portion of the costs of the utility's actions) is raised.

Finally, SDG&E has worked diligently over the years to support customers' DER adoption and integration needs. In the generator interconnection space, SDG&E has the fastest interconnection processing time among the Investor-Owned Utilities ("IOUs"). In the load energization arena, SDG&E's ability to timely construct upstream distribution capacity upgrades has not constrained customers' ability to energize new loads. Additionally, SDG&E is continuously improving its load energization process and is actively engaged in proceedings such as the Commission's High DER Future OIR and Energization OIR.

Below, SDG&E provides its key recommendations:

- Before implementing recommendations contained within the SIOWG and SIO-CS reports, utilities should complete on-going pilots and share lessons learned. These pilots will assess feasibility and customers' ability and willingness to on a small scale.
- Allow the utilities to proceed with larger scale enhancements of their distribution operating systems as necessary, and on a timeline, that accommodates development of commercial platforms for DER compensation and management.
- Do not initiate a new proceeding to address regulatory requirements. The utilities currently have the ability to request tariff changes, propose contract amendments, and develop voluntary agreements through existing processes. This ability includes the submission of Advice Letters that implement changes to the utility's load energization and generator interconnection processes.

If, nevertheless, the Commission decides to address the regulatory requirements in a proceeding, SDG&E suggests starting this effort by defining what mechanisms are missing and/or what issues still need to be resolved. SDG&E cautions against a regulatory process that would repeat the lengthy and exhausting approach used to develop and implement Limited Generation Profiles ("LGPs") in the Commission's Rule 21 Rulemaking (R.17-07-007) proceeding. That

proceeding, which remains in-flight, required significant amounts of stakeholder time and utility resources. Notably, LGPs are likely to primarily benefit the largest DER developers.

III. COMMENTS ON SIO-CS REPORT

SDG&E's comments on the SIO-CS report largely reiterate the "SDG&E Non-Consensus and Qualifications" comments provided on Page 29 of the report. SDG&E recognizes the critical importance of strong cybersecurity measures for DER installations. Ensuring secure practices is essential for integrating DERs safely and effectively into the grid.

The SIO-CS subgroup recommends that the Commission pursue Paths F, G, and H in parallel. Path F would result in the Commission recommending, but not mandating, DSOs use the SIO-CS Phase 1 Primary DER Cybersecurity Requirements in the short term as part of their cybersecurity requirements for DER facilities. Further, any modifications of these Phase 1 requirements by a DSO would require well-documented justification based on DER size, situation, newly identified threat, or other circumstances. SDG&E supports a "suggested" or "trial" adoption of the requirements outlined in Annex A of the SIO-CS report as the most practical next step, which closely aligns with the intent of Path F, but SDG&E believes DSOs should have the discretion to modify the Phase 1 cybersecurity requirements as needed.

Given the dynamic nature of DER technologies and their varied applications, SDG&E believes a phased approach is the most appropriate. A "trial" adoption of the requirements would allow for real world implementation where the lessons learned could be used to establish baseline cybersecurity practices and to identify any challenges or areas for improvement. However, it is critical that sufficient time is allowed to elapse between the beginning of Path F and the start of work associated with Path G in order to appropriately inform future refinements to the cybersecurity requirements.

As the industry evolves, it will be necessary to assess the trial adoption's effectiveness. Should a Phase 2 initiative be undertaken (as described in Path G), it should focus on the lessons learned from the trial adoption, ensuring that the cybersecurity framework remains relevant and robust. Moreover, SDG&E believes that DSOs should have the flexibility to implement additional cybersecurity measures tailored to specific situations. This approach allows for addressing unique risks effectively, maintaining high levels of security and reliability.

SDG&E is committed to enhancing DER cybersecurity through collaborative and adaptive strategies. By taking a thoughtful and incremental approach, the Commission can support the secure integration of DERs into California's electric grid, ensuring resilience and reliability in the energy system.

IV. CONCLUSION

SDG&E appreciates the opportunity to submit these comments on the SIOWG Report and the Cybersecurity Working Group Report.

Respectfully submitted,

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