BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future.	R.21-06-017 (Filed June 24, 2021)

SAN DIEGO GAS & ELECTRIC COMPANY (U 902-E) INDEPENDENT PROFESSIONAL ENGINEER DISTRIBUTION PLANNING ADVISORY GROUP REPORT

PUBLIC VERSION

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November 8, 2024

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Pursuant to the *Administrative Law Judge's Ruling on Recommended Reforms for the 2023 Distribution Investment Deferral Framework Process, the Partnership Pilot and the Standard-Offer-Contract Pilot* dated May 19, 2023 (the "Ruling"), and pursuant to the direction provided by the California Public Utilities Commission's Energy Division staff, San Diego Gas & Electric Company ("SDG&E") hereby submits into the record of this proceeding the Independent Professional Engineer SDG&E 2024 Distribution Planning Advisory Group ("DPAG") Report dated November 8, 2024 prepared by Resource Innovations (the "DPAG Report"). The DPAG Report is attached hereto as **Attachment A.** Concurrently with this motion, SDG&E is submitting a motion for leave to file under seal the confidential version of the DPAG Report.

Respectfully submitted,

/s/ Roger A. Cerda

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ATTACHMENT A

INDEPENDENT PROFESSIONAL ENGINEER SDGE 2024 DPAG REPORT

resource innovations

Independent Professional Engineer SDGE 2024 DPAG Report

Public Version

Submitted to California Public Utilities Commission Energy Division and SDGE

Date: November 8, 2024

Contents

1. Introduction and Background

Summary of CPUC Rulemaking 14-08-013 and Other Rulemakings

In August 2014, the CPUC issued Rulemaking (R.) 14-08-013, which established guidelines, rules, and procedures to direct California's IOUs to develop Distribution Resources Plans (DRPs).

In February 2018, the Commission issued Decision (D.) 18-02-004 which adopted the Distribution Investment Deferral Framework (DIDF) and directed the IOUs to file a Grid Needs Assessment (GNA) by June 1 of each year and a Distribution Deferral Opportunity Report (DDOR) by September 1 of each year. The GNA, as adopted by this decision, limits reported grid needs to four types of forecasted circuit level system deficiencies associated with the four distribution services that DERs can provide, as adopted in D.16-12-036: capacity, voltage support, reliability (back-tie) and resiliency (microgrid).

In May 2019, the assigned Administrative Law Judge (ALJ) issued a ruling that directed IOUs to file both the GNA report and DDOR on August 15 annually.

In April 2020, the assigned ALJ issued a ruling modifying the DIDF process and filings with respect to the Independent Professional Engineer (IPE) scope of work. This ruling also updated the 2020-2021 DIDF cycle schedule and defines the DIDF cycle to start on January 1 of each year and concludes July 31 the following year. Attachments A and B of the Ruling include a listing of the IPE-specific reforms discussed in the Ruling and the updated IPE scope of work. These Attachments to the Ruling are attached as Appendix A of this report. This ruling also included a new IPE Post-DPAG Report deliverable within the IPE scope of work.

In May 2020, the assigned ALJ issued a ruling modifying the DIDF process. This Ruling established 56 new reform requirements including process changes to approval for the Integrated Energy Policy Report (IEPR) dataset used for forecasting, requests for certain datasets to be hosted on the DRP Data Portals, value stacking that may result in deferral projects that exceed the cost cap, changes to how Locational Net Benefit Analysis (LNBA) data is presented, and recommendations for potential 2021-2022 DIDF cycle reforms.

In February 2021, the Commission issued IDER D. 21-02-006 which introduced the Partnership Pilot and the SOC Pilot and streamlined the DIDF RFO.

In June 2021, the assigned ALJ issued a ruling on recommended reforms to the DIDF process and revisions to some previous reforms to align with requirements adopted by D. 21-02-006.

In November 2021, the Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future (R.21-06-017)5 was filed to replace the 2014 Distribution Resource Plan and now stands as the OIR home for GNA and DDOR compliance.

In 2022, the Commission issued the 2022 DIDF Ruling, establishing seven reforms to three solicitation frameworks.

In May 2023, the Commission's 2023 DIDF Ruling focused primarily on updates to known load tracking and reporting, as well as terminating the SOC Pilot.

Finally, in June 2024, the assigned ALJ granted the motion filed by SDG&E and SCE, as well as a separate motion filed by PG&E, requesting to suspend portions of the DIDF process temporarily and removing solicitation-related reporting requirements within the 2024 GNA/DDOR reporting period, as well as off ramped the Partnership Pilot. The June 2024 Ruling also provided the regulatory timelines for the 2024/2025 DIDF cycle shown in Table 1-1.

Table 1-1 DPAG Schedule for 2024-2025 DIDF Cycle (Partial table from the June 2024 Reform Ruling)

Activity	Date
Pre-DPAG 2024	
Pre-DPAG meetings and workshops, including Draft IPE Plans review	June 2024
DPAG 2024	
IOU GNA/DDOR filings Final IPE Plans Circulated	August 15, 2024
IPE Preliminary Analysis of GNA/DDOR data adequacy circulated	September 5, 2024
DPAG meetings with each IOU	Mid to Late September 2024
Participants provide questions and comments to IOUs and IPE	September 25, 2024
IOU responses to questions	October 7, 2024
Follow-up IOU meetings via webinar	Week of October 15, 2024
IPE DPAG Reports	November 8, 2024
Post-DPAG 2024 and 2025	
IPE Post-DPAG Report (covering all three Utilities)	March 15, 2025

Independent Professional Engineer

The California Public Utilities Commission (Commission) rulings direct Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company (Utilities or IOUs) to enter into a contract with an Independent Professional Engineer (IPE). The role of the IPE is as previously described.

Through a contract with Resource Innovations, SDG&E engaged Mr. Sundar Venkataraman[1], PE, to serve as the advisory engineer (referred to as the Independent Professional Engineer (IPE)) for the scope described in the April 23, 2020 CPUC Ruling or as modified by subsequent rulings.

1.1. IPE Plan

As required by the April 23, 2020 Ruling, the IPE developed an IPE Plan that served to guide the IPE's steps to verify and validate the GNA/DDOR results. The plan was developed using a three-step process:

1. In step 1, IPE developed a draft IPE Plan working with the Energy Division and SDG&E by mid-June 2024.
2. The Plan was distributed to the service list and also discussed at the CPUC Distribution Forecasting Working Group meeting - both in an attempt to obtain stakeholder feedback on the plan.
3. Based upon stakeholder feedback received and under the direction of the Energy Division, the IPE revised the plan and made its IPE Final Plan available on September 10, 2024.

A copy of the Final IPE Plan is included as Appendix C.

The IPE Plan nominally covers the business processes that the IOUs use to identify which distribution or subtransmission projects are recommended to proceed to a procurement process under which DERs are evaluated as potential cost-effective non-wires alternatives. One of the core purposes of the plan is answer the question - Are the IOUs identifying every planned distribution project that could feasibly and cost effectively be deferred by DERs?

The business processes in the Plan are organized generally in the order that they are performed. Starting with capturing the peak load values for each circuit for 2023, using the CEC IEPR forecasts to develop utility specific system level values which are then

[1] Consistent with the CPUC decision, the contract with Resource Innovations (RI), the firm where Mr. Venkataraman is employed, provides for other individuals within RI to assist Mr. Venkataraman to perform the work in the IPE contract provided that these other individuals are also bound by the same confidentiality and conflict of interest requirements that Mr. Venkataraman is required to meet.

disaggregated to the circuit level, adjusted for known loads, and then used to determine if there is an overload or other issue during the planning period. For circuits that have a need, a planned investment is selected, capital costs developed for that project and the planned investments are screened to develop a list of candidate deferral projects. These candidate deferral projects are then prioritized into tiers using several metrics. The deferral projects in the first tier are judged to have a higher likelihood of being cost-effectively deferred than projects in the second and third tiers. Pursuant to the ALJ's May 2022 reform ruling, the utilities then apply a quantitative methodology to select which of the tiered candidate deferral projects will be offered for deferral through the pilots.

In every DIDF cycle, the IPE reviews the plan to determine if any of the steps could be streamlined or eliminated in that cycle without compromising the intent of the verification and validation process. Such streamlining allows the IOUs and the IPE to focus additional time on more recent additions in the IPE's scope. Based on this review, the IPE determined that the following steps could be skipped in this cycle if the business process used by the utility has not changed[2]:

- Steps 5-7 - Convert Peak Growth to 8760 Profile, Determine Net Load and Peak Load
- Steps 9-11 - Initial Comparison to Equipment Ratings, Evaluate No Cost Solutions and Comparison to Equipment Ratings after No Cost Solutions
- Step 13 - Development of planned investments using planning standards.
- Step 14 - Development of capital costs for the planned investments.
- Step 16 - Development of operational requirements for CDOs.
- Step 18 - Calculation of LNBAs for planned projects.

In addition, this IPE plan skips the verification and validation of the following steps due to the CPUC's suspension of DIDF procurement related processes in this cycle.

- Step 15 - Development of Candidate Deferral Projects
- Step 17 - Prioritization of Candidate Deferral Projects into Tiers
- Step 16 - Development of operational requirements for CDOs
- Step 18 - Calculation of LNBAs for planned projects

[2] SDG&E confirmed that the business process for these steps have not changed since the last DIDF cycle.

1.2. Definitions of Verification and Validation

As part of the development of the IPE Plan, detailed definitions were developed to clarify the meaning of Verification and Validation as applied to the IPE scope of work. These definitions which are used and applied in all IPE deliverables, are listed below:

Verification – Is a review performed by the IPE during which an independent check is performed to determine if the results produced were developed using data assumptions and business processes that were defined and described by the utility or are based upon standard industry approaches that do not have to be defined and described. In other words, "Did the IOU follow their own processes correctly as defined by the IOU?"

Validation – Is a review performed by the IPE during which an independent assessment is performed of the appropriateness of the approach taken by the utility to perform a task from an engineering, economics, and business perspective. In other words, "Are the processes implemented by the IOU the best way to identify all planned investments that could feasibly be deferred by DERs cost effectively? And to what extent were the IOU methodologies appropriate and effective?"

1.3. Services Considered within the DDOR Framework

The CPUC, in a previous decision, approved the four services proposed by the Competitive Solicitation Framework Working Group (CSFWG) and directed the utilities to consider these services in the GNA/DDOR process. The four services as described in the decision are listed below in an excerpt from the decision:

"The following definitions for the key distribution services that distributed energy resources can provide are adopted for the Competitive Solicitation Framework:

- Distribution Capacity services are load-modifying or supply services that distributed energy resources provide via the dispatch of power output for generators or reduction in load that is capable of reliably and consistently reducing net loading on desired distribution infrastructure.
- Voltage Support services are substation and/or circuit level dynamic voltage management services provided by an individual resource and/or aggregated resources capable of dynamically correcting excursions outside voltage limits as well as supporting conservation voltage reduction strategies in coordination with utility voltage/reactive power control systems.
- Reliability (back-tie) services are load-modifying or supply service capable of improving local distribution reliability and/or resiliency. Specifically, this service provides a fast reconnection and availability of excess reserves to reduce demand when restoring customers during abnormal configurations; and

- Resiliency (micro-grid) services are load-modifying or supply services capable of improving local distribution reliability and/or resiliency. This service provides a fast reconnection and availability of excess reserves to reduce demand when restoring customers during abnormal configurations."

1.4. Approach to Information Collection

The data required for the verification and validation of each business step, as well as the date when the data was due were specified in the Final IPE plan that was issued on September 10, 2024. This data was provided according to the Plan by SDG&E to the IPE using their secure FTP site. Additional data, if any, were obtained via the SFTP site based on the IPE's request. The IPE also used information provided by SDG&E in the DPAG meeting held on September 18, 2024. In addition, the IPE also reviewed publicly available materials referred to in the discussions with SDG&E or materials previously filed with the CPUC, as needed. A list of the data provided by SDG&E is included as Appendix D.

1.5. Report Contents

The remainder of this report includes the following sections:

- **Section 2** – Review of GNA results, which briefly discusses the contents of the SDG&E GNA Report, and any significant differences noted in SDG&E's reports between the 2024 and 2023 reports. Observations, comments, and recommendations that result from the Validation review with respect to the GNA Report are included in this section.

- **Section 3** – Review of DDOR results, which briefly discusses the contents of the SDG&E DDOR Report, and any significant differences noted in SDG&E's reports between the 2024 and 2023 reports. Observations, comments, and recommendations that result from the Validation review with respect to the DDOR Report are included in this section.

- **Section 4** – Known Load Tracking Data and Metrics, which reviews the known load tracking data and the known load metrics calculated by the utilities.

- **Section 5** – Verification Approach and Results, which reviews the approach and results of the verification performed by the IPE

- **Appendix A** – IPE Scope - Excerpt from April 23, 2020 CPUC Rulemaking 14-08-013

- **Appendix B** - Comments Received from the DPAG Members and IOU and IPE responses.
- **Appendix C** – IPE Final IPE Plan - SDG&E
- **Appendix D** – Data provided by SDG&E

Confidential Information

There are a number of places in this report that contain confidential Information. They may include, for example, grid needs information from the GNA or DDOR that are subject to the 15/15 Rule or contains business confidential data. This data is highlighted to show that it is Confidential but is still readable. The documents that are included in the appendices of this report are treated the same way. SDG&E has also assigned a pseudonym (such as "A" or "B") for a circuit name whenever it appears in the filename in both the confidential and public versions of the attachments.

The public version of this report will contain some figures and tables that are redacted. We recognize that this impacts the information that the public receives from the IPE report. We have tried to minimize the impact of redaction in the public report by providing both GNA and Facility IDs (which are public). We have also provided the results of our verification in a generic way without naming the circuit(s) on which the verification was performed.

2. Review of GNA Results

The GNA Report submitted by SDG&E is summarized at a high level below.

2.1. Scope of SDG&E's GNA/DDOR Reports

The SDG&E GNA Report is a written report with an accompanying Excel spreadsheet of potential grid needs on its distribution system. SDG&E filed its GNA and DDOR Reports on August 15, 2024 as required by the CPUC. In this cycle, SDG&E filed a single report that covered the results of the GNA and DDOR unlike prior cycles when it filed the results in separate reports. SDG&E's 2024 GNA/DDOR report is organized similar to last year's report under the following sections:

- Distribution Planning Process
- SDG&E's Distribution Resources Planning Assumptions and GNA Scope
- GNA Results
- DDOR Planned Investment Results
- Known Load Tracking Data and Metrics

The report contains the following appendices:

- Appendix 1 – Load Disaggregation
- Appendix 2 – Substation Bank and Circuit Forecast Detail Summary
- Appendix 3 – DER Disaggregation Process
- Appendix 4 – 2024 Known Load Tracking Data
- Appendix 5 – DDOR – Planned Investments

2.1.1. Distribution Planning Process

SDG&E's distribution planning process, which remains unchanged from the prior cycle, begins with assessing the historical peak load review for circuits and banks. SDG&E then makes adjustments to the historical peak load considering factors such as, anticipated new load additions, load transfers, loss of a generator, and weather conditions at the time of the historical peak, etc.

SDG&E uses a third-party proprietary software forecast toolset from Integral Analytics, Inc. (LoadSEER) to disaggregate the load forecast provided by the California Energy Commission (CEC) to a circuit level. SDG&E also uses another third-party software (SPIDER - Spatial Penetration & Integration of Distributed Energy Resources) to disaggregate some of the CEC's IEPR Distributed Energy Resource (DER) forecast components such as light duty electric vehicles (LDEV), photovoltaic solar and energy storage, to the zip code level. SDG&E

then maps the zip code level forecast from SPIDER to circuits based on the customer counts on each circuit within the given zip code.

All of this data is used in LoadSEER to obtain 576 hourly net load circuit forecasts (typical weekday and weekend loads for each month) which are then reviewed by SDG&E's distribution planning engineers to identify and correct errors, to address technical issues, and to validate the circuit level forecasts for overall reasonableness.

SDG&E also develops power flow models in Synergi by extracting circuit models from its Geographic Information System (GIS) and forecasts from LoadSEER. These power flow models are used to investigate voltage needs, as well as capacity needs at the line segment level.

SDG&E then identifies conventional distribution projects or Non-Wires Alternatives (NWA) (such as utility-owned battery storage) that mitigate forecast circuit performance issues revealed by the power flow results (i.e., distribution needs). SDG&E investigates if any of the forecasted grid deficiencies have operational-based solutions (which have little to no associated capital investment), contain forecast discrepancies, and/or have committed planned investments that were identified in a previous DIDF cycle. Based on this analysis, SDG&E provides a list of distribution needs that would result in a new distribution capital infrastructure, if built. These are included in the DDOR as Planned Investments. SDG&E's Distribution Planning Process does not identify needs on the secondary electric system (e.g., service transformers, service drops) nor mitigation for needs on the secondary system.

2.1.2. SDG&E's Distribution Resources Planning Assumptions and GNA Scope

This section discusses the methodology and assumptions related to load forecasts, DER growth forecasts and distribution operational switching/load transfer criteria used to forecast and identify distribution needs that are reflected in SDG&E's 2024 GNA.

SDG&E's Distribution Resources Planning Horizon

SDG&E's 2024 GNA covers the 2024-2028 five-year planning horizon. As in the prior GNA's, SDG&E uses only the first three years of the five-year forecast when identifying needs associated with downstream line segments of a circuit.

SDG&E's Distribution System Load Forecast Assumptions

SDG&E used the CEC-approved 2022 IEPR Local Reliability Scenario[3] consisting of the system-level baseline demand forecast, Additional Achievable Energy Efficiency (AAEE) scenario 2, Additional Achievable Fuel Substitution (AAFS) scenario 4, and Additional Achievable Transportation Electrification (AATE) scenario 3, for the SDG&E distribution service area as the starting point for forecasting circuit-level loads. SDG&E used a process to adjust the CEC's forecast for known load additions and identify remaining load to be disaggregated in the forecasting models. In this cycle, SDG&E used all the known loads, with the exception of Transport Electrification (TE) known loads for adjusting the CEC's baseline load growth forecast. TE known loads were deducted directly from the CEC IEPR's system-level TE load growth forecast, which was obtained by combining the baseline and AATE components of the IEPR forecast. The process used by SDG&E to reconcile known loads with the IEPR forecast was verified by the IPE and is further discussed in Section 2.4 of this report.

The resultant system-level growth, allocated by customer class (residential, industrial, and commercial) is disaggregated to a circuit level using the LoadSEER GIS geo-spatial forecasting program which employs satellite imagery and proprietary data analytics to score each acre in SDG&E's territory for the likelihood of increased load by customer class. The circuit-level load forecasts are entered into the LoadSEER forecasting program which generates the 576-hourly load profiles for each circuit.

SDG&E performs weather normalization for each circuit by assessing the circuit's historical daily maximum load and the historical Temperature-Humidity Index (THI) derived from a nearby weather station. This weather normalization factor is then applied to the forecast load growth on each circuit. The process used by SDG&E for weather normalization was updated in this cycle. The IPE's verification of the process is discussed in Section 5 of this report. Finally, LoadSEER software applies an adverse weather factor to each circuit to create the 1-in-10 weather year forecast which is the basis for development of distribution grid needs.

SDG&E employs several steps to validate and adjust historical peak loads to establish a starting point for distribution loading projections that are consistent with the existing circuit configuration on a going-forward basis. SDG&E also adjusts the circuit and transformer bank peak loads, if necessary, to account for the largest distributed generation facility served by a circuit being offline during that circuit's or transformer bank's peak – also known as G-1 planning scenario.

In Appendix 2 of the GNA report, SDG&E provided a detailed summary of the substation bank and circuit peak demand forecasts that were utilized for the GNA.

[3] As per CPUC Energy Division's July 2022 approval of the Joint IOUs' submittal in May 2022 regarding the IEPR datasets to use in the 2024 GNA/DDOR.

SDG&E's Distribution System DER Growth Forecast Assumptions

SDG&E uses CEC's hourly system level forecasts for behind-the-meter photovoltaic solar (PV), behind-the-meter energy storage (ES), energy efficiency (AAEE), light duty electric vehicles (LDEV), medium-heavy duty electric vehicles (MDHDEV), as well as fuel switching (AAFS) as a starting point for modeling these load modifiers.

For the 2024 Distribution Planning Process (DPP), SDG&E uses the following 2022 IEPR Local Reliability Scenario documents to disaggregate the DER growth:

- CEDU 2022 Baseline Forecast – SDGE
- CED 2022 Hourly Forecast – SDGE – Local Reliability
- 2022 AAEE Hourly Impacts – SDGE – Scenario 2
- 2022 AAFS Hourly Impacts – SDGE – Scenario 4 plus SIP

SDG&E uses the SPIDER (Spatial Penetration & Integration of Distributed Energy Resources) model to disaggregate the above-mentioned system-level DER forecasts. The system-level incremental MW capacity by DER technology type is allocated to the circuits based on allocation methodologies specific to each DER type. Variables used to allocate incremental DER capacity geospatially include consumption by customer class, historical PV adoption by zip code, the s-curve trending model, weather zones, and many other factors specific for each type of DER, as discussed in Appendix 3 of SDG&E's GNA report.

The process used by SDG&E to disaggregate DERs was verified by the IPE and is further discussed in Section 7 of this report.

SDG&E's Load Transfers and Switching Assumptions

SDG&E's 2024 GNA included "low cost" load transfers and switching operations to arrive at the final list of needs. The operational/switching-based load transfers are normally the lowest cost options to address an identified need and utilize existing capacity on distribution circuits. The 2024 GNA deficiencies addressed through load transfers are shown in Table 2-1.

Table 2-1: SDG&E GNA deficiencies solved via load transfers

GNA_ID	Facility ID	Solution
GNA_2024_0002	2024_0081	Load Transfers
GNA_2024_0005	2024_0041	Load Transfers
GNA_2024_0007	2024_0339	Load Transfers
GNA_2024_0011	2024_0498	Load Transfers
GNA_2024_0012	2024_0518	Load Transfers

GNA_2024_0016	2024_0808	Load Transfers
GNA_2024_0017	2024_0514	Load Transfers
GNA_2024_0020	2024_0568	Load Transfers
GNA_2024_0025	2024_0840	Load Transfers

GNA Scope

SDG&E's 2024 GNA identifies distribution grid needs associated with the four distribution services that the Commission determined that DERs may be able to provide: distribution capacity, voltage support, reliability (back-tie), and resiliency (microgrid). The GNA identifies distribution capacity, and reliability (back-tie) services needs at the circuit level, substation transformer bank level and the line segment level. Since SDG&E does not have any transmission projects that come under the jurisdiction of the CPUC, no transmission level needs are identified in the GNA. Also, according to SDG&E, none of their Pre-Application and Post-Application projects include distribution components that address a distribution need identified through the distribution planning process, and none can be deferred by DERs since all are associated with transmission projects that are not subject to deferral by DERs through the DIDF.

GNA Refinements

SDG&E's 2024 GNA identified refinements subsequent to the internal dissemination of the distribution load forecast and prior to the publication of the GNA/DDOR on August 15, 2024. These refinements included the addition of two new needs as shown in the table below.

Table 2-2: SDG&E GNA Refinements

GNA_ID	Facility ID	Solution
GNA_2024_0023	2024_0240	New Need Added
GNA_2024_0024	2024_0208	New Need Added
	2024_0574	Need removed

2.2. Changes to GNA for 2024

There are no changes in data formats between SDG&E's 2024 GNA and SDG&E's 2023 GNA.

2.3. Discussion of GNA Results

SDG&E's 2024 GNA identified a total of 25 needs related to distribution capacity, voltage or resiliency and seven circuits and one bank that had a back-tie (reliability) need in addition to a capacity need. SDG&E has indicated in prior cycles that a back-tie need is included for any traditional project that would potentially provide additional back-tie capability. The back-tie need is not based on a separate analysis of the need for such a back-tie capability. A detailed discussion of SDG&E's back-tie analysis can be found in Section 2.4 of the 2021 IPE report. Table 2-3 shows a summary of the grid needs by distribution service type and by the type of equipment on which a constraint requiring mitigation was identified.

Table 2-4 shows the dates by which the mitigation measures are anticipated to be in place. Table 2-5 shows the actual list of needs from the 2024 GNA report. All the capacity, voltage, and reliability needs shown in the table are new needs driven by growth in demand eight due to specific loads and the remaining 17 due to general demand growth. Sixteen of the 25 needs are in the first three years of the forecast with the remaining nine needs in the fourth and fifth years. As mentioned earlier, nine of the needs are addressed using low-cost load transfers.

Table 2-3: Summary of the Number of Grid Needs by Distribution Service Type and Equipment Type

Equipment Type	Distribution Service				Total
	Peak Thermal	Voltage	Back-Tie	Microgrid	
Substation Bank	4	0	1	0	4
Circuit	18	0	7	0	18
Line Segment	3	0	0	0	3
Totals	25	0	8	0	25

Table 2-4: Summary of the Number of Grid Needs by Anticipated Upgrade Date

In-Service Date	Distribution Service				Total
	Peak Thermal	Voltage	Back-Tie	Microgrid	
2024	1	0	0	0	1
2025	9	0	3	0	9
2026	6	0	3	0	6
2027	5	0	2	0	5
2028	4	0	0	0	4
Totals	25	0	8	0	25

Table 2-5: List of Needs from the GNA Report

GNA_ID	Facility ID	Substation	Bank or Circuit ID	Distribution Service Identified	Primary Driver of Grid Need	Anticipated Upgrade Date
GNA_2024_0001	2024_0015	Eastgate	1152	Thermal	Specific Load	6/1/2025
GNA_2024_0002	2024_0081	Mesa Rim	953	Thermal	Demand Growth	6/1/2025
GNA_2024_0003	2024_0035	Genesee	745	Thermal	Demand Growth	6/1/2026
GNA_2024_0004	2024_0005	Clairemont	274	Thermal	Demand Growth	6/1/2028
GNA_2024_0005	2024_0041	Genesee	273	Thermal	Demand Growth	6/1/2027
GNA_2024_0006	2024_0280	Sampson	130	Thermal	Demand Growth	6/1/2028
GNA_2024_0007	2024_0339	Sweetwater	44	Thermal	Demand Growth	6/1/2026
GNA_2024_0008	2024_0877	Paradise	PD3132	Thermal	Demand Growth	6/1/2028
GNA_2024_0009	2024_0378	Boulevard East	444	Thermal	Specific Load	6/1/2025
GNA_2024_0010	2024_0489	Batiquitos	751	Thermal	Demand Growth	6/1/2028
GNA_2024_0011	2024_0498	Cannon	783	Thermal	Demand Growth	6/1/2025
GNA_2024_0012	2024_0518	Encinitas	286	Thermal	Demand Growth	6/1/2026
GNA_2024_0013	2024_0522	Melrose	205	Thermal, Backtie	Demand Growth	6/1/2026
GNA_2024_0014	2024_0538	North City West	832	Thermal, Backtie	Demand Growth	6/1/2025
GNA_2024_0015	2024_0559	Palomar Airport	585	Thermal, Backtie	Demand Growth	6/1/2026
GNA_2024_0016	2024_0808	Rancho Mission Viejo	1245	Thermal	Specific Load	6/1/2025
GNA_2024_0017	2024_0514	Del Mar	68	Thermal	Demand Growth	6/1/2025
GNA_2024_0018	2024_0936	Palomar Airport	PAR42	Thermal, Backtie	Demand Growth	6/1/2026
GNA_2024_0019	2024_0205	Border	534	Thermal, Backtie	Specific Load	6/1/2025
GNA_2024_0020	2024_0568	Rancho Santa Fe	1001	Thermal	Demand Growth	6/1/2024
GNA_2024_0021	2024_0866	Vine	VN31	Thermal	Specific Load	6/1/2027
GNA_2024_0022	2024_0194	Vine	1480	Thermal, Backtie	Specific Load	6/1/2027
GNA_2024_0023	2024_0240	Montgomery	718	Thermal, Backtie	Specific Load	6/1/2025
GNA_2024_0024	2024_0208	Border	1160	Thermal, Backtie	Specific Load	6/1/2027
GNA_2024_0025	2024_0840	Genesee	GE3031	Thermal	Demand Growth	6/1/2027

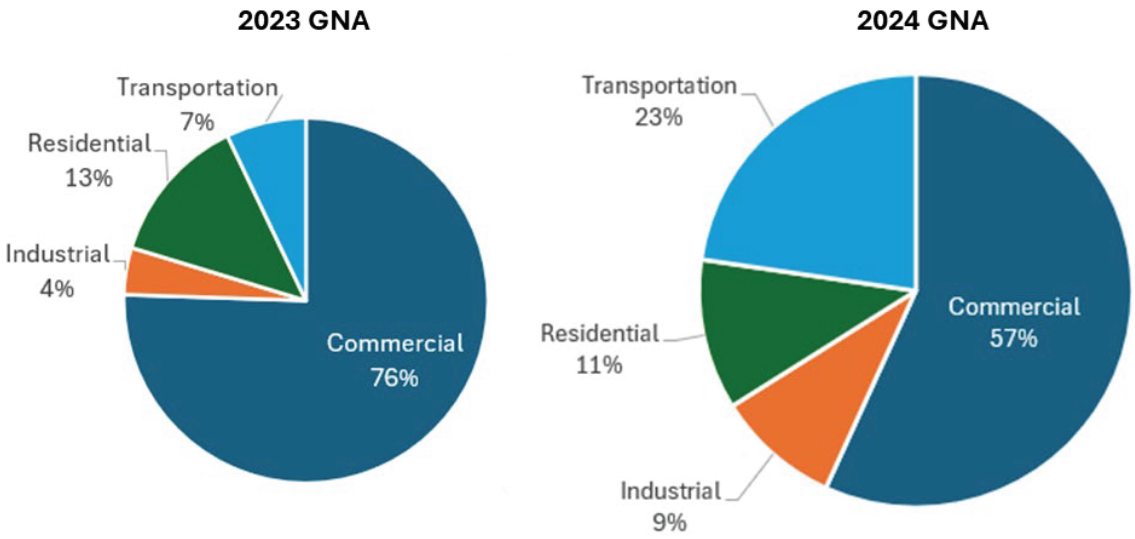
2.4. GNA Observations, Conclusions and Recommendations

- The total number of grid needs in the 2024 GNA was slightly lower than what was seen in the 2023 GNA, i.e., 25 needs in 2024 versus 30 needs in 2023. Nine of the 25 needs were solved using no/low-cost transfers in 2024 compared to 11 out of 30 needs in 2023. There were no voltage needs in 2024 compared to three needs in 2023.

- In the 2024 GNA, there were nine needs in the fourth and fifth years of the forecast compared to only one need in the 2023 GNA. This was the first year when a significant number of needs were identified in years four and five of the forecast.

- The total known load additions increased from 195 MW in the 2023 GNA to 316 MW in the 2024 GNA. While there was an increase in known loads across all the categories going from 2023 to 2024, the majority of this increase was due to Commercial and Transportation Electrification-related loads. A pie chart of the total known load additions by customer type is shown in the Figure 2-1 below for the 2023 and 2024 GNAs.

Figure 2-1: Known Load Customer Types and Load (MW) in the 2023 and 2024 GNA



- Figure-2-2 and Figure-2-3 show a comparison of the IEPR load forecast and the load forecast used in the GNA on a cumulative and annual basis respectively. SDG&E transitioned to a new methodology for accounting for any differences between the IEPR forecast and known load requests in the prior cycle. Prior to the last cycle, SDG&E compared the cumulative IEPR forecast with the cumulative known loads each year and modeled spatial (econometric) loads only when the cumulative IEPR loads exceeded the cumulative known loads. Due to this methodology, typically, there was no spatial load assigned to circuits in the first few years since the cumulative known load often exceeded the cumulative IEPR forecast during those years.

  SDG&E's new methodology compares the IEPR forecast and the sum of the known loads on an annual basis (not on a cumulative basis) and assigns spatial load if the annual IEPR forecast exceeds the annual sum of the known loads. The results of this new methodology can be clearly observed in Figure-2-3. It can be seen that in the first year of the forecast (2024), there are no spatial loads assigned to circuits since the sum of the known loads for that year exceeds the IEPR forecast. Starting the second year (2025), spatial loads are assigned to

circuits since the sum of the known loads in those years is lower than the IEPR forecast. The new methodology has the effect of moving spatial loads to earlier forecast years when compared to the old methodology.

SDG&E's new methodology also adjusts the spatial loads in the last few years of the forecast (2034 and 2035, in this cycle) such that the cumulative GNA forecast matches with the cumulative IEPR forecast by the last year of the forecast period, similar to the methodology used in the past.

Figure-2-2: Cumulative load forecast growth for the 12-year forecast period

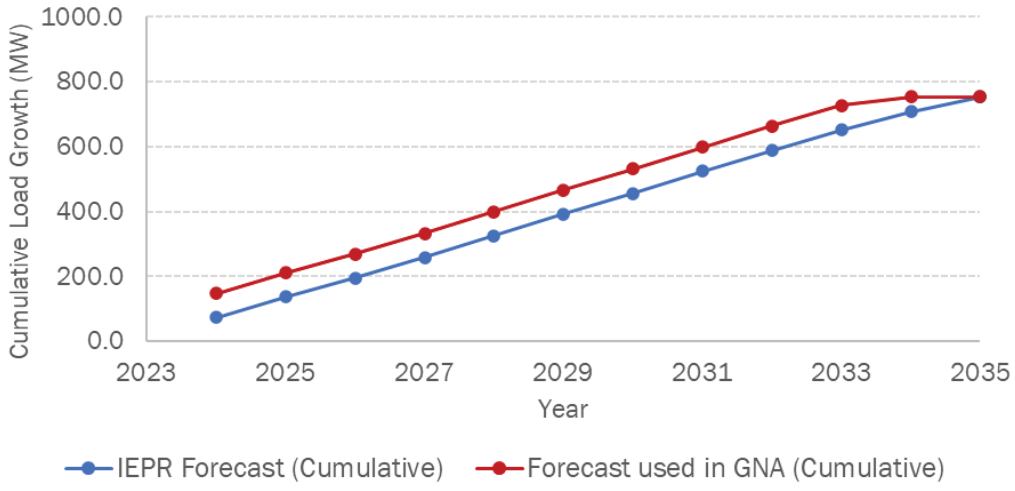
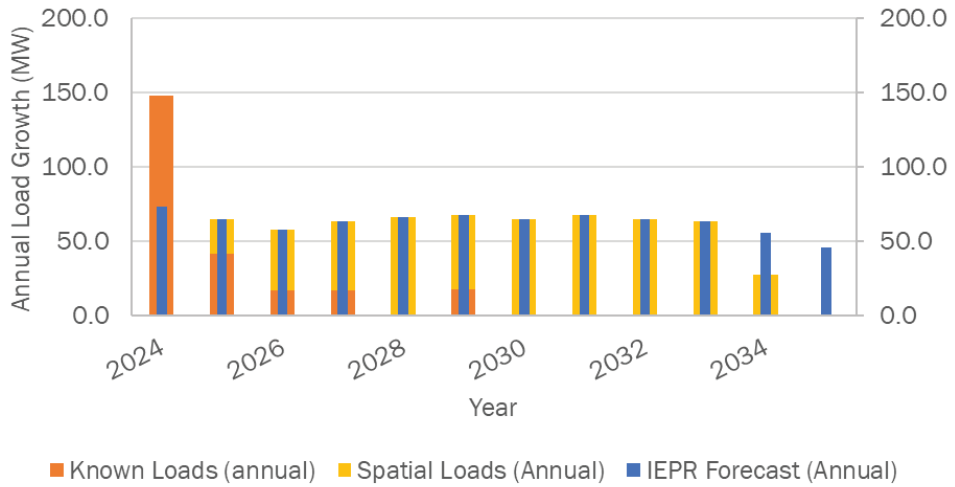


Figure-2-3: Annual load forecast growth for the 12-year forecast period



3. Review of DDOR Results – Planned Investments

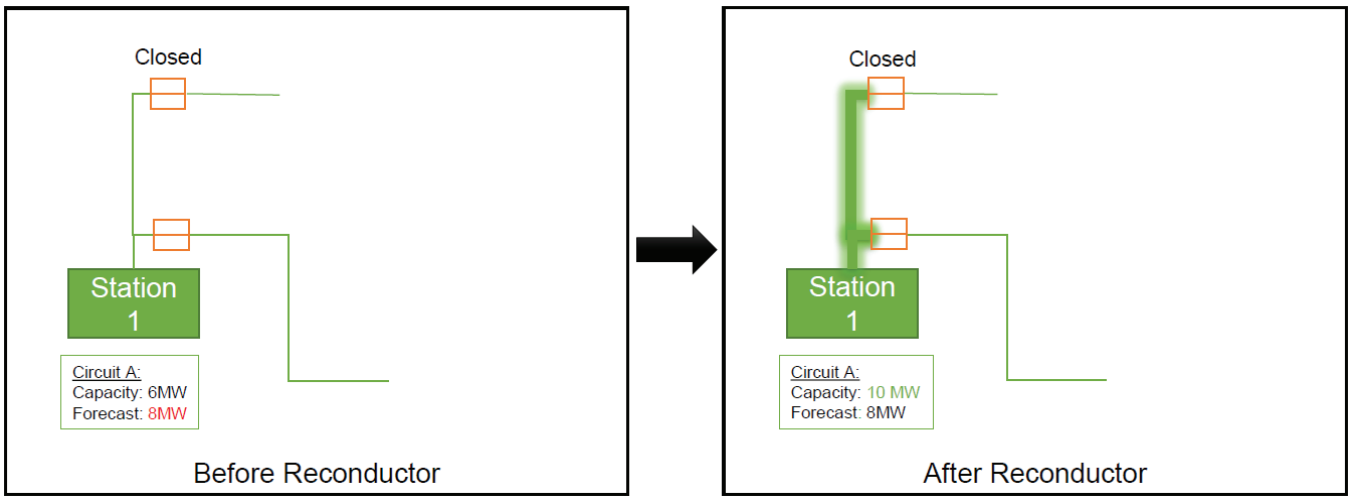
The DDOR begins with SDG&E's distribution planning engineers reviewing the needs identified in the GNA to determine the least cost, best fit and just-in-time solution to mitigate them. Typically, the least cost solution to resolve identified needs is to utilize existing equipment, which can also allow for rapid implementation. These include "no cost" load transfers and phase balancing which were discussed in Section 2.1.2. SDG&E engineers explore other options such as installing new circuits or reconductoring existing circuits if the needs cannot be appropriately mitigated using existing equipment.

SDG&E's 2024 DDOR provides an overview of 16 planned investments associated with the 25 needs identified in the 2024 GNA. Of the 25 needs identified in the GNA, nine needs are solved by load transfers as shown in Table 2-1. The remaining 16 needs are addressed through 16 planned investments. Table 3-1 shows the information for the planned investments provided in Appendix 5 of the GNA/DDOR report. The planned investment projects have in-service dates ranging from 2025 to 2028. The planned projects are as follows: (i) Two new substation bank projects, (ii) Six new circuit projects, (iii) Four projects that involve reconductoring, (iv) Three projects that involve transferring load to another circuit with new equipment, and (v) One project that involves a new equipment (fuse). SDG&E provided illustrative examples of planned project types in their 2023 DPAG meeting presentation which are reproduced below for convenience.

Reconductor

In this project type, the limiting element which is a conductor rated at 6MW is reconductored using a larger (10 MW) size conductor as show in in Figure 3-1.

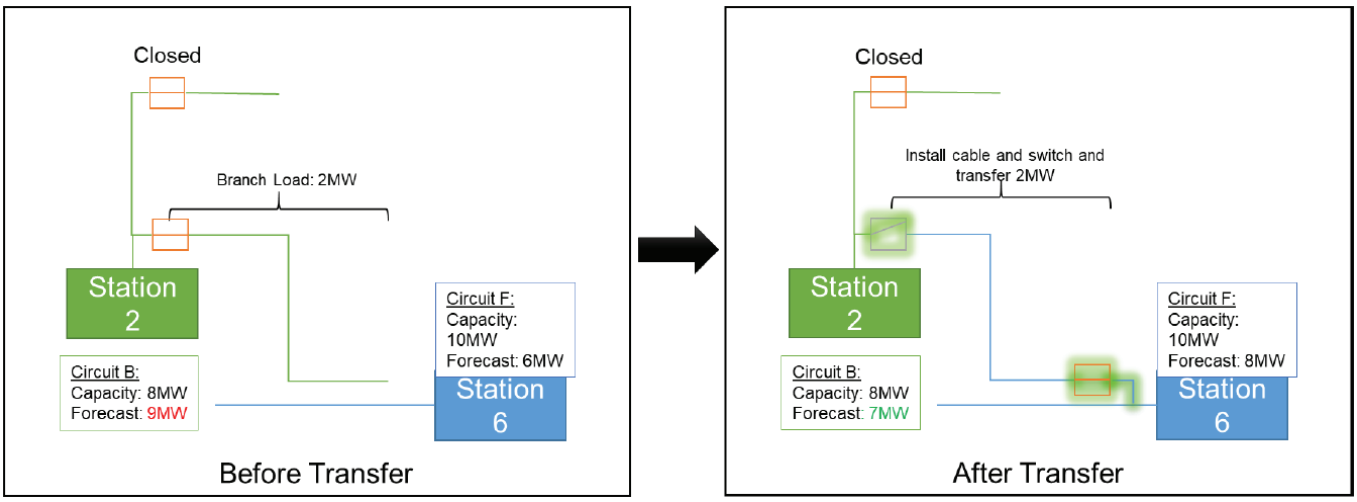
Figure 3-1: Figure showing an example project that involves reconductoring



Load Transfer with New Equipment

In this project type, Circuit B is expected to overload in the future. One of the laterals of this circuit is transferred over to a neighboring station (Station 6) using a new circuit and a switch. With this load transfer, the forecasted load remains below the rating of the circuit. This is shown in Figure 3-2.

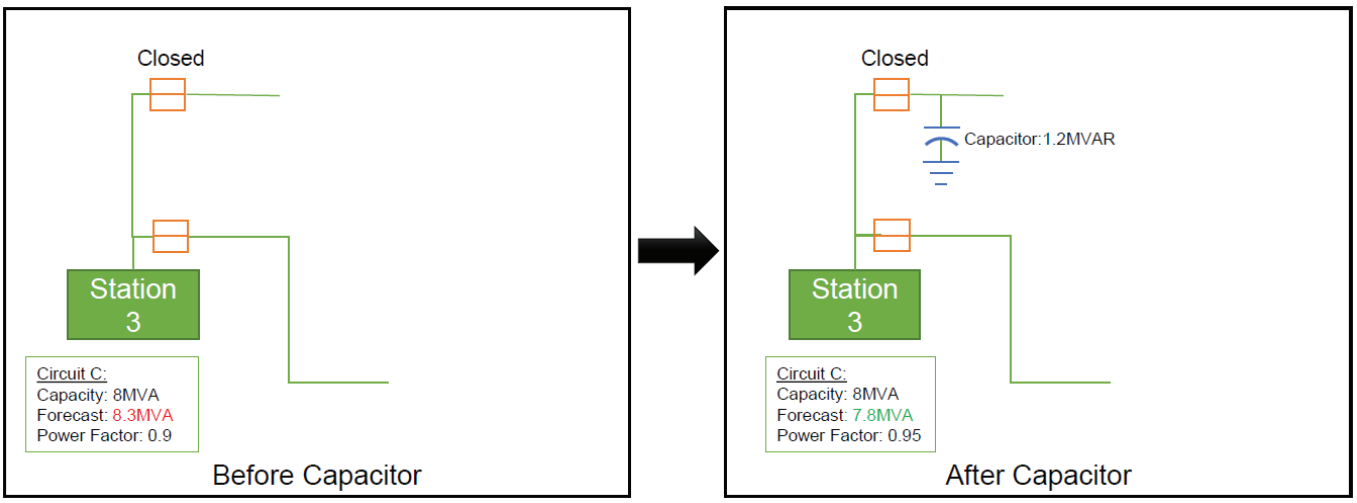
Figure 3-2: Figure showing an example project that involves a load transfer



New Capacitor

In this project type, Circuit C is expected to be above its MVA rating. The solution is to add a capacitor to the circuit to provide reactive power support. A voltage regulator project is similar to a capacitor project. This is shown in Figure 3-3.

Figure 3-3: Figure showing an example project that involves a new capacitor



New Circuit/Transformers

In this project type, Circuit D is forecasted to be above its rating in the future. The solution is to add a new Circuit E to take on some of the load that was on Circuit D. This is shown in Figure 3-4.

Figure 3-4: Figure showing an example project that involves a new circuit

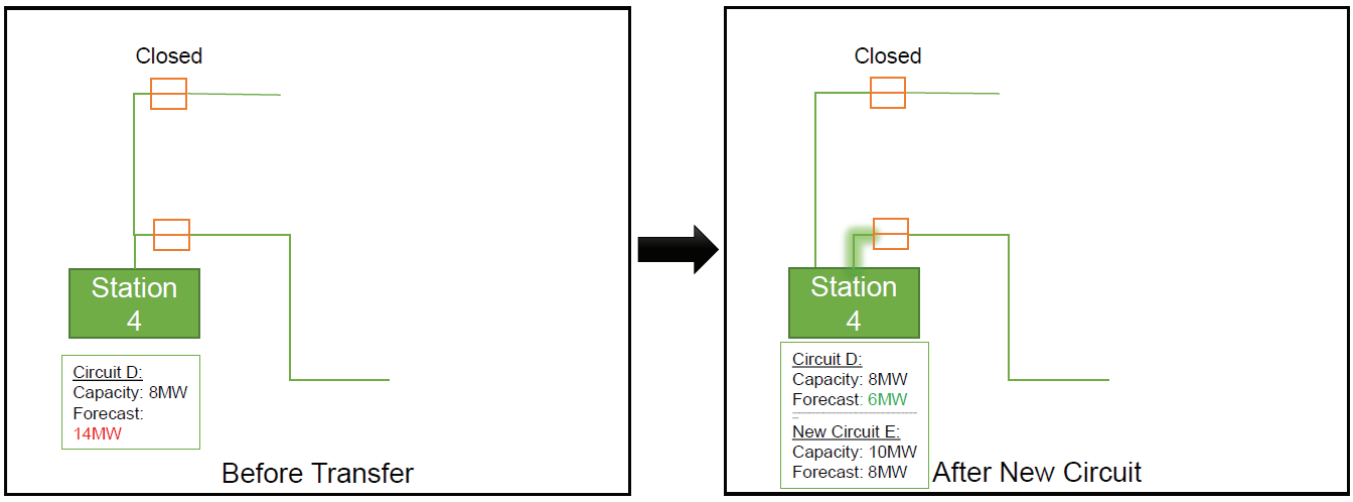


Table 3-1: Planned Investments

GNA ID	DDOR ID	Facility ID	Substation	Bank or Circuit	Distribution Service Identified	Description	Equipment Involved	In-Service Date
GNA_2024_0001	DDOR_2024_0001	2024_0015	Eastgate	1152	Thermal	Transfer with new equipment	Conductor	6/1/2025
GNA_2024_0003	DDOR_2024_0002	2024_0035	Genesee	745	Thermal	Transfer with new equipment	Conductor	6/1/2026
GNA_2024_0004	DDOR_2024_0003	2024_0005	Clairemont	274	Thermal	Transfer with new equipment	Conductor	6/1/2028
GNA_2024_0006	DDOR_2024_0004	2024_0280	Sampson	130	Thermal	Reconductor	Conductor	6/1/2028
GNA_2024_0008	DDOR_2024_0005	2024_0877	Paradise	PD3132	Thermal	New Substation Bank	Substation Bank	6/1/2028
GNA_2024_0009	DDOR_2024_0006	2024_0378	Boulevard East	444	Thermal	Reconductor	Conductor	6/1/2025
GNA_2024_0010	DDOR_2024_0007	2024_0489	Batiquitos	751	Thermal	New Equipment	Fuse	6/1/2028
GNA_2024_0013	DDOR_2024_0008	2024_0522	Melrose	205	Thermal, Backtie	New Circuit	Circuit Breaker, UG Cable, Switch	6/1/2026
GNA_2024_0014	DDOR_2024_0009	2024_0538	North City West	832	Thermal, Backtie	Reconductor	Conductor, Switch, UG Cable	6/1/2025
GNA_2024_0015	DDOR_2024_0010	2024_0559	Palomar Airport	585	Thermal, Backtie	New Circuit	Circuit Breaker, UG Cable, Switch	6/1/2026
GNA_2024_0018	DDOR_2024_0011	2024_0936	Palomar Airport	PAR42	Thermal, Backtie	New Circuit	Circuit Breaker, UG Cable, Switch	6/1/2026
GNA_2024_0019	DDOR_2024_0012	2024_0205	Border	534	Thermal, Backtie	New Circuit	Switches, Capacitors, UG Cable, Circuit Breaker	6/1/2025
GNA_2024_0021	DDOR_2024_0013	2024_0866	Vine	VN31	Thermal	New Substation Bank	Substation Bank	6/1/2027
GNA_2024_0022	DDOR_2024_0014	2024_0194	Vine	1480	Thermal, Backtie	New Circuit	UG Cable, Switch, Circuit Breaker	6/1/2027
GNA_2024_0023	DDOR_2024_0015	2024_0240	Montgomery	718	Thermal, Backtie	Reconductor	Conductor	6/1/2025
GNA_2024_0024	DDOR_2024_0016	2024_0208	Border	1160	Thermal, Backtie	New Circuit	UG Cable, Switch, Circuit Breaker	6/1/2027

3.1. DDOR Report Planned Investments - Observations, Conclusions and Recommendations

The 2024 DDOR had 16 planned investments compared to 19 planned investments in the 2023 DDOR. The table below summarizes the project types for the two years.

Table 3-2: Comparison of 2023 and 2024 DDOR Project Types

Project Type	2024 DDOR	2023 DDOR
New Substation Bank	2	2
New Circuit	6	4
Reconductor Circuit	4	2
Transfer with new equipment	3	8
New Capacitor	0	3
New Equipment (Fuse)	1	0

4. Known Load Tracking Data and Metrics

The ALJ's June 16, 2022 DIDF Reform order required all three utilities to track known load projects in the 2022 GNA/DDOR. The reform also required the Known Load Tracking data to include a unique project identifier, impacted circuit, initial service request date, load amount, current expected in-service date or indication if service request was cancelled, if appropriate, and type/category of load and, if appropriate, the actual date service was initially provided and the amount.

The May 2023 Ruling required the Utilities to provide a narrative summary report that includes metrics that are calculated using the Known Load Tracking Data and describing the implications of the calculated metrics.

This is the third cycle in which the utilities are providing the Known Load Tracking Data and the second cycle in which the utilities are providing the Known Load Tracking Data Metrics.

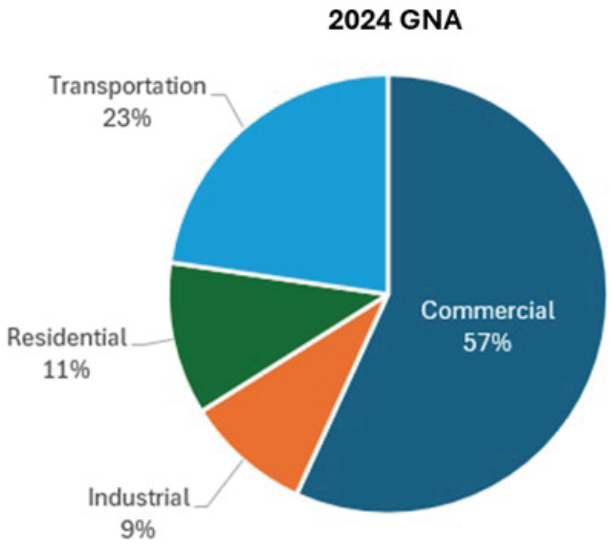
SDG&E provided the Known Load Tracking Data as Appendix 4 and the Known Load Tracking Metrics in Section 5 of their report.

4.1. Known Load Tracking Data

SDG&E's 2024 Known Load Tracking Data reflects known loads as of the end of the first quarter of 2024 along with a few refinements (additions, removal and load amount corrections) made to the tracking data between the time it was initially put together and mid-July 2024. This dataset is complete and contains data for all the fields requested in the June 2022 Reform order. In this cycle, SDG&E has enhanced known load reporting to account for spread years – i.e. a known load is energized in 2028, but a portion of the total load amount is only expected to materialize in 2029. The known load is counted in the year energized, but the load amount is spread across 2028 and 2029.

The Known Load amounts by category as a percentage of total Known Loads is shown in Figure 4-1.

Figure 4-1: Known Load Amounts by Category as a Percentage of Total



4.2. Known Load Metrics

The May 2023 Ruling required the Utilities to provide a narrative summary report that includes metrics that are calculated using the Known Load Tracking Data and describing the implications of the calculated metrics. SDG&E provide a narrative summary of Known Load Tracking Metrics in Section 5 of their report. Only a few of the metrics are summarized here. For a detailed discussion of all the metrics, please refer to SDG&E's GNA/DDOR report.

Metric 5: Service Amount Deferred (MW or MVA) (MW or MVA, %) – SDG&E interpreted this metric as measuring the amount of known loads reported for the 2023 DPP cycle that have been reported for the 2024 DPP cycle with a later in-service year. SDG&E calculated that 45% of the total known load MW reported in the 2023 DPP cycle were deferred to a future year in the 2024 DPP cycle, i.e., approximately 88MW out of 194MW of known loads in the 2023 cycle were deferred.

SDG&E calculated this metric and made the observation that the service might be deferred due to a number of factors that are not within their control. SDG&E also cautioned that the small sample size might limit the usefulness of this metric.

Metric 8: Cancellation Rate Total (%) – SDG&E interpreted this metric as measuring the number of known loads included in the 2023 DPP cycle that have been reported in this 2024 DPP cycle's known load data as being cancelled. SDGE calculated a cancellation rate of 7%, i.e., 7 known loads as being cancelled out of the total of 98 reported Known Loads in the 2023 Tracking Data.

SDG&E calculated this metric and made the observation that the calculated values may not be typical across all categories of loads. SDG&E also noted that the calculation of this metric is sensitive to when the customer cancels its service request and when that cancellation is recorded in SDG&E's records.

Metric 10: Service Request Amount Increase Rate Total and Average Amount (%, MW or MVA) – SDG&E interpreted this metric as measuring the total and average changed load amount of known loads reported for the previous 2023 DPP cycle that have been reported in the 2024 DPP cycle with an increased load amount. SDG&E calculated an increase of 8%, i.e., for the known loads that were reported in both the 2023 and 2024 cycles, there was an increase of 14.65MW.

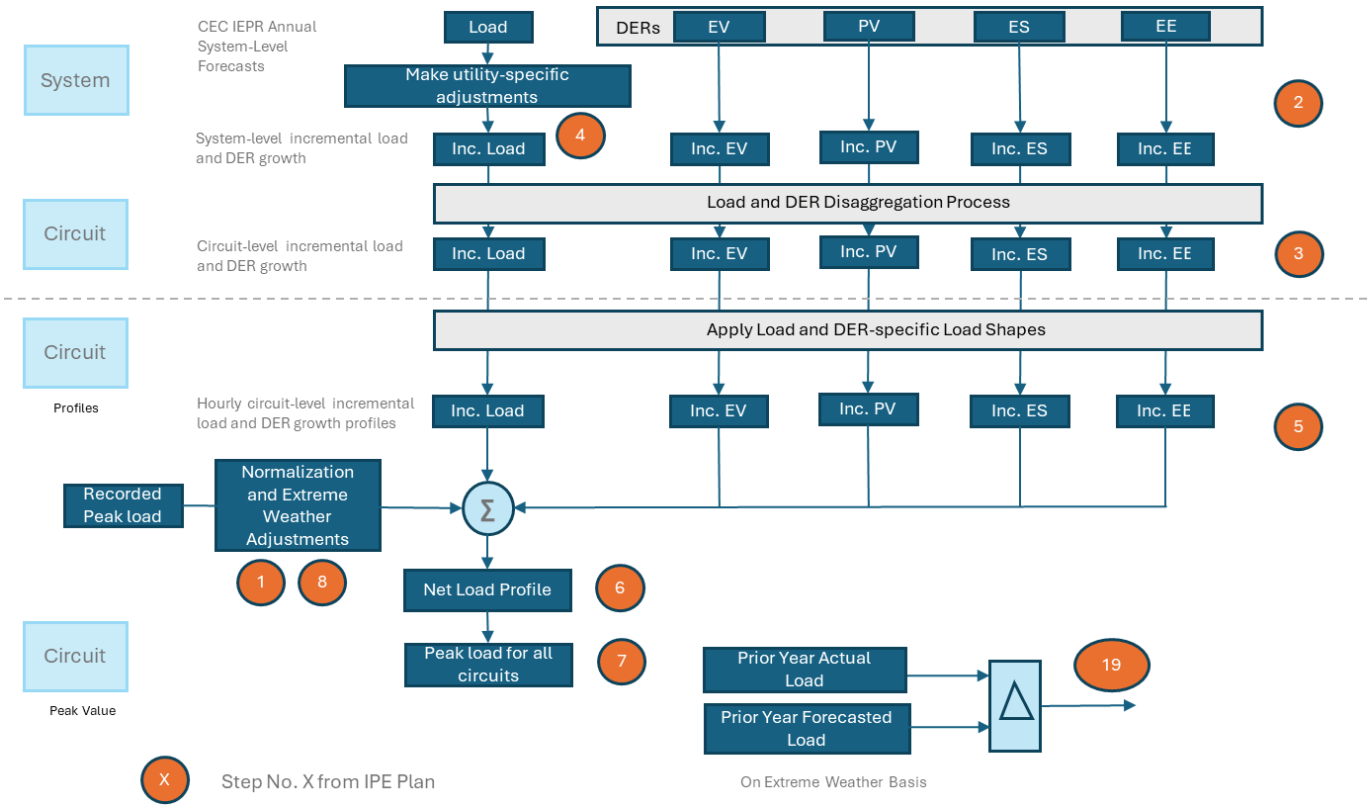
SDG&E made the observation that the increased or decreased load amounts appeared to be a small portion of the total known loads and load amounts. SDG&E also made the observation that due to the small sample size, SDG&E does not find this metric and the associated metrics (10 through 13) meaningful or useful. Furthermore, SDG&E questioned the usefulness of the average amount (of increase or decrease) calculation. The IPE will make a recommendation regarding the need and the usefulness of the average amount in the Post-DPAG report.

5. Verification Approach and Results

The results of the step-by-step verification process followed by the IPE is presented in this section. This verification review follows the framework set out in the Final IPE Plan included in Appendix C. Any differences from last year's processes are discussed in this section. The following graphic provides an overview of Steps 1 through 8 and 19 in the review process.

- Steps 1, 8 verify and validate the process used to normalize the peak load and adjust for 1-in-10 weather conditions
- Step 2 verifies and validates the process used to develop the GNA system-level annual load and DER forecasts using CEC's IEPR forecasts as the starting point
- Step 3 verifies and validates the process used for disaggregating the system-level loads to the circuit level
- Step 4 verifies and validates the process used for making adjustments to the forecasts to account for known loads
- Steps 5, 6 and 7 verify and validate the process used for developing the 576 hourly loads profile and the peak load forecast for each circuit
- Step 19 compares the recorded 2023 peak load (adjusted to 1-in-10) with the forecasted 2023 peak load obtained from the 2023 GNA-DDOR.

Figure 5-1: Business Steps Overview



A summary of the verification and validation steps that were performed and the ones that were skipped in this cycle are provided in the Table 5 1 below.

Table 5-1: Plan for Verification and Validation Steps

Verification and Validation Step	Status for 2024 DIDF
Steps 1 and 8 - Collect 2023 Actual Circuit Loading, Normalize and Adjust for Extreme Weather	Performed
Step 2 - Determine Load and DER Annual Growth on System Level	Performed
Step 3 - Disaggregate Load and DER Annual Growth to the Circuit Level	Performed
Step 4 - Add Incremental Load Growth Projects to Circuit Level Forecasts (those loads not in CEC forecast)	Performed

Steps 5-7 - Convert Peak Growth to 8760 Profile, Determine Net Load and Peak Load	Skipped in this cycle
Steps 9-11 - Initial Comparison to Equipment Ratings, Evaluate No Cost Solutions and Comparison to Equipment Ratings after No Cost Solutions	Skipped in this cycle
Step 12 - Compile GNA Tables Showing Need and Timing	Performed
Step 13 - Develop Recommended Solution	Skipped in this cycle
Step 14 - Estimate Capital Cost for Candidate Deferral Projects	Skipped in this cycle
Step 15 - Development of Candidate Deferral Projects	Skipped in this cycle since there will be no DIDF solicitation
Step 16 - Development of Operational Requirements	Skipped in this cycle since there will be no DIDF solicitation
Step 17 - Prioritization of Candidate Deferral Projects into Tiers	Skipped in this cycle since there will be no DIDF solicitation
Step 18 - Calculate LNBA Values	Skipped in this cycle since there will be no DIDF solicitation
Step 19 - Compare 2023 Forecast and Actuals at Circuit Level [proposed change would increase from ~10% of circuits to include all circuits if possible]	Performed
Step 20 - Analyze known load tracking dataset and verify the calculation of known load metrics	Update step to review the tracking data format, definitions, and processes and reporting that the utility plans to use in the 2024-25 DIDF cycle.

5.1. PROCESSES TO DEVELOP SYSTEM LEVEL FORECASTS AT CIRCUIT LEVEL

5.1.1. Collect 2023 Actual Circuit Loading, Normalize and Adjust for Extreme Weather – Steps 1 and 8

Purpose: To verify the calculation of weather-normalized peak loads for a subset of circuits selected by the IPE; Perform validation of the process.

Process: SDG&E uses the 2023 actual circuit loading data from SCADA to develop the normalized 1-in-2 peak load for each circuit. First, SDG&E uses Integral Analytics SCADA Scrubber to remove any data errors and temporary load transfers. SDG&E Engineers then review scrubbed data and identify peak load for each circuit. Generation from largest single generator (or closely coupled generators) above 0.5MW are added back based on expected generation during the peak load hour. Finally, SDG&E uses an internal tool to develop 1-in-2 weather adjusted peak load for each circuit using the peak load from the SCADA data. SDG&E used a new methodology for performing weather normalization which is discussed in this section.

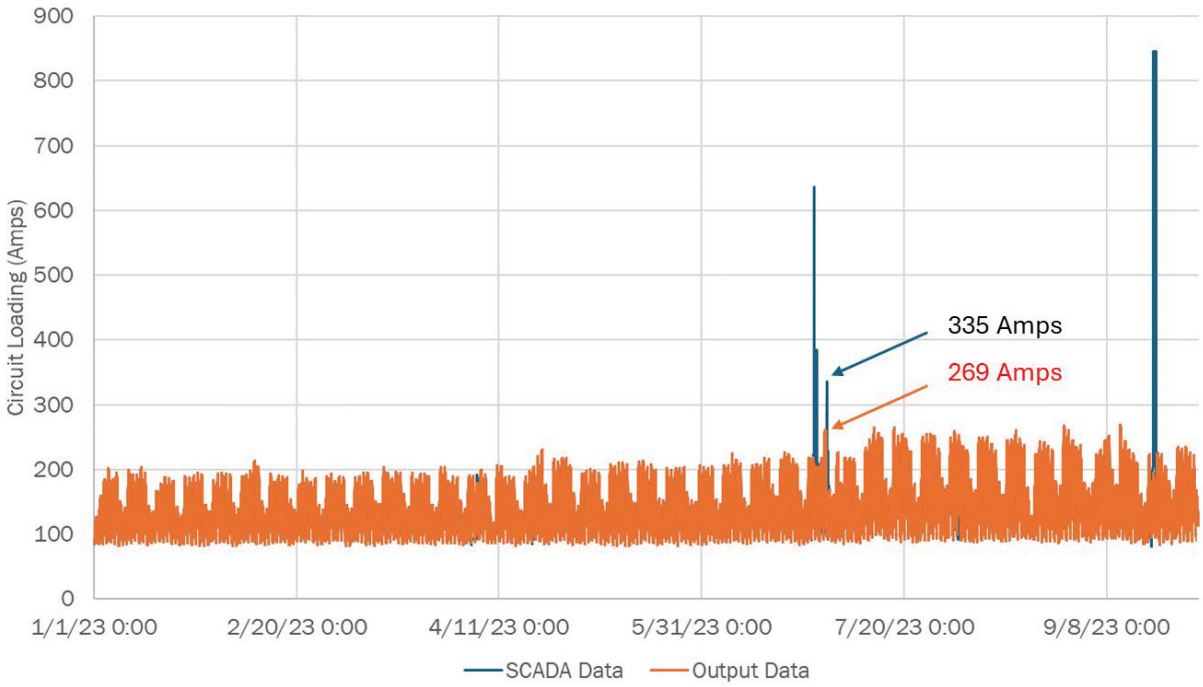
Verification: The IPE collected the observed peak load data for selected circuits that will be used in the verification of subsequent steps. This is shown in Table 5-2. This table also shows the equipment rating and the capacity with Alternate Service. SDG&E indicated that "Capacity with Alternate Service" is capacity contracted by a customer which needs to be available all the time. The loading on a circuit will be limited to the Alternate Service rating if it's lower than the equipment rating.

Table 5-2: Scrubbed 2023 Peak Load and Rating for Select Circuits

Facility ID	Facility Code	Peak Load (Amps)	Peak Date and Time	Equipment Rating	Capacity w/Alt Service
	A				
	B				
	C				
	D				
	E				
	F				
	G				
	H				
	I				

The IPE obtained the 2023 hourly raw SCADA data, as well as scrubbed data from SCADA Scrubber for all the circuits shown in Table 5-2. The raw and scrubbed data for one of the circuits is shown in Figure 5-2. In this figure, the instances of temporary load transfer and other spikes in loading can be seen in the raw SCADA data (blue). The scrubbed data is shown in orange. The peak of the scrubbed data matches with the value reported in Table 5-2 for this circuit.

Figure 5-2: Raw and Scrubbed Hourly Load (Amps) Profile for a Circuit



The IPE also verified the process used by SDG&E to normalize the peak load for 1-in-2 weather. SDG&E performs weather normalization for each circuit by assessing the circuit's historical daily maximum load and the historical Temperature-Humidity Index (THI) derived from a nearby weather station. These variables are incorporated into a linear regression model that uses more than 10 years of data to estimate the weather normalization factor. The results from IPE's verification are shown in Table 5-3.

Table 5-3: Weather Normalized Peak Loads for Select Circuits

Facility ID	Facility Code	Peak Loading from SCADA Data (Amps)	Normalization Factor	Normalized Peak Calculated by IPE (Amps)	Normalized Peak used in the GNA (Amps)
	A		1.03		
	B		1.04		
	C		1.05		
	D		1.03		
	E		1.05		
	F		1.08		
	G		1.04		
	H		1.01		
	I		1.07		

The SCADA peak loads and the weather normalization factor (in the form of a multiplier) are then input to LoadSEER. LoadSEER uses this information, along with the hourly circuit loads for the last three years and hourly temperature data for the last thirty years to develop weather-adjusted (1-in-10 or P95) 576-hourly load profiles. The P95 profiles translates to a 1-in-10 probability load profile and P75 translates to 1-in-2.

5.1.2. Determine Load and DER Annual Growth on System Level- Step 2

Purpose: To verify the calculation of annual system level load and DER growth using the CEC IEPR system-level forecasts as the starting point.

Process: The process used by SDG&E for determining system-level load and DER forecasts is summarized below. SDG&E updated the process used for this step in this cycle as discussed below.

- SDG&E uses the IEPR hourly forecast file to determine the peak value of the following load and DER components for all forecast years:
  - Unadjusted Consumption
  - Climate Change
  - Light Duty EV - Baseline and Additional Achievable TE (LDEV)
  - Medium Heavy Duty EV - Baseline and Additional Achievable TE (MDHDEV)
  - Behind-the-Meter PV (PV)
  - Behind-the-Meter Energy Storage - Residential and Non-Residential (ES)
  - Additional Achievable Energy Efficiency (AAEE)

  - Additional Achievable Fuel Switching (AAFS)
- SDG&E calculates the Baseline Peak Load for each forecast year using the peak values of Unadjusted Consumption, Climate Change and Estimated Losses assumed to be 2.5% of the Unadjusted Consumption. Baseline Peak Load is calculated by subtracting Climate Change and Estimated Losses from the Unadjusted Consumption. In prior cycles, SDG&E would obtain the Baseline Peak Load values from the CEC IEPR Peak Load Summary file which is no longer published by the CEC.
- SDG&E calculates the Baseline Load Growth (incremental) for each forecast year using the Baseline Peak Load values (the growth is the change in peak load between successive years). This Baseline Load Growth value does not include the peak load impact of any of the DERs, including LDEVs and MHDEVs.
- SDG&E compares the Baseline Load Growth value for each forecast year with the Known Load MW value for that year. The Known Load MW value for a year is the sum of all the known loads, except the Transportation Electrification (TE) Known Loads.
- If the Known Load MW value for a year is higher than the Baseline Load Growth value for that year, SDG&E does not add any Econometric (Spatial) Loads. However, if the Known Load MW value for a year is lower than the Baseline Load Growth value for that year, an Econometric Load equal to the difference between the Baseline Load Growth value and the Known Load MW value is added. This process is the same as the one that SDG&E used in the last cycle.
- The Econometric Load is then allocated to customer classes (residential, industrial, and commercial) proportional to their forecast annual energy consumption.
- Any difference between the Cumulative IEPR Baseline Load Growth forecast at the and the Cumulative Known Load MW value at the end of the forecast period is resolved by reducing the Econometric Loads in the last few years of the forecast.
- Starting in this cycle, SDG&E uses a similar process to reconcile the differences between EV Load Growth values from IEPR with the TE Known Loads. Using this methodology, SDG&E determines the Econometric TE loads at the system level.
- For the remaining DERs (PV, ES, AAFS, AAEE), SDG&E uses the peak value from the CEC hourly file (discussed in the first step of this process) as the system-level forecast.
- The system-level Econometric Baseline Load Growth (by customer class), Econometric TE Loads and the DERs are then disaggregated to circuits using allocation factors discussed in Step 3.

Verification: The IPE obtained the file for "CED 2022 Hourly Forecast - SDG&E Local Reliability Forecast" and performed the calculations as described above. The calculation of the system-level load growth value for Baseline Load Growth, TE Load Growth and DER load growth made by the IPE matched with those provided by SDG&E.

The annual growth forecasts for Baseline Load Growth and TE Load Growth used by SDG&E to develop the needs in the GNA and verified by the IPE are provided in Table 5-4. The annual growth forecasts for DERs (PV, ES, AAFS, AAEE) used by SDG&E to develop the needs in the GNA and verified by the IPE are provided in Table 5-5.

Table 5-4: Developing Annual System-level Load and EV peak load forecasts from CEC IEPR forecast

IEPR Baseline Load Growth		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
UNADJUSTED_CONSUMPTION		5171	5243	5306	5361	5423	5488	5553	5616	5681	5744	5805	5858	5901
Estimated Transmission Loss		129	131	133	134	136	137	139	140	142	144	145	146	148
CLIMATE_CHANGE		6	9	12	16	19	22	26	29	33	36	40	44	48
Baseline Load Growth (Incremental)			73	64	58	63	66	67	64	67	64	63	56	46
Baseline Load Growth (Cumulative)			73	138	195	259	325	392	457	524	589	652	708	754
Known Load Additions Totals (Incremental)			148	41	17	17	0	17	0	0	0	0	0	0
Known Load Additions Totals (Cumulative)			148	189	206	223	223	240	240	240	240	240	240	240
Spatial Allocation Incremental			0	23	41	47	66	50	64	67	64	63	27	0
Spatial Allocation Cumulative			0	23	64	110	177	227	291	359	423	486	514	514
DOM Load Growth Cumulative	0.444		0	10	28	48	77	99	128	157	185	213	225	225
COM Load Growth Cumulative	0.544		0	13	35	60	97	124	159	196	231	266	281	281
IND Load Growth Cumulative	0.012		0	0	1	2	3	3	4	5	6	7	8	8
IEPR LDEV		**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
IEPR LDEV Incremental			61	65	74	90	99	105	114	120	141	140	164	165
IEPR LDEV Cumulative		67	128	193	267	357	456	561	675	795	936	1076	1240	1405
LD Known Loads Incremental			15	3	1	1	1	1	0	0	0	0	0	0
LD Known Loads Cumulative			15	18	19	19	20	21	21	21	21	22	22	22
Disaggregate Incremental			46	62	73	89	98	104	114	120	141	140	164	165
Disaggregate Cumulative		0	46	108	181	271	369	473	587	707	848	987	1151	1316
IEPR MDHD		**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
IEPR MDHD Incremental			1	13	10	17	20	21	23	25	25	31	31	32
IEPR MDHD Cumulative		1	2	15	25	42	62	83	106	131	156	187	218	250
MDHD Known Loads Incremental			12	5	7	2	1	1	1	1	1	1	0	0
MDHD Known Loads Cumulative			12	17	25	27	28	29	30	31	31	32	32	32
Disaggregate Incremental			0	8	3	15	19	20	22	24	24	30	31	21
Disaggregate Cumulative		0	0	8	10	25	44	64	86	110	134	165	196	217

Table 5-5: Calculation of System-Level DERs to Disaggregate in LoadSEER

DERs	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Additional Achievable Fuel Switching (AAFS)	9	10	46	77	101	125	150	156	171	151	148	145
Additional Achievable Energy Efficiency (AAEE)	-20	-19	-19	-19	-19	-18	-19	-19	-19	-18	-15	-13
Behind-the-Meter Energy Storage (ES)	-12	-14	-13	-14	-13	-15	-14	-16	-15	-16	-17	-16
Behind-the-Meter PV (PV)	-112	-110	-115	-118	-119	-119	-119	-118	-117	-115	-113	-109

5.1.3. Disaggregate Load and DER Annual Growth to Circuit Level –Step 3

Purpose: To verify that the sum of the disaggregated loads and DERs at the circuit level match the CEC system-level values.

Process: A high-level summary of SDG&E's load & DER disaggregation process is given below. This process is substantially the same as those used in the prior cycle.

Load disaggregation

SDG&E uses Integral Analytics LoadSEER software to score each acre in SDG&E's territory for the likelihood of increased load by customer class. SDG&E then allocates the customer class load growth projections (verified in Step 2) to each parcel based on the ratio of the parcel score to the total score and maps the load growth to circuits based on closest proximity. Results are then reviewed by local planning engineers with specialized knowledge of local areas.

DER Disaggregation

SDG&E disaggregates system-level growth forecasts (verified in Step 2) down to the circuit level for the following five DERs: Additional Achievable Energy efficiency (AAEE), Photovoltaics (PV), Energy Storage (ES), Electric Vehicles (EV), and Additional Achievable Fuel Switching (AAFS). The system-level incremental MW capacity by DER technology type is allocated to the circuits based on methodologies specific to each DER type. Variables used to allocate incremental DER capacity geospatially include consumption by customer class, historical PV adoption by zip code, the s-curve trending model, weather zones, and many other factors specific to each type of DER. The DER disaggregation process is described in detail in Appendix 3 of the GNA report and also presented at the Distribution Forecast Workgroup (DFWG) Meeting in June 2024.

Verification: The IPE obtained circuit-level load and DER growth forecasts for all circuits from SDG&E. IPE performed a check to see if the sum of the circuit level forecasts for load and each DER matched with the corresponding system-level values verified in Step 2. Table 5-6 to Table 5-11 show the results of the verifications performed. The results show that the sum of circuit level forecasts match with the corresponding system-level values for both load and DERs.

Table 5-6: Load growth forecast verification at the feeder level

System-level load growth forecast from CEC (MW)												
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Commercial	0.0	12.6	34.9	60.4	96.8	124.1	159.3	196.2	231.5	266.2	281.0	281.0
Residential	0.0	10.1	28.0	48.4	77.5	99.3	127.5	157.1	185.3	213.1	225.0	225.0
Industrial	0.0	0.3	1.0	1.6	2.6	3.4	4.3	5.3	6.3	7.2	7.6	7.6
Total	0.0	23.0	63.8	110.5	176.9	226.8	291.2	358.6	423.0	486.5	513.6	513.6
Sum of circuit-level load growth forecast calculated by the IPE (MW)												
Commercial	0.0	12.6	34.9	60.4	96.8	124.1	159.3	196.2	231.5	266.2	281.0	281.0
Residential	0.0	10.1	28.0	48.4	77.5	99.3	127.5	157.1	185.3	213.1	225.0	225.0
Industrial	0.0	0.3	1.0	1.6	2.6	3.4	4.3	5.3	6.3	7.2	7.6	7.6
Total	0.0	23.0	63.8	110.5	176.9	226.8	291.2	358.6	423.0	486.5	513.6	513.6

Table 5-7: EE growth forecast verification at the feeder level

System-level EE growth forecast from CEC (MW)												
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Total	20.0	19.0	19.0	19.0	19.0	18.0	19.0	19.0	19.0	18.0	15.0	13.0
Sum of circuit-level EE growth forecast calculated by the IPE (MW)												
Commercial	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.4
Industrial	6.5	6.1	6.1	6.1	6.1	5.8	6.1	6.1	6.1	5.8	4.8	4.2
Residential	12.9	12.2	12.2	12.2	12.2	11.6	12.2	12.2	12.2	11.6	9.7	8.4
Total	20.0	19.0	19.0	19.0	19.0	18.0	19.0	19.0	19.0	18.0	15.0	13.0

Table 5-8: ES growth forecast verification at the feeder level

System-level ES growth forecast from CEC (MW)												
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Total	12.0	14.0	13.0	14.0	13.0	15.0	14.0	16.0	15.0	16.0	17.0	16.0
Sum of circuit-level ES growth forecast calculated by the IPE (MW)												
Commercial/Industrial	12.0	14.0	13.0	14.0	13.0	15.0	14.0	16.0	15.0	16.0	17.0	16.0
Total	12.0	14.0	13.0	14.0	13.0	15.0	14.0	16.0	15.0	16.0	17.0	16.0

Table 5-9: PV growth forecast verification at the feeder level

System-level PV growth forecast from CEC (MW)												
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Total	112	110	115	118	119	119	119	118	117	115	113	109
Sum of circuit-level PV growth forecast calculated by the IPE (MW)												
Commercial/Industrial	31	31	33	35	36	38	39	41	42	43	43	42
Residential	81	79	82	83	82	81	79	77	75	72	70	66
Total	112	110	115	118	119	119	119	118	117	115	113	109

Table 5-10: EV growth forecast verification at the feeder level

System-level EV growth forecast from CEC (MW)												
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
MHDEV	0.0	8.0	3.0	15.0	19.0	20.0	22.0	24.0	24.0	30.0	31.0	21.0
LDEV	46.0	62.0	73.0	89.0	98.0	104.0	114.0	120.0	141.0	140.0	164.0	165.0
Sum of circuit-level EV growth forecast calculated by the IPE (MW)												
MHDEV	0.0	7.8	2.5	14.4	19.0	20.0	22.0	24.0	24.0	30.0	30.8	21.0
LDEV	46.3	61.7	73.2	89.2	98.2	104.5	113.7	119.8	140.8	139.8	163.8	165.1

Table 5-11: AAFS growth forecast verification at the feeder level

System-level AAFS growth forecast from CEC (MW)												
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
AAFS	9.0	10.0	46.0	77.0	101.0	125.0	150.0	156.0	171.0	151.0	148.0	145.0
Sum of circuit-level AAFS growth forecast calculated by the IPE (MW)												
AAFS	9.0	10.0	46.0	77.0	101.0	125.0	150.0	156.0	171.0	151.0	148.0	145.0

5.1.4. Add Known Load Growth Projects to Circuit Level Forecasts (those loads not in CEC forecast) – Step 4

Purpose: To verify the process used by SDG&E to account for Known Load Growth Projects (known loads) in load forecasting process.

Process: Known load additions could be embedded in the CEC forecast or incremental to the CEC forecast. SDG&E does not have any loads that it considers to be "incremental" (as that term is used by SCE). Embedded known loads are subtracted from the CEC forecast in coming up with the system-level forecasts that are allocated to the circuits as verified in Step 2. Examples of known loads are given below:

- New Commercial: Business, Hospitals, Parking, Military and Farming
- New Residential: Home construction
- New Industrial: Manufacturing and Chemical Processing

Verification: The IPE gathered known load additions (not including TE known loads) by customer class at the circuit level, which are shown in Table 5-12. We then compared the cumulative circuit-level load by customer class with the system-level values used in Step 2. These values matched exactly.

Table 5-12: Known load additions by customer class

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
Commercial	97.8	35.8	13.6	16.8		17.4						181.4
Industrial	25.8											25.8
Residential	24.1	5.4	3.2									32.7
Transportation	26.6	8.3	8.2	3.3	1.7	1.4	1.1	1.1	1.1	1.1	0.2	54.3
Total	174.3	49.6	25.0	20.1	1.7	18.8	1.1	1.1	1.1	1.1	0.2	294.3

5.1.5. Convert Peak Growth to 576 Profile, Determine Peak Load – Steps 5, 6 and 7

SDG&E uses the circuit-level peak load growth forecast by customer class (verified in Step 3) and typical 576-hourly profiles for each customer class to develop the Peak load growth 576 hourly profile for each circuit for each forecast year. These load profiles are generated by LoadSEER based on historical load data. Similarly, SDG&E uses the circuit-level DER growth forecast by customer class (if applicable) and typical 576-hourly profile for each DER to develop the DER growth 576 hourly profile for each circuit for each forecast year. The typical 576-hourly profiles for DERs are developed using the 8760 hourly profiles in the CEC IEPR hourly file.

The verification of Steps 5-7 was excluded in this cycle. However, the typical profiles of the DERs are included for reference. These profiles were generated using the data provided in the file "CED 2022 Hourly Forecast - SDG&E Local Reliability Forecast" for the year 2035.

Figure 5-3: Typical LDEV Load Profile (Source: CED 2022 Hourly Forecast - SDG&E Local Reliability Forecast)

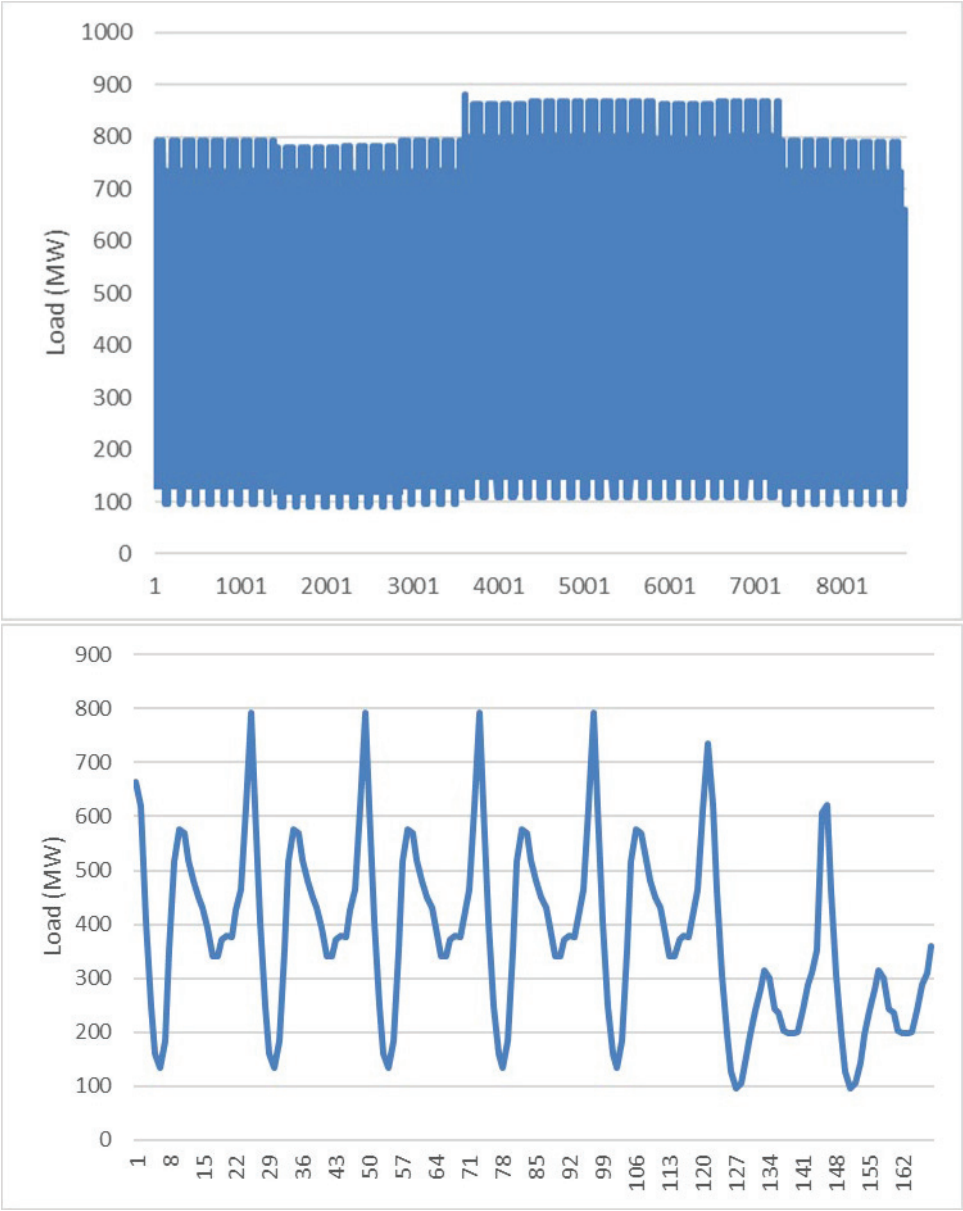


Figure 5-4: Typical MDHDEV Load Profile (Source: CED 2022 Hourly Forecast - SDG&E Local Reliability Forecast)

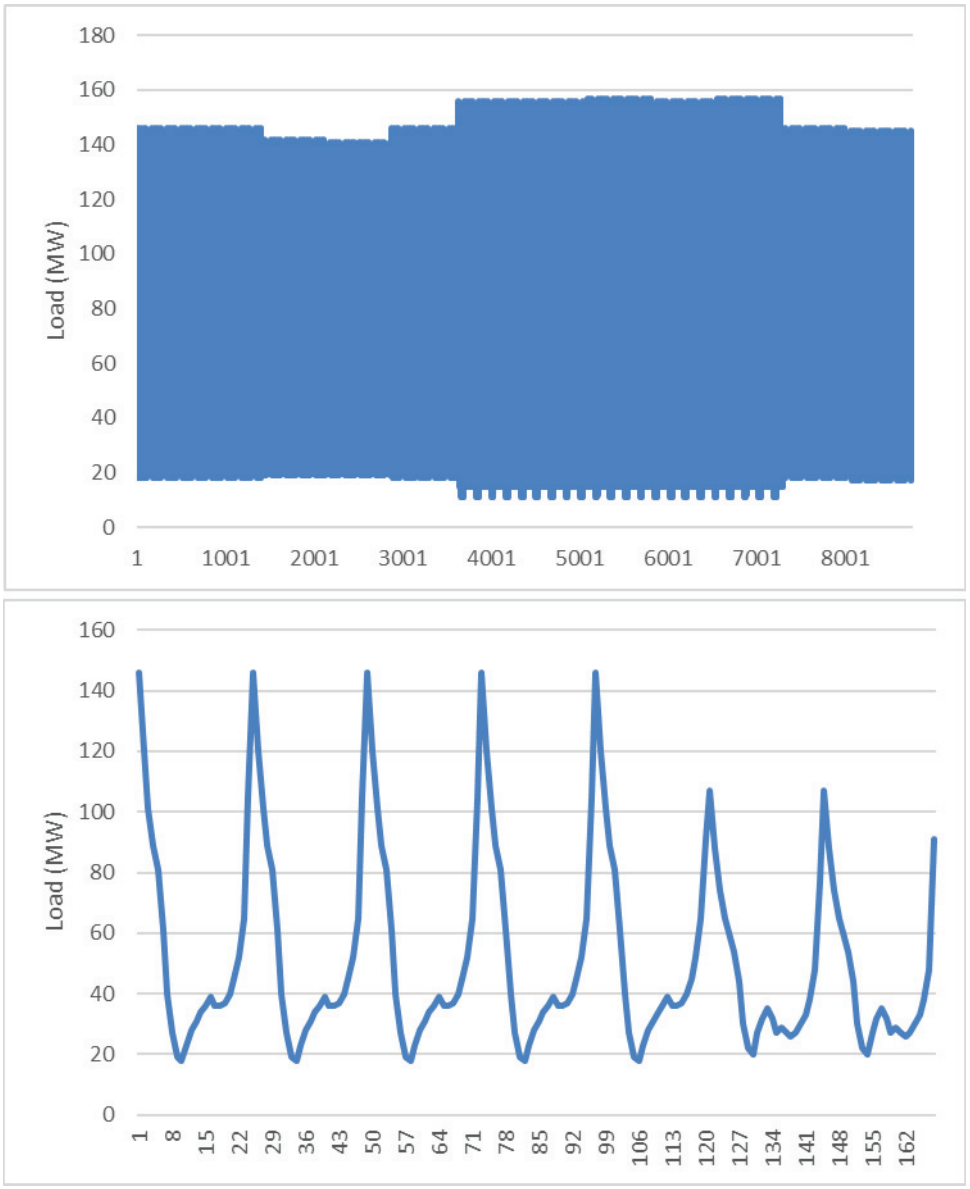


Figure 5-5: Typical BTM-EV Load Profile (Source: CED 2022 Hourly Forecast - SDG&E Local Reliability Forecast)

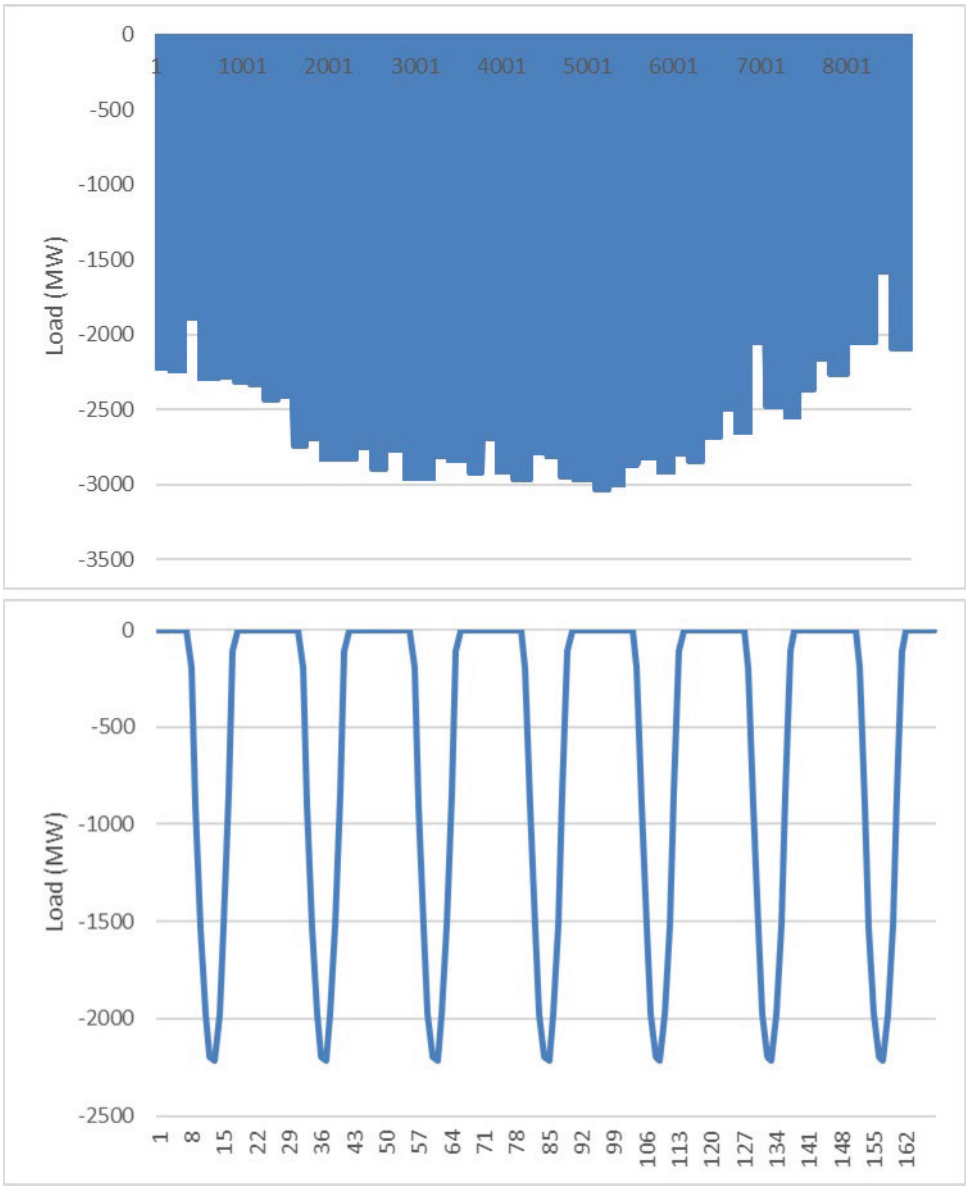


Figure 5-6: Typical BTM-ES (Non-Res) Load Profile (Source: CED 2022 Hourly Forecast - SDG&E Local Reliability Forecast)

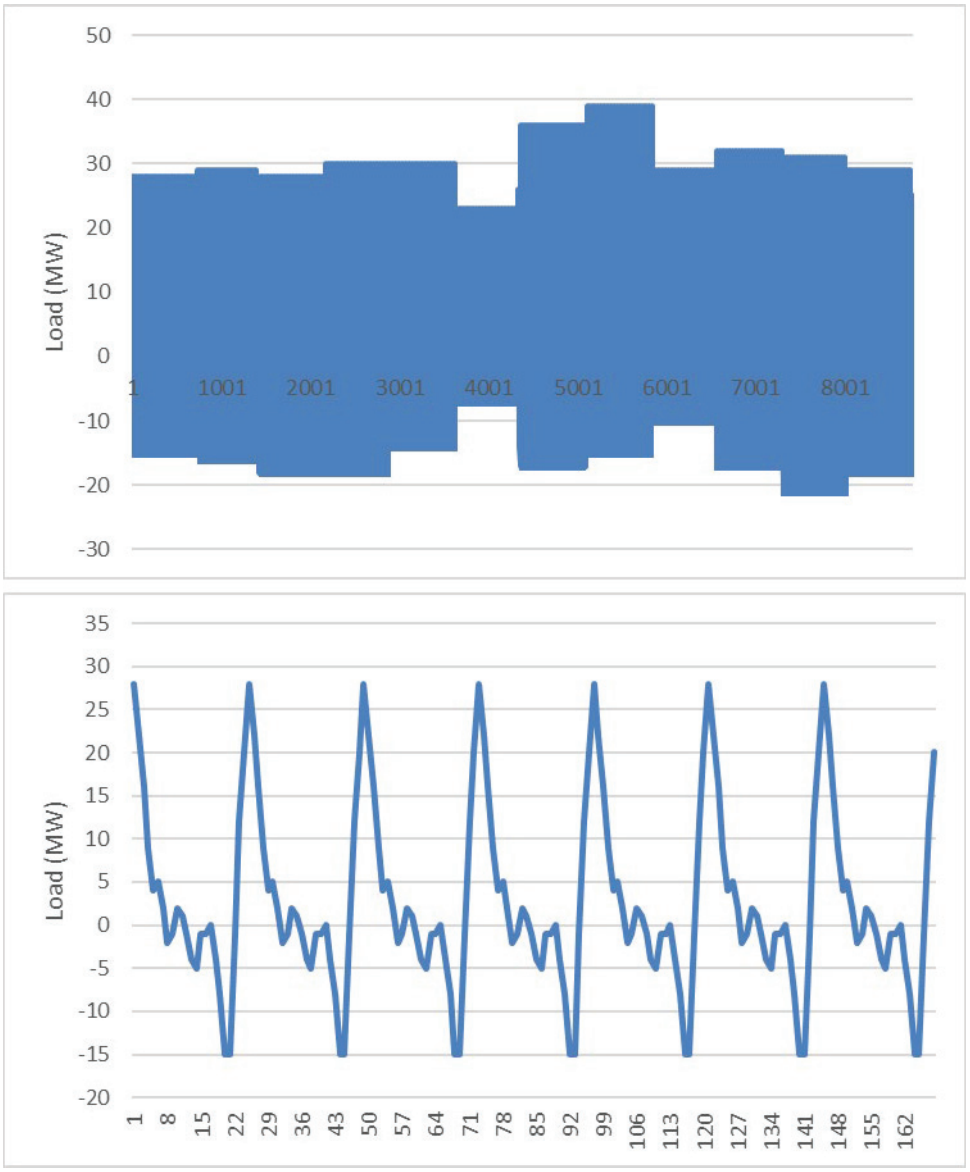


Figure 5-7: Typical AAEE Load Profile (Source: CED 2022 Hourly Forecast - SDG&E Local Reliability Forecast)

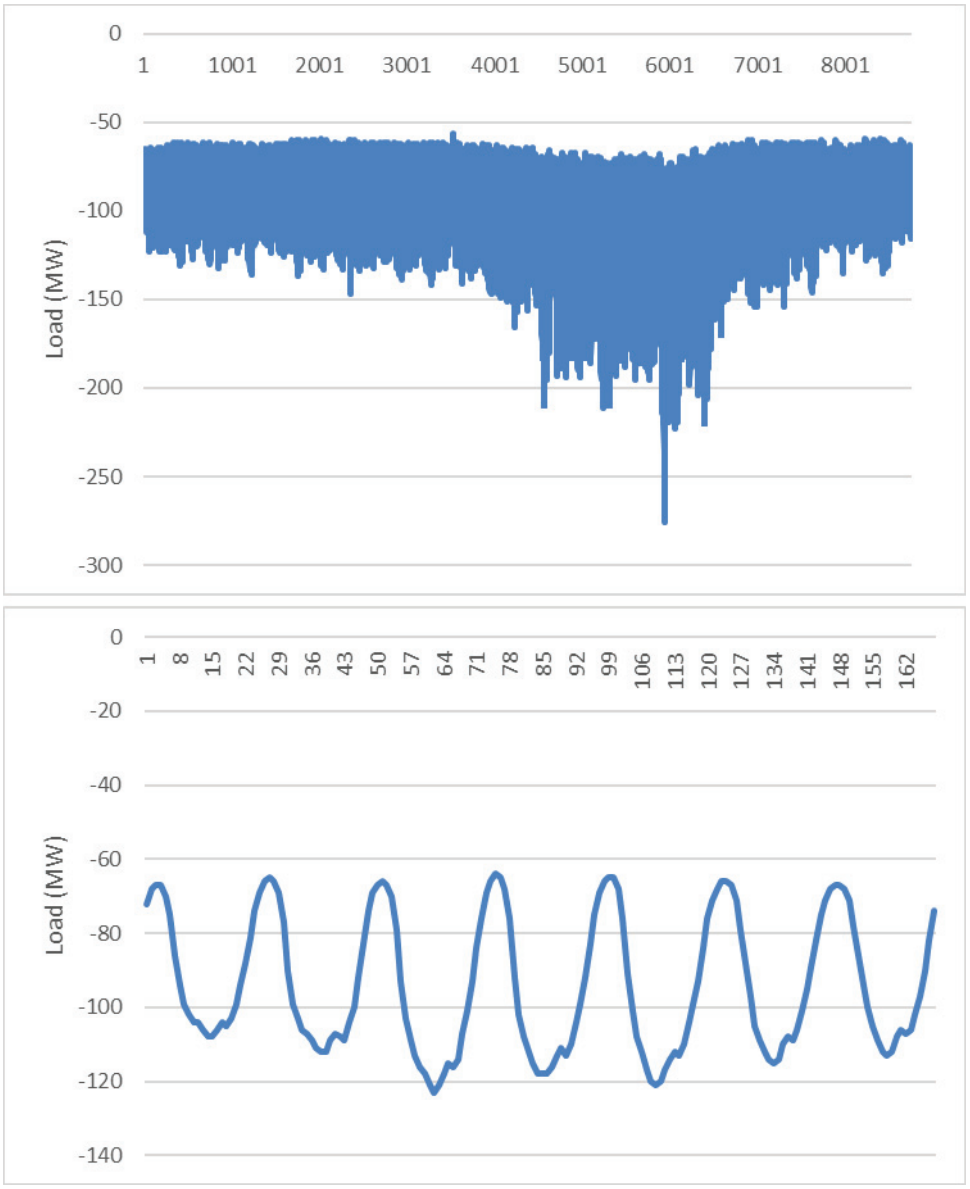
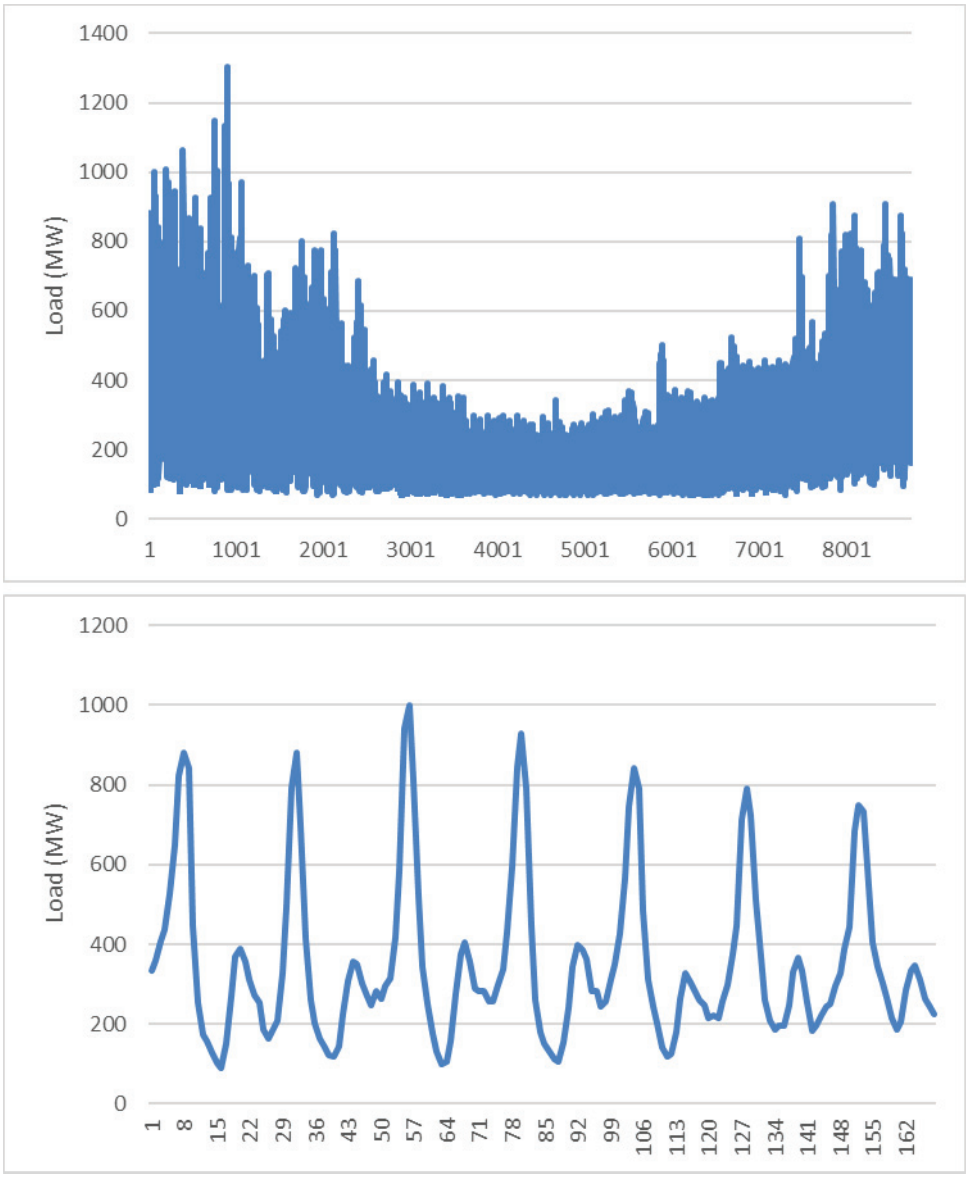


Figure 5-8: Typical AAFS Load Profile (Source: CED 2022 Hourly Forecast - SDG&E Local Reliability Forecast)



5.2. PROCESSES TO DETERMINE CIRCUIT NEEDS AND DEVELOP GNA

5.2.1. Initial Comparison to Equipment Ratings, Evaluate No Cost Solutions and Comparison to Equipment Ratings after No Cost Solutions – Steps 9, 10 and 11

Purpose: To verify the overloads calculated by SDG&E for circuits prior to load transfers, phase balancing etc.

As per the IPE Plan, the verification and validation of these steps were skipped in this cycle.

5.2.2. Compile GNA Tables Showing Need and Timing – Step 12

Purpose: To verify that SDG&E's planning standard/process were followed in determining the needs shown in the GNA table.

Verification: The IPE obtained the GNA table in Excel format that showed the forecasted peak load and the components of the peak load and verified that the sum of the components matched the forecasted peak load. There were no changes to the planning standards/criteria in the development of the GNA tables when compared with the prior cycle.

5.3. PROCESSES TO DEVELOP PLANNED INVESTMENTS AND COSTS

5.3.1. Develop Recommended Solution – Step 13

Purpose: To verify the process used by SDGE in developing the planned investment for selected projects.

As per the IPE Plan, the verification and validation of these steps were skipped in this cycle.

5.3.2. Estimate Capital Cost for Candidate Deferral Projects – Step 14

Purpose: To verify the project costs provided by SDG&E against other sources such as rate case filings. To verify the total project level costs provided by SDG&E with those included in the DDOR.

As per the IPE Plan, the verification and validation of these steps were skipped in this cycle.

5.4. PROCESSES TO DEVELOP CANDIDATE DEFFERAL LIST AND PRIORITIZE

5.4.1. Development of Candidate Deferral Projects – Step 15

Purpose: To develop a list of Candidate Deferral Opportunities and verify that this list matches the results SDG&E included in its DDOR.

As per the IPE Plan, this step was skipped in this cycle since there will be no DIDF solicitation in this cycle.

5.4.2. Development of Operational Requirements – Step 16

Purpose: To confirm operational requirements for selected circuits are developed using the process described and that the values developed are the same as included in subsequent steps of the process (DDOR and DPAG).

As per the IPE Plan, this step was skipped in this cycle since there will be no DIDF solicitation in this cycle.

5.4.3. Prioritization of Candidate Deferral Projects into Tiers – Step 17

Purpose: To verify that prioritization process used by SDG&E is consistent with the description of the description of the prioritization metrics, components, and tier ranking process.

As per the IPE Plan, this step was skipped in this cycle since there will be no DIDF solicitation in this cycle.

5.4.4. Calculate LNBA Ranges and Values – Step 18

Purpose: To verify the calculation of LNBA performed by SDG&E for the planned projects.

As per the IPE Plan, this step was skipped in this cycle since there will be no DIDF solicitation in this cycle.

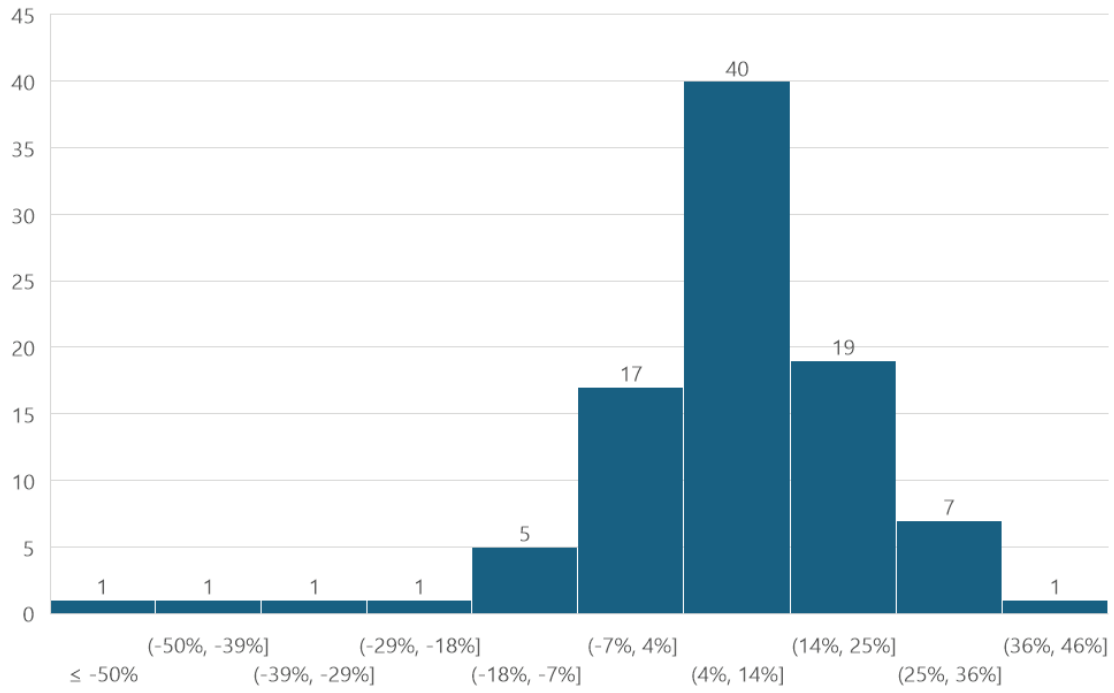
5.4.5. Compare 2023 Forecast and Actuals at Circuit Level – Step 19

Purpose: The purpose of this step is to perform a comparison of the forecast versus actual peak load for a statistically meaningful number of circuits. If the above data for all the circuits is available with minimal effort, IPE to perform the comparison for all circuits. The purpose is

to get some insight into the "accuracy" of the overall circuit planning process recognizing that there are many variables that can affect the comparison; many of these variables are beyond the control of the utility.

Verification: As in the prior cycle, SDG&E provided the forecasted peak load for year 2023 for 10% of all circuit circuits (obtained from the 2023 GNA), as well as the 2023 normalized peak load. Figure 5-9 shows the comparison where the difference between the forecast and actual expressed as percentage (of actual) is shown as a histogram. It can be seen that for the majority of the sample circuits (74 out of 94 circuits), the error is positive, i.e., forecast is higher than actuals. This is because we were comparing forecasted loads that are based on 1-in-10 weather conditions with normalized peak loads which were under 1-in-2 weather conditions[4]. The results of this type of comparison are highly dependent upon the weather conditions during the year, as well as transfers and G-1 included in the forecasts.

Figure 5-9: Histogram of Difference between Forecasted and Actual Loads



[4] SDG&E informed the IPE that the 1-in-10 adjusted 2023 peak load was not available in LoadSEER.

5.5. Known Load Tracking Data and Metrics Calculation – Step 20

Purpose: To analyze the Known Load Tracking data and verify the calculation of the Known Load metrics.

Verification: The IPE obtained the 2024 Known Load Tracking data and the calculation of the metrics in Excel format and verified the calculations made by SDG&E. A comparison of the Tracking Data Metrics between the three utilities will be included in the IPE's 2025 Post-DPAG report. Any recommendations regarding improving the calculation of metrics will also be made in the Post-DPAG report. The comments provided by SDG&E regarding the metrics will be taken into account in coming up with the recommendations.

5.6. OTHER IPE WORK

5.6.1. Respond to and Incorporate DPAG Comments – Step 24

The IPE was available during the SDG&E DPAG meeting and the SDG&E Follow-Up DPAG meeting to respond to questions raised by stakeholders. There were no written comments or questions directly addressed to the IPE. However, there were several questions addressed to SDG&E. The responses from SDG&E can be found in Appendix B-1.

5.6.2. Track Solicitation Results to Inform Next Cycle – Step 25

This step will not be required to be performed since there will be no DIDF solicitation in this cycle.

5.6.3. Treating confidential material in the IPE report – Step 26

The IPE work products have followed the process and steps included in this Business Step in developing the IPE Final Report. Additional actions were taken to minimize the material that is redacted in the public version of this report to maximize the readers ability to understand what the IPE did during this DIDF cycle.

Appendix A IPE Scope

Attachment A
Listing of Schedule and IPE-Specific Reforms for the 2020-2021 DIDF Cycle

1. IPE-specific reforms for the 2020-2021 DIDF Cycle are implemented within the IPE Scope of Work presented in Attachment B.

2. IOU contracts with the IPE for the full scope of work identified in Attachment B shall be executed by the IOUs to allow for IPE Plan development to begin as soon as possible, ideally on or before **April 17, 2020**.

3. The IOUs shall work with the IPE and Energy Division to develop IPE Plans specific to each IOU such that the IPE can submit the Draft IPE Plans to Energy Division for review on or before **May 15, 2020**.

4. The IPE scope of work may be modified by Energy Division as needed for the IPE to successfully complete each assignment. The IOUs will promptly submit a Tier 1 Advice Letter to notice changes in scope should a scope change differ significantly from the scope described in Attachment B. Minor changes should not necessitate an Advice Letter filing.

5. As required by Energy Division on an annual basis, Pre-DPAG and Post-DPAG activities may include workshops; new, re-opened, suspended, or modified working groups (e.g., Distribution Forecast Working Group); and IOU presentations and deliverables.

6. During the Post-DPAG period and in consultation with the IPE, Energy Division may identify exemplary GNA/DDOR documentation components, analytical approaches, or data strategies implemented by one or more IOUs and require that each IOU implement the reform in future DIDF cycles.

(end of Attachment A)

Attachment B
IPE Scope of Work for DIDF Implementation

Term

- January 1st each year to July 31st the following year with the term subject to update by Energy Division if needed to support each DIDF cycle.

Pre-DPAG Period

- Develop an ***IPE Plan*** for each IOU describing the GNA/DDOR review process and detailed approach to Verification and Validation of all data used by the IOUs to prepare their DIDF filing materials.
    - Verification and Validation will include a thorough investigation of the following IOU processes, among others:
        - Collecting circuit loadings and performing weather adjustments;
        - Determining load and DER annual growth on the system level;
        - Disaggregating load and DER annual growth to the circuit level;
        - Checking sum of all disaggregated load and DERs against system-level values;
        - Adding incremental known loads to circuit level forecasts;
        - Developing load, DER, and net load profiles and determining net peak loads;
        - Adjusting for extreme weather;
        - Comparisons to equipment ratings to determine if ratings will be exceeded;
        - Incorporating load transfers, phase transfers, correcting data errors;
        - Compiling GNA tables showing need amount and timing; and
        - Following the IOU's planning standard and/or planning process.
    - GNA/DDOR report review will include an in-depth analysis of the following IOU steps, among others:
        - Developing recommended solutions (planned investments);
        - Implementing the IOU's planning standards and/or planning process;
        - Estimating capital costs for planned investments;

  - Developing list of candidate deferral projects through application of screens (timing and technical);
  - Developing operational requirements;
  - Prioritization of candidate deferral projects into tiers;
  - Calculating LNBA values; and
  - Comparing prior-year forecast and actuals at circuit level for candidate deferral projects.
- Work directly with the IOUs and Energy Division to develop draft plans as needed. Development of the draft IPE Plans may include, among other activities:
  - Meeting with the IOUs and Energy Division to identify and understand each business process and tool used to complete their GNA/DDOR filings.
- Facilitate or participate in stakeholder workshops to receive feedback on the IPE Plans.
- Review and incorporate comments in the final IPE Plans.
- Submit final IPE Plans to Energy Division and the IOUs with recommendations for future improvements to the plans.
- Other technical support assignments as defined by Energy Division to ensure the IPE and Energy Division will receive from the IOUs the data and cooperation necessary to complete the required evaluation of the GNA/DDOR filings.

DPAG Period

- Participate in all workshops and meetings during the DPAG period. Prepare and deliver presentations or handouts as requested by Energy Division (*e.g.*, final IPE Plan presentations).
- Develop an ***IPE Preliminary Analysis of GNA/DDOR Data Adequacy*** for all three IOUs.
- Review any comments on the preliminary analysis that may be received and discuss the results with Energy Division.

- Facilitate meetings with Energy Division and the IOUs to correct data inadequacies and prepare further documentation and provide technical support as needed.
- Fully implement each IPE Plan as defined in the final IPE Plans.
- Develop an ***IPE DPAG Report*** for each IOU presenting GNA/DDOR review findings and Verification & Validation outcomes.
- Submit the draft reports to Energy Division for review and (if necessary) to the IOUs to check for confidential information that may be included or to clarify specific details.
- Circulate the final IPE DPAG Reports to stakeholders (public and confidential versions).
- Other technical support assignments as defined by Energy Division to ensure the DPAG process is successfully completed.

Sample Size

- The scope of review conducted by the IPE for each IOU process may encompass the full set of circuits/projects or a subset/sample of circuits or projects. Where sampling is determined to be appropriate by the IPE in consultation with Energy Division, the size of the sample set for each case will be determined by the IPE based on the application of engineering judgement.

Post-DPAG Period

- Develop a single ***IPE Post-DPAG Report*** covering all three IOUs; comparing their current and prior filings; evaluating DIDF DER procurement, operational, cost, and contingency planning outcomes; reviewing IOU compliance; and making recommendations for process improvements and DIDF reform.
- Coordinate with and support the Independent Evaluator (IE) with IE activities and the development of IE reports as needed.
- Submit the draft report to Energy Division for review and (if necessary) to the IOUs to check for confidential information that may be included.

Appendix B DPAG Survey and Comment Responses

SDG&E solicited feedback from the DPAG during their DPAG meeting on September 18, 2024 and also solicited comments by email. SDG&E received written comments provided by Stakeholders on September 25, 2024 and provided their response on October 7, 2024. This response is attached below.

DISTRIBUTION PLANNING ADVISORY GROUP FOLLOW-UP
R.21-06-017 HIGH DER OIR
SDG&E RESPONSE
DATE RECEIVED: SEPTEMBER 25, 2024
DATE RESPONDED: OCTOBER 7, 2024

Energy Division

1. **What percentage of grid needs actually materialize into projects (year by year)?**

SDG&E Response:

All grid needs are mitigated, either through low-cost measures such as phase balancing or load transfers, or through upstream distribution capacity upgrades. While the in-service dates of planned upstream distribution capacity upgrades may be adjusted through time given changes in customer needs, forecast loads, permitting requirements, material availability and construction challenges, SDG&E has, to date, been able to address all grid needs identified through the distribution planning process (DPP). Every DPP cycle, SDG&E performs re-assessment of all the projects identified in previous cycles and adjusts the year of the need based on the most recent information. There were cases where the grid need no longer exists or was deferred to later years, and SDG&E will adjust or cancel the project, as needed. For all upstream distribution capacity upgrades identified in the 2023 DPP cycle, one of the nineteen projects has been cancelled; accordingly, the percentage of projects that are either on-going or have been completed is 95%.

2. **Did you add load growth forecast above the 2022 IEPR forecast? If yes, in what categories and what are your measures to prevent double counting?**

SDG&E Response:

As a result of Known Loads included in SDG&E's 2023-2024 DPP for year 2024, the load growth included in the DPP for year 2023 to year 2024 exceeds the forecast load growth included in the CEC's 2022 IEPR for year 2023 to 2024. SDG&E has an obligation to serve all customer loads. Accordingly, over the last few years, as a result of Known Loads, it has been SDG&E's experience that load growth included in the DPP exceeds the forecast load growth included in the IEPR in the early years of the forecast horizon. However, SDG&E does not exceed the total baseline load growth over the entire IEPR forecast window. To prevent double counting, SDG&E deducts the Known Loads from the applicable IEPR system-level load forecast components before disaggregating the IEPR system-level load forecast components to individual circuits and substations.

More information about SDG&E's forecast methodology can be found in the SDG&E's 2024 GNA and the IPE's 2024 Post-DPAG report.[1]

3. **With the permission of the utilities and given the files, CPUC can upload recordings of public meetings and workshops to its YouTube channel. Are there any barriers preventing you from providing and allowing us to upload the recordings?**

SDG&E Response:

[1] The reconsolidation process between known loads and the IEPR system level growth for the 2023-2024 DPP is the same as the process used in the 2022-2023 DPP, which is described in the Post – DPAG report.

DISTRIBUTION PLANNING ADVISORY GROUP FOLLOW-UP
R.21-06-017 HIGH DER OIR
SDG&E RESPONSE
DATE RECEIVED: SEPTEMBER 25, 2024
DATE RESPONDED: OCTOBER 7, 2024

SDG&E's 2024 DPAG meeting was not recorded, so there are no files available to approve for upload.

Meetings recorded by SDG&E are subject to SDG&E's recording guidelines. Release of the recordings outside the Company is subject to internal case-by-case review. For meetings that a non-SDG&E party proposes to record, advance notice is required to ensure all parties will be informed as to the planned recording (which will allow parties not to participate if they object to the recording), or to provide formal consent to such recording.

DISTRIBUTION PLANNING ADVISORY GROUP FOLLOW-UP
R.21-06-017 HIGH DER OIR
SDG&E RESPONSE
DATE RECEIVED: SEPTEMBER 25, 2024
DATE RESPONDED: OCTOBER 7, 2024

CalAdvocates

1. **What data sources does SDG&E use to define its known loads? Are there any known loads that aren't based on customer energization requests? If yes, what other known loads does SDG&E evaluate besides customer energization requests?**

SDG&E Response:

SDG&E defines its known loads primarily through customer energization requests, which could be in various stages of completion. Customer energization requests are the primary data source; however, SDG&E's customer engagement process may provide information on planned load additions that is sufficiently reliable to include as known loads.

2. **What data sources does SDG&E use to define its pending loads? Please describe data sources for all types of pending loads.**

SDG&E Response:

Currently, SDG&E does not have a category for pending loads. However, SDG&E intends to define a pending load category for use in the 2024-2025 DPP cycle.

3. **How does SDG&E determine which of its loads are incremental to the Integrated Energy Policy Report (IEPR)?**

SDG&E Response:

As discussed in Response to Energy Division's Question 2 above, SDG&E deducts the Known Loads from the applicable IEPR system-level load forecast components before disaggregating the IEPR system-level load forecast components to individual circuits and substations.

4. **When does SDG&E use IEPR load profiles and when does it use alternative load profiles to forecast load growth for different types of customers? If SDG&E uses alternatives to the IEPR load profiles, explain the process or methodology SDG&E uses to develop its alternative load profiles.**

SDG&E Response:

SDG&E utilizes all available IEPR load profiles for IEPR load components to forecast load growth at the circuit and substation bus level. For known loads that do not have a corresponding hourly profile provided by IEPR, SDG&E uses load profiles that are generated by LoadSEER. These load profiles are created using historical load data.

5. **Describe SDG&E's plans to consider utility-owned distributed energy resources as potential solutions for grid needs in its distribution planning process.**

SDG&E Response:

SDG&E evaluates all grid needs to identify the least-cost/best-fit solution. Part of this is review includes considering whether DERs would be a feasible and cost-effective option. Generally, the

cost to complete a cutover, reconductor or other near-term solution is much lower than the cost of implementing a utility-owned DER alternative. For larger scale grid needs, land is normally required to house the DER alternative solution. This presents additional cost and time, which can quickly rule out a DER alternative. The results of the Distribution Investment Deferral Framework (DIDF), which has been in place for a number of years, is evidence that DERs are rarely cost-competitive with conventional distribution infrastructure.

There are instances where DER alternatives can be effective such as very remote grid needs. These are evaluated when situations arise and weighed against the traditional wires alternative to once again move forward with the least-cost/best-fit solution.

Of significance, utility-owned DERs will be In-Front-of-the-Meter (IFM). In general, the biggest value for IFM DERs is the capacity (e.g. Resource Adequacy and ancillary services) and energy they provide at the wholesale level. In order to realize these values, the Commission normally requires the utilities to compete with third party suppliers in order that the utility selects the lowest cost mix of resources to meet the capacity and energy needs of the utility's bundled customers. As a result, the utility is constrained in its ability to unilaterally develop utility-owned IFM DERs as solutions; i.e., as a practical matter, it is challenging for the utility to simultaneously realize the wholesale value of a utility-owned DER and, considering the need for locational specificity, its value as a cost-effective solution for a distribution need.

Appendix C Copy of the IPE Plan

Note: The IPE Plan for SDG&E is attached below.

Final IPE Plan for 2024-25 DIDF Cycle - San Diego Gas & Electric

Submitted to California Public Utility Commission

September 10, 2024

Submitted by:

Resource Innovations

Sundar Venkataraman

Barney Speckman

Contents

1 Introduction and Background

This document is the final version of the Independent Professional Engineer Plan for the 2024/25 Distribution Investment Deferral Framework (DIDF)[1] cycle for San Diego Gas and Electric. The requirements for the plan and oversight by the Energy Division are spelled out in CPUC Ruling 14-08-013 (April 13, 2020) which is attached as Appendix A. The Ruling modified the Distribution Investment Deferral Framework (DIDF) process and previous rulings with respect to the Independent Professional Engineer (IPE) scope of work.

As a result of stakeholder comments regarding improving the effectiveness of the IPE process, schedule and expected results, a number of modifications were made by the April 2020 Ruling and implemented for the first time in the 2020/21 DIDF cycle. These changes have been incorporated in the IPE Plans developed ever since. Some of these changes are highlighted below:

- The IPE review process starts earlier to allow for more time for the IPE, utilities, and the Energy Division to perform the necessary production of data in response to data requests, verify and validate the data, produce reports, and address the confidentiality of data in the reports prior to the IPE Report deadline. The review process starts in the late-April timeframe.
- The IPE scope includes development of a draft IPE Plan for each utility by mid-May (revised to mid-June in the 2023/24 cycle) in each cycle. The plan goes through a stakeholder review cycle and will be issued in final form by the IPE in August.
- The scope of the IPE review was expanded to include several new business processes.
- The scope of the review was expanded to include the new CPUC Standard Offer Contract (SOC) and Partnership Pilots (PP). The SOC pilot was off-ramped in the 2023/24 DIDF cycle and the IOUs have recommended that the Partnership Pilot be off-ramped in the 2024/25 cycle.
- The original schedule for IPE deliverables was established in the CPUC 2020 Rulings. The schedule for this cycle will follow the schedule of the 2023/24 DIDF cycle which was based on ALJ's May 2023 Reform Ruling and is shown below:
    - Draft IPE Plan. Due Week of June 17, 2024
    - Final IPE Plan. Due August 15, 2024.
    - IPE Preliminary Analysis of GNA/DDOR Data Adequacy for all three IOUs. Due September 5, 2024.

[1] The 2024-25 DIDF cycle refers to the cycle in which the GNA/DDOR reports are filed in August 2024..

- IPE Distribution Planning Advisory Group (DPAG) Report for each IOU presenting GNA/DDOR review findings and Verification & Validation outcomes. Due November 8, 2024.

- IPE Post DPAG Report covering all three IOUs, comparing their filings, reviewing compliance, and making recommendations for process improvements and DIDF reform. Due March 15, 2025.

The draft IPE Plan for 2024/2025 DIDF cycle was distributed to stakeholders to facilitate stakeholder comments prior to finalizing the IPE Plan in August 2024.

Since the draft plan was distributed to stakeholders, the CPUC has decided to suspend the procurement related activities in this DIDF cycle. As a result. this plan does not include DIDF steps related to the prioritization of projects and other steps related to determing which projects would proceed to procurement.

2 Description of the Plan

2.1 Definitions Used in the Plan and Other Deliverables

To facilitate understanding of the IPE scope of work, the following definitions are included and will be used in the Plan and throughout all of the IPE work products and deliverables.

> Verification – Is a review performed by the IPE during which an independent check is performed to determine if the results produced were developed using data assumptions and business processes that were defined and described by the utility or are based upon standard industry approaches that do not have to be defined and described. In other words, "Did the IOU follow their own processes correctly as defined and described by the IOU?"
>
> Validation – Is a review performed by the IPE during which an independent assessment is performed of the appropriateness of the approach taken by the utility to perform a task from an engineering, economics, and business perspective. In other words, "Are the processes implemented by the IOU the best way to identify all planned investments that could feasibly be deferred by DERs cost effectively? And to what extent were the IOU methodologies appropriate and effective?"

The IPE Plan covers the business processes that the IOUs use to identify which distribution or sub-transmission projects are recommended to proceed to an RFO or a Partnership Pilot seeking DER bids to determine if there is a cost-effective non-wires alternative. One of the core purposes of the plan is to answer the question - Are the IOUs identifying every project that could feasibly and cost effectively be deferred by DERs?

The business processes in the Plan are organized generally in the order that they are performed. Starting with capturing the peak load values for each circuit, using the CEC IEPR forecasts to develop utility specific system level values which are then disaggregated to the circuit level adjusted for known loads then used to determine if there is an overload or other issue during the planning period (nominally, 2024 through 2028). For circuits that have a need, a planned investment is selected and capital costs developed for that project. Due to the CPUC decision to suspend procurement related activities this plan does not include the screening of planned investments to develop a list of candidate deferral projects nor does it include the prioritization into tiers using several metrics with the projects in the first tier normally recommended for a DER RFO.

3 IPE Plan

The heart of the IPE Plan is the material contained in Table 3-1. This table lists the business processes, roles of the utility and IPE, target timing and information requirements for each business process in the IPE scope. Listed below is a more detailed description of the contents:

- IOU Business Process / IPE Review Step – This column includes a number for each business process included in the table. To make it easier for readers who will be looking at more than one utility IPE Plan, the process was started with the same numbering for all three utilities and that set of numbers was maintained as much as possible. In cases where additional steps needed to be added to accommodate a utilities specific unique process a letter was added to the previous number. For example, the step after Step 3 was added and was number Step 3a. For cases where steps are not needed, they will be spelled out in the table.
- Business Process / IPE Review Step Description – This column contains a general description of the business process being reviewed.
- Plan for 2024/25 DIDF Cycle – This column includes several types of information:
  - A brief description of what the review will include and whether it would include review of a subset of the total number of elements (i.e., circuits) or all elements and what is being examined.
  - Roles which include the role of the utility overall and the role of the IPE for both the verification and validation review. For one or both reviews, an indication is provided in most cases, for what the IPE will be checking for or confirming in the review.
    Note that there are generally two approaches to performing a verification. The first is a demonstration wherein the utility develops the necessary spreadsheet or other mechanism to show how the business process developed the results of interest and the IPE performs a walk through to view the demonstration by the utility. The second approach is wherein the IPE develops a spreadsheet or other mechanism to calculate the results of interest using data provided by the utility and then compares the results to the utilities' numerical results.
- Target Timing – This column includes a target timing for the reviews in the business process in this row or in the timing that data will be provided to the IPE.
- Data/Information Requirements – This column includes the data or information that the IPE needs to perform its review and in some cases the date the information is required.

3.1 Revisions to the IPE Plan for this Cycle

The IPE reviewed the V&V steps to determine if any of the steps can be streamlined or eliminated in this cycle without compromising the intent of the V&V process. Such streamlining would allow the IOUs and the IPE to focus additional time on recent additions in the IPE's scope. Based on this review, the IPE has determined that the following steps can be skipped in this cycle if the business process used by the utility has not changed[1]:

- Steps 5-7 - Convert Peak Growth to 8760 Profile, Determine Net Load and Peak Load
- Steps 9-11 - Initial Comparison to Equipment Ratings, Evaluate No Cost Solutions and Comparison to Equipment Ratings after No Cost Solutions
- Step 13 - Development of planned investments using planning standards.
- Step 14 - Development of capital costs for the planned investments.
- Step 16 - Development of operational requirements for CDOs.
- Step 18 - Calculation of LNBAs for planned projects.

These steps are not being removed permanently from the IPE scope. In addition, as indicated earlier, these steps will only be skipped in this cycle if the utility states that the business process for these steps have not changed from the prior cycle. These steps have been included in the table below and will be followed only if the process used by SDG&E's for this cycle is different than used in the previous cycle.

In addition, this IPE plan skips the verification and validation of the following steps due to the CPUC's suspension of DIDF procurement related processes in this cycle.[2]

- Steps 15 - Development of Candidate Deferral Projects
- Step 17 - Prioritization of Candidate Deferral Projects into Tiers
- Step 16 - Development of operational requirements for CDOs
- Step 18 - Calculation of LNBAs for planned projects

Further, The Energy Division has given direction to the IPE to meet with the utilities early in the cycle to review the tracking data format, definitions, and processes and reporting that the utility plans to use in the 2024/25 DIDF cycle. Step 20 of the IPE plan will be revised to achieve this

[1] SDG&E confirmed that the business process for these steps have not changed from prior cycles.

[2] The ALJ Ruling on June 21,2024 granted the motion filed by San Diego Gas & Electric Company (SDG&E) and Southern California Edison Company (SCE), as well as a separate motion filed by Pacific Gas and Electric Company (PG&E), requesting the Commission to suspend portions of the DIDF Process temporarily for the 2024/2025 cycle.

based on discussions with SDG&E if deemed necessary by IPE and SDG&E. Finally, the IPE has also added an optional step (Step 21) if SDG&E is interested in discussing any changes being considered for the next cycle (2025/26 DIDF) in response to the 2024 DIDF reform or any decisions from the High DER Phase 1-Track 1 Proceeding[3].

Table 3-1 SDG&E IPE Review for 2024/25 DIDF Cycle is shown starting on the following page.

[3] The Staff Proposal dated March 13, 2024 and revised on April 5, 2024 issued by the CPUC Energy Division staff contains recommendations for actions to improve distribution planning and project execution for the electric Investor-Owned Utilities (IOUs).

Table 3-1: SDG&E IPE Review for 2024/25 DIDF Cycle

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
	PROCESSES TO DEVELOP STARTING POINT LOAD, SYSTEM LEVEL VALUES AND DISAGGREGATE TO CIRCUIT LEVEL			
1	Collect 2023 actual circuit loading and adjust for weather as needed	Perform verification for 8-10 circuits jointly selected by the IPE and SDG&E: check results including normalization to typical weather day. Examine weather adjustment factors/relationships for SDG&E regions. Perform validation of the process. Roles: SDG&E to provide the 2023 peak load for selected circuits within their territory. SDG&E also to provide data for weather adjustment factors such as temperatures HDD, CDD, historical feeder/substation loads and other data, as applicable, that are used for the calculation of weather-adjusted peak loads, as well as a description of the general procedure used for calculating weather-adjusted peak loads if it has changed from the past cycle.	Selection of feeders by the July 12. The information requested in the "Data/ Information Requirements" by July 12.	▪ Description of business process used to develop weather-normalized peak loads for each circuit if it is different from 2023 DIDF. ▪ 2023 peak load and the day and hour the peak load occurred for selected circuits. ▪ 8760 hourly loads before and after removal of data errors, data drops and load transfers from SCADAScrubber for selected circuits.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		Verification: IPE to verify that the weather-adjusted peak loads calculated using the data and information provided by SDG&E matches reasonably well with the values produced by SDG&E for the circuits examined. Validation: IPE to review the business process for reasonableness and consistent with the objectives of the DIDF process.		▪ Data for weather adjustment factors such as temperatures, HDD, CDD, historical feeder loads and other factors. ▪ General procedure used for calculating weather-adjusted peak loads if it is different from 2023 DIDF.
2	Determine load and DER annual growth on system level	Perform V&V on all aspects of this process. Roles: SDG&E to provide the spreadsheets used for calculating the year-to-year, cumulative change in system-level load by class, as well as the year-to-year change in DER capacity used in the next steps. Verification: IPE to verify the calculations performed by SDG&E. IPE to compare output results of this	Description and links to IEPR forecasts provided by July 12. Spreadsheet used for calculating system-level load and DER	▪ Provide the spreadsheet that uses the CEC IEPR forecast as the starting point and calculates year-to-year change in load (and the CEC 8760 hourly files used for calculating DER growth forecasts) used in the next steps.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		process are the same as those used in the next step of the process (Step 3). Verify that the system level load and DER capacity calculated by the IPE matches reasonably well with those provided by SDG&E. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.	capacity growth by July 12.	▪ Identify which IEPR forecasts are being used for load and all DERs. ▪ Provide description of the process if different than used in 2023 DIDF, particularly on how the spatial/economic loads are developed for all the planning years
3	Disaggregate load and DER annual growth to the circuit level	Perform verification for all circuits and validation of the process. Roles: SDG&E to provide the inputs and outputs, as well as a general description of the processes used for disaggregating system-level load (changes) to circuit-level and further at a class level (Domestic, Commercial, Industrial) using LoadSEER if this process has changed from the last cycle. SDG&E to provide the inputs and outputs, as well as a general description of the	SDG&E to provide material requested in "Data/ Information Requested" by July 12.	▪ Inputs and outputs, as well as a general description of the process used for disaggregating system-level load to circuit-level loads and further at a class level (Domestic, Commercial, Industrial) using LoadSEER, if different from the

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		processes used for disaggregating system-level DER capacity to circuit-level capacity if this process has changed from the last cycle. Verification: IPE to verify that load and DER capacity forecast for selected circuits match with those used in subsequent steps of the load forecasting process (starting in Step 4). Validation: IPE to review the business process for reasonableness and consistency with the objectives of the DIDF.		process used in the 2023/24 DIDF cycle. ▪ Inputs and outputs, as well as a general description of the process used for disaggregating system-level DER capacity to circuit-level capacity, if different from the process used in the 2023/24 DIDF cycle.
3a	Check sum of all disaggregated load and DERs same as CEC IEPR System Level values	Perform V&V on this aggregation for all circuit values, as well as cross check values used in other verification checks. Roles: SDG&E provides the needed information in the previous step. Verification:		Use data from previous step.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		Verify that the sum of the loads (by class) and DER capacities at the circuit level matches reasonably well with the system level value from Step 2. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		
4	Add known loads to circuit level forecasts	Perform V&V for a subset of circuits selected by the IPE. Roles: SDG&E to provide circuit-level known load additions by customer class and type for all circuits that were used to make the adjustments to the CEC IEPR forecast in Step 2. SDG&E to also provide information, if applicable, on how forecasted loads (pending loads) are used in the planning process. Verification:	SDG&E to provide the requested information by July 12.	▪ SDG&E to provide circuit-level known load additions by customer class and type for all circuits that add up to the total known load values for each year used in Step 2. ▪ SDG&E to also provide information, if applicable, on how forecasted loads (pending loads) are

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		IPE to verify that the sum of the circuit-level known load additions by customer class matches with the system-level values in Step 2. IPE to verify that the circuit-level known load additions for selected circuits match with those used in LoadSEER (Starting with Step 5). Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		used in the planning process.
5	Convert peak growth of load to 576 profile as needed (see IPE recommendation in Section 3)	Perform V&V for a subset of circuits (8-10 circuits) selected by the IPE. Roles: SDG&E to provide 576- hourly profile for loads (Corporate Forecast, Adjustment for Load Growth) from LoadSEER for the subset of circuits. SDG&E to also provide typical load shapes for load classes (COM, IND, and DOM).	SDG&E and IPE to select the circuits for this analysis by July 10. SDG&E to provide the requested	▪ SDG&E to provide 576-hourly profile for loads (Corporate Forecast, Adjustment for Load Growth) for the subset of circuits. ▪ SDG&E to also provide typical load shapes for

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		Verification: IPE to use Corporate Forecast from Step 3, known loads from Step 4 and the corresponding 576-hourly profile for loads (Corporate Forecast, typical load shapes for load classes) and verify it against the data provided by SDG&E. Verify that the 576-hourly forecast load profiles calculated match reasonably well with those provided by SDG&E for a subset of circuits. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.	LoadSEER data by July 10.	all load classes (COM, IND, and DOM).
5a	Convert DER growth to 576 profile as needed (see IPE recommendation in Section 3)	Perform V&V for a subset of circuits selected by the IPE. Roles: SDG&E to provide 576- hourly profile for DERs (Load adjustments for EV, EE, ES, PV) from LoadSEER for the subset of circuits. SDG&E to	SDG&E to provide the requested LoadSEER data by July 10.	▪ SDG&E to provide 576-hourly profile for DERs (Load adjustments for EV, EE, ES, PV) from LoadSEER for the subset of circuits. ▪ SDG&E to also provide typical load shapes for

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		also provide typical load shapes for all the DERs, by classes as applicable. Verification: IPE to use DER forecast from Step 3 and the typical DER profiles to develop the 576-hourly profiles for DER adjustments and verify it against the data provided by SDG&E. Verify that the 576-hourly load adjustment profiles calculated for EV, EE, ES and PV match reasonably well with those provided by SDG&E for a subset of circuits. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		all the DERs, by classes as applicable. ▪ SDG&E to also provide information on how these typical DER load profiles were developed.
5b	Convert base forecast and Weather normalization adjustment of load to 576 profile	Perform V&V for a subset of circuits selected by the IPE. Roles: SDG&E to provide 576- hourly profile for base (load) forecast and weather normalization	SDG&E to provide the requested LoadSEER data by July 10.	▪ SDG&E to provide 576-hourly profile for base forecast and weather normalization adjustment from

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
	as needed (see IPE recommendation in Section 3)	adjustment from LoadSEER for the subset of circuits. SDG&E to also provide typical load shapes associated with base forecast and weather normalization adjustment. Verification: IPE to use load forecast from Step 8 and the typical profiles provided by SDG&E to develop the 576-hourly profile for loads (for base forecast and weather normalization adjustment) and verify it against the data provided by SDG&E. Verify that the 576-hourly base and weather normalization load profiles calculated match reasonably well with those provided by SDG&E for a subset of circuits. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		LoadSEER for the subset of circuits. ▪ SDG&E to also provide typical load shapes associated with base forecast and weather normalization adjustment.
6	Derive net load profile (see IPE	Perform V&V for a subset of circuits selected by the IPE.	No additional data required.	

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
	recommendation in Section 3)	Roles: SDG&E to provide 576- hourly net load profile for the subset of circuits before incorporating load transfers, phase transfers, and corrections for data errors. Verification: IPE to use the results of Steps 5, 5a and 5b to calculate net load profile and compare with the profile provided by SDG&E. Verify that the 576-hourly net load profiles calculated match reasonably well with those provided by SDG&E for a subset of circuits. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		
7	Determine net peak load (see IPE recommendation in Section 3)	Perform V&V for a subset of circuits selected by the IPE. Roles:	SDG&E to provide the requested LoadSEER data by July 10.	▪ SDG&E to provide the adjusted peak load forecast (Before Project Forecast) for the subset

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		SDG&E to provide the peak load forecast (Before Project Forecast) for the subset of circuits for the peak load hour. Verification: IPE to verify the value provided by SDG&E against the value obtained for the peak day from the 576 hourly net load profile developed in Step 6. IPE to also verify that the peak load values used in Step 9 match with the values obtained in this step for a subset of circuits. Verify that the peak value of the 576-hourly net load profile matches reasonably well with the value provided by SDG&E for selected circuits. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		of circuits for the peak load hour
8	Adjust for "extreme weather."	Perform V&V for a subset of circuits selected by the IPE. Roles:	Performed along with Step 1	▪ Description of business process used to develop P95 peak loads for each circuit, if

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
	Please note that process is completed after Step 4.	SDG&E to provide the P95 load forecasts (Base Forecast, Corporate Forecast and Adjustment for Weather Normalization) for selected number of circuits. SDG&E also to provide data for weather adjustment factors such as temperatures, historical feeder/substation loads and other data that are used for the calculation of weather-adjusted peak loads in LoadSEER, as well as a description of the general procedure used by LoadSEER for calculating weather-adjusted peak loads if this process has changed from the last cycle. Verification: IPE to use the data and the procedure provided by SDG&E to independently verify the P95 load forecasts developed by LoadSEER. If the IPE is not able to verify the peak load forecasts due to the complexity of calculations or lack of data and/or documentation, SDG&E will demonstrate the tool used, its inputs and outputs. Validation:		different from the process used in the 2023 DIDF. ▪ General procedure used by LoadSEER for calculating weather-adjusted peak loads, if different from the process used in the 2023 DIDF. ▪ P95 load forecasts (Base Forecast, Corporate Forecast and Adjustment for Weather Normalization) for selected number of circuits. SDG&E also to provide data for weather adjustment factors such as temperatures, historical feeder/substation loads and other data that are

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		used for the calculation of weather-adjusted peak loads in LoadSEER
	PROCESSES TO DETERMINE CIRCUIT NEEDS AND DEVELOP GNA			
9	Initial comparison to equip. ratings to determine if ratings exceeded (see IPE recommendation in Section 3)	Perform V&V for a subset of circuits selected by the IPE. Roles: SDG&E to provide equipment ratings for a subset of circuits selected by the IPE. Verification: IPE to compare the net peak load from Step 7 before any load transfers, phase transfers and compare it with the rating to determine if there is an overload (and the overload matches with the value calculated by SDG&E). Verify that the overloads calculated by the IPE match reasonably well with those provided by SDG&E for a subset of circuits.	SDG&E to provide requested information by July 10.	▪ SDG&E to provide equipment ratings for a subset of circuits selected by the IPE.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		
10	Incorporate load transfers, phase transfers, correct data errors (see IPE recommendation in Section 3)	Perform V&V for a subset of circuits selected by the IPE. Roles: SDG&E to demonstrate how it makes adjustments to load forecasting based upon phase transfers, data error corrections and load transfers. Demonstration will include what data is relied upon to predict the impact of making the proposed changes (i.e., phase transfer). Verification: IPE to verify the process reflected in the SDG&E demonstration is consistent with the SDG&E process description and the result are the same as used in subsequent steps in process of developing the GNA. IPE to also verify the before and after load profiles for both the circuits where	SDG&E to provide requested information by August 10.	SDG&E to provide the LoadSEER before and after load profiles for both the circuits where the load is transferred from and the load is transferred to, as well as the amount of load (MW) that was transferred.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		the load is transferred from, and the load is transferred to. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		
11	Final comparison to equip. ratings to determine if ratings exceeded (see IPE recommendation in Section 3)	Perform V&V for a subset of circuits selected by the IPE. Roles: SDG&E provided the needed information in the prior steps. Verification: IPE to compare the net peak load from Step 8 after any load transfers, phase transfers and compare it with the rating to determine if there is an overload (and the overload matches with the value calculated by SDG&E). Validation:		Data provided in Step 9.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		
12	Compile GNA tables showing need amount and need timing, etc. (per IOU's documented planning standards and/or planning process)	Perform V&V on development of GNA table entries for select circuits also confirming that planning standard/process was followed as appropriate. Roles: SDG&E to provide confidential version of Planned Investment tables in Excel format that can be filtered by the IPE. SDG&E to provide list of planning standards/criteria that were used in the development of the GNA tables. Verification: IPE to review projects in the GNA report are consistent with the information verified in the previous steps and planning standards/criteria. Validation:	SDG&E to provide requested information by August 31.	▪ Confidential GNA tables in Excel format ▪ Copy of planning standard if different than one used in 2023/24 DIDF cycle. ▪ This step focuses upon an analysis concerning whether planning standards that lead to the identification of needs were followed. It does not include review of the planning standards, themselves.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		
	PROCESSES TO DEVELOP PLANNED INVESTMENTS AND COSTS			
13	Develop recommended solution and generate list of Planned Investments (follow the IOU's documented planning standards and/or planning process) (see IPE recommendation in Section 3)	Perform V&V for a subset of projects selected by the IPE confirming that planning standard/process was followed. Roles: SDG&E to demonstrate/describe process used to determine recommended planned solution for a subset of projects. SDG&E to demonstrate the application of the process in developing the planned investment for selected projects. Verification: IPE to verify the SDG&E demonstration reflects the description of the process provided by SDG&E.	SDG&E to provide requested information by August 31.	▪ Description of process used to develop proposed planned project to address identified need for distribution projects if different from the last cycle.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		IPE to verify that results shown in the demonstration follow the described process are same as included in DDOR. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		
14	Estimate capital cost for each Planned Investment (see IPE recommendation in Section 3)	Perform V&V for a subset of projects selected by the IPE. Roles: SDG&E to provide the cost breakdown for the planned projects. The breakdown should include direct material, labor, and other costs by equipment, as well as indirect material, labor, and other costs at a project level. SDG&E to describe the Expected Accuracy Level (as defined by AACE or by another method that describes the expected accuracy range in terms of % lower and higher than the estimate) of the capital costs for the projects included in the	SDG&E to provide requested information by September 15.	▪ SDG&E to provide the cost breakdown for the planned projects. The cost breakdown should include direct material, labor, and other costs by equipment, as well as indirect material, labor, and other costs at a project level. ▪ SDG&E supporting information for costs. ▪ SDG&E to provided expected accuracy level of the cost estimates.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		DDOR. If the Expected Accuracy is different for different projects, SDG&E to provide the accuracy range for each project.[1] SDG&E to provide supporting cost information for a subset of projects. Verification: IPE to verify the project costs provided by SDG&E against other sources such as rate case filings. IPE to verify the total project level costs provided by SDG&E with those included in the DDOR. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		
	PROCESSES TO DEVELOP CANDIDATE DEFFERAL LIST AND PRIORITIZE			

[1] During the course of implementing the IPE Plan, the ED in coordination with the IPE will seek to understand the effort and cost associated with improving the accuracy of capital cost estimates (i.e., from a Class 4 estimate accuracy to a Class 3 estimate accuracy).

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
15	Development of Candidate Deferral Projects list through application of screens (timing and technical) (see IPE recommendation in Section 3)	Perform V&V for all projects put through the screening process. Roles: SDG&E to provide confidential version of Planned Investment table in Excel format that can be filtered by the IPE. SDG&E to describe the process it used to develop its Candidate Deferral Projects. Verification: IPE to use the Excel tables to develop a list of Candidate Deferral Projects following the process described by SDG&E. IPE to verify its result (list of Candidate Deferral Projects) match the SDG&E results included in the DDOR. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.	SDG&E to provide requested information by September 15.	▪ SDG&E to provide Candidate Deferral calculation process. ▪ Confidential version of Planned Investment table in Excel format that can be filtered by the IPE.
16	Development of operational	Perform V&V for a subset of candidate deferral projects selected by the IPE.	SDG&E to provide	▪ SDG&E to provide description of how

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
	requirements (daily, monthly annually etc.) (see IPE recommendation in Section 3)	Roles: SDG&E to provide description of the process used to determine operational requirements. (Required load, months and hours needed, duration of call and number of calls per year). Verification: IPE to utilize description to confirm operational requirements for selected circuits are developed using the process described and that the values developed are the same as included in subsequent steps of the process (DDOR and DPAG) Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.	requested information by September 15.	operational requirements are established if different from the process used in the 2023/24 DIDF cycle.
17	Prioritization of candidate deferral projects into Tiers (see IPE	Perform V&V on prioritization process for all candidate deferral projects. Roles:	SDG&E to provide requested information by September 15.	▪ Demonstrate active spreadsheet that calculates prioritization metrics, components and ranks projects on

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
	recommendation in Section 3)	SDG&E to provide a version of the Excel spreadsheet containing the formula used, if applicable, that is used to determine the metrics and components used to rank the Candidate Deferral Projects overall and into tiers. SDG&E to provide active version of spreadsheet (if one is used) used to rank and select candidate deferral projects for procurement using the SOC or PP procurement programs. Verification: IPE to verify that spreadsheet is consistent with the description of the description of the prioritization metrics, components and tier ranking process and SOC and PP ranking/selection process. IPE to verify that Excel results match the recommended Candidate Deferral Projects overall rankings and placement into tiers and recommended for RFO, SCO or PP procurement included in the DDOR and presented at the DPAG meetings.		those results. To include spreadsheets for prioritization of CDOs and for ranking/selecting PP projects ▪ Description of the IOU standardized prioritization metrics, components and tier ranking methodology and process and SOC and PP ranking selection process if different from the last cycle.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		
18	Calculate LNBA ranges and values for all planned investments (see IPE recommendation in Section 3)	Perform V&V for a subset of projects selected by the IPE. Roles: SDG&E to provide a spreadsheet (containing the formula) used for calculating all LNBA range values that are included in the DDOR. This includes the assumptions behind general inputs such as discount rates, inflation factors, revenue requirement multiplier and book life. SDG&E to also provide an active spreadsheet that calculates all LNBA metrics used in the project prioritization process (if different than values in the spreadsheet previously listed). Verification: IPE to verify the LNBA values by independently calculating these values using the formula used	SDG&E to provide requested information by September 30.	▪ SDG&E to provide the spreadsheet(s) used for calculating the LNBA ranges for planned projects and LNBA metric(s) used for prioritization, as well as provide the assumptions behind general inputs such as discount rate, inflation factors, revenue requirement multiplier and book life.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		in the E3 LNBA calculator and the input assumptions provided by SDG&E. Verify that the LNBA values calculated independently using the using the formula used in the E3 LNBA calculator matches reasonably well with those provided by SDG&E. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF.		
19	Compare 2023 load forecast and actuals at circuit level for selected number of distribution circuits	Perform comparison of forecasted and actual loads for a statistically meaningful number of distribution circuits to be selected by the IPE in conjunction with SDG&E. If the above data for all the circuits is available, IPE to perform the comparison for all circuits. Roles: SDG&E to provide recorded 2023 load (adjusted to 1-in-10) from the 2024 Distribution Planning Process. SDG&E to also provide feedback on	SDG&E to provide requested information by September 30.	▪ SDG&E to provide recorded 2023 peak load (adjusted to 1-in-10) for the circuits selected for this step.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		the comparison process and suggestions for improvement, if any. IPE to obtain the forecasted 2023 load from the 2023 GNA-DDOR filing for all the circuits. Verification: IPE to compare the recorded 2023 peak load (adjusted to 1-in-10) provided by SDG&E with the forecasted 2023 peak load obtained from the 2023 GNA-DDOR by the IPE and analyze the results. Validation: IPE to review the business process for reasonableness and consistency with objectives of the DIDF		
20	Analyze known load tracking dataset and verify the calculation of known load metrics	The IPE to calculate the metrics mentioned on pages 31 and 32 of the 2023 IPE Post-DPAG Report and verify against the metrics calculated by the utility that are provided in their narrative related to the known load tracking dataset included in the GNA-DDOR report. The IPE to review the tracking data format, definitions, and	SDG&E to provide requested information by September 15.	▪ Confidential version of the known load tracking dataset included in their 2024 GNA-DDOR filing. ▪ SDG&E to provide a description of the data included in their most

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		processes and reporting that the utility plans to use in the 2024/25 DIDF cycle and make recommendations for changes based on discussions with SDG&E. Roles: SDG&E to provide the confidential version of the known load tracking dataset included in their 2024 GNA-DDOR filing. SDG&E to also provide information on how they calculated the metrics (for example, Excel workbook showing the formula used for calculating the metrics or something similar) that were included in their narrative of the known load tracking dataset. Verification: IPE to analyze the known load tracking dataset provided in the 2024 GNA-DDOR filing and verify the known load metrics calculated by the utility. Validation: IPE to review the approach and process used by the utility to calculate the metrics using known load tracking dataset.		recent tracking data set. ▪ Information on the calculation of metrics (Excel workbook showing the formula used for calculating the metrics or something similar) that were included in their narrative of the known load tracking dataset.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
	Other IPE Work			
21	Optional - Review plan for changes to the planning process for the next cycle (2025/26 DIDF)	In this optional step, the IPE will review the planned changes to the planning process in response to the 2024 DIDF reform or any decisions from the High DER Phase 1-Track 1 Proceeding. The data/information required for this step will be determined based on discussions with SDG&E.	TBD	
22	Review implementing of planning standard and/or planning process	No further review is planned for the 2024/2025 DIDF cycle.		
23	Review list of internally approved capital projects	No further review is planned for the 2024/2025 DIDF cycle.		
24	Respond to and incorporate DPAG comments	Include in Final IPE Report.	Complete by November.	

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
25	Track solicitation results to inform next cycle	Part of IPE Post-DPAG Report follow-on activities in coordination with the IE.	Q3-2024	
26	Treating confidential material in the IPE report	Confidentiality – the following steps will be followed to ensure that the IPE Reports treat confidential material consistent with the rules and procedures of the CPUC. The dates provided for these steps are tentative and will be finalized based on discussions with SDG&E. a. The IPE will hold an early meeting with IOU (and potentially the ED) to discuss process for SDG&E to flag those items they intend to request Confidentiality treatment and on what basis. IPE may provide feedback to ED in lieu of having the ED attend the meeting with the IOU and IPE. Discussion to be held by September 15. b. Date: October 23, 2024 - The IOU will review all the documents[2] sent to the IPE for the V&V process for confidential information and highlight any information (in addition to information that is already	Target Dates listed in third column are aligned with the 2023/24 DIDF cycle schedule and will be updated in the Final IPE Plan.	

[2] Documents refers to any document provided to the IPE by the IOU that was not included in the IOU's public version of the GNA/DDOR reports. These documents will be included as attachments to the body of the IPE report as required by a CPUC ruling.

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		highlighted) that is confidential. The IOU will also develop an equivalent set of documents with the confidential information redacted. At the end of this process, there should be a set of confidential documents that can be included as a part of the confidential IPE DPAG report and a set of public documents. c. IPE will provide the confidential version of the body of the draft IPE Report to the IOU by October 30th (the body of the report to include all but the documents provided in previous item) for final IOU confidentiality review. d. IOU checks the draft confidential report for confidentiality and correctness and provides their comments/markups by November 6, 2024. e. After review and signoff, the IPE produces the final confidential and draft reports by November 8, 2024.		

IOU Business Process / IPE Review Step	Business Process / IPE Review Step Description	Plan for 2024/25 DIDF Cycle	Target Timing	Data/Information Requirements
		f. IOU requests CPUC confidential treatment using standard procedures. g. IOU files public version of the IPE report based on the schedule provided by the CPUC – DIDF Advice Letters submitted – November 15, 2024 h. IOU files revised public report if CPUC rejects any requests for confidential treatment; otherwise, process is complete, and no further action is needed.		

Appendix A CPUC 4/13/20 Ruling Excerpts

Attachment A
Listing of Schedule and IPE-Specific Reforms for the 2020-2021 DIDF Cycle

1. IPE-specific reforms for the 2020-2021 DIDF Cycle are implemented within the IPE Scope of Work presented in Attachment B.

2. IOU contracts with the IPE for the full scope of work identified in Attachment B shall be executed by the IOUs to allow for IPE Plan development to begin as soon as possible, ideally on or before **April 17, 2020**.

3. The IOUs shall work with the IPE and Energy Division to develop IPE Plans specific to each IOU such that the IPE can submit the Draft IPE Plans to Energy Division for review on or before **May 15, 2020**.

4. The IPE scope of work may be modified by Energy Division as needed for the IPE to successfully complete each assignment. The IOUs will promptly submit a Tier 1 Advice Letter to notice changes in scope should a scope change differ significantly from the scope described in Attachment B. Minor changes should not necessitate an Advice Letter filing.

5. As required by Energy Division on an annual basis, Pre-DPAG and Post-DPAG activities may include workshops; new, re-opened, suspended, or modified working groups (e.g., Distribution Forecast Working Group); and IOU presentations and deliverables.

6. During the Post-DPAG period and in consultation with the IPE, Energy Division may identify exemplary GNA/DDOR documentation components, analytical approaches, or data strategies implemented by one or more IOUs and require that each IOU implement the reform in future DIDF cycles.

Attachment B
IPE Scope of Work for DIDF Implementation

Term

- January 1st each year to July 31st the following year with the term subject to update by Energy Division if needed to support each DIDF cycle.

Pre-DPAG Period

- Develop an ***IPE Plan*** for each IOU describing the GNA/DDOR review process and detailed approach to Verification and Validation of all data used by the IOUs to prepare their DIDF filing materials.
    - Verification and Validation will include a thorough investigation of the following IOU processes, among others:
        - Collecting circuit loadings and performing weather adjustments;
        - Determining load and DER annual growth on the system level;
        - Disaggregating load and DER annual growth to the circuit level;
        - Checking sum of all disaggregated load and DERs against system-level values;
        - Adding incremental known loads to circuit level forecasts;
        - Developing load, DER, and net load profiles and determining net peak loads;
        - Adjusting for extreme weather;
        - Comparisons to equipment ratings to determine if ratings will be exceeded;
        - Incorporating load transfers, phase transfers, correcting data errors;
        - Compiling GNA tables showing need amount and timing; and
        - Following the IOU's planning standard and/or planning process.
    - GNA/DDOR report review will include an in-depth analysis of the following IOU steps, among others:
        - Developing recommended solutions (planned investments);
        - Implementing the IOU's planning standards and/or planning process;
        - Estimating capital costs for planned investments;

  - Developing list of candidate deferral projects through application of screens (timing and technical);
  - Developing operational requirements;
  - Prioritization of candidate deferral projects into tiers;
  - Calculating LNBA values; and
  - Comparing prior-year forecast and actuals at circuit level for candidate deferral projects.
- Work directly with the IOUs and Energy Division to develop draft plans as needed. Development of the draft IPE Plans may include, among other activities:
  - Meeting with the IOUs and Energy Division to identify and understand each business process and tool used to complete their GNA/DDOR filings.
- Facilitate or participate in stakeholder workshops to receive feedback on the IPE Plans.
- Review and incorporate comments in the final IPE Plans.
- Submit final IPE Plans to Energy Division and the IOUs with recommendations for future improvements to the plans.
- Other technical support assignments as defined by Energy Division to ensure the IPE and Energy Division will receive from the IOUs the data and cooperation necessary to complete the required evaluation of the GNA/DDOR filings.

DPAG Period

- Participate in all workshops and meetings during the DPAG period. Prepare and deliver presentations or handouts as requested by Energy Division (*e.g.*, final IPE Plan presentations).
- Develop an ***IPE Preliminary Analysis of GNA/DDOR Data Adequacy*** for all three IOUs.
- Review any comments on the preliminary analysis that may be received and discuss the results with Energy Division.

- Facilitate meetings with Energy Division and the IOUs to correct data inadequacies and prepare further documentation and provide technical support as needed.
- Fully implement each IPE Plan as defined in the final IPE Plans.
- Develop an ***IPE DPAG Report*** for each IOU presenting GNA/DDOR review findings and Verification & Validation outcomes.
- Submit the draft reports to Energy Division for review and (if necessary) to the IOUs to check for confidential information that may be included or to clarify specific details.
- Circulate the final IPE DPAG Reports to stakeholders (public and confidential versions).
- Other technical support assignments as defined by Energy Division to ensure the DPAG process is successfully completed.

Sample Size

- The scope of review conducted by the IPE for each IOU process may encompass the full set of circuits/projects or a subset/sample of circuits or projects. Where sampling is determined to be appropriate by the IPE in consultation with Energy Division, the size of the sample set for each case will be determined by the IPE based on the application of engineering judgement.

Post-DPAG Period

- Develop a single ***IPE Post-DPAG Report*** covering all three IOUs; comparing their current and prior filings; evaluating DIDF DER procurement, operational, cost, and contingency planning outcomes; reviewing IOU compliance; and making recommendations for process improvements and DIDF reform.
- Coordinate with and support the Independent Evaluator (IE) with IE activities and the development of IE reports as needed.
- Submit the draft report to Energy Division for review and (if necessary) to the IOUs to check for confidential information that may be included.

- Submit the final report to Energy Division and prepare public versions as needed.
- Support Energy Division with their review of DIDF reform comments, including comments on any IPE tasks.
- Support Energy Division's review of RFO materials and RFO outcomes.
- Attend RFO and procurement meetings and provide technical support as requested by Energy Division.
- Coordinate with the Independent Evaluator to support their evaluation and provide technical support at the discretion of Energy Division.
- Other technical support assignments as defined by Energy Division to develop and evaluate potential DIDF reforms and track and evaluate deferral opportunities that may be subject to ongoing review in other proceedings (e.g., pursuant to General Order 131-D).

List of IPE DIDF Deliverables

1. ***IPE Plan*** for each IOU describing the GNA/DDOR review process and approach to Verification & Validation for the underlying data.
2. ***IPE Preliminary Analysis of GNA/DDOR Data Adequacy*** for all three IOUs.
3. ***IPE DPAG Report*** for each IOU presenting GNA/DDOR review findings and Verification & Validation outcomes.
4. ***IPE Post-DPAG Report*** covering all three IOUs, comparing their filings, reviewing compliance, and making recommendations for process improvements and DIDF reform.

(end of Attachment B)

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Appendix D Data Received from SDG&E

The IPE received many sets of data from SDG&E to perform its verification and validation. In most cases these data sets are spreadsheets, PDFs, Power Point presentations or Word documents as listed below. These documents are provided as separate documents from the body of this report.

- Demo - Circuit A THI Calc - From Script (Public)
- Customer_Load_Shapes - Public
- 19.Forecasted Vs Actual (Public)
- 4.Specific Loads_Final_7.11.2024(Public)
- 3.Distribution Forecast Disaggregations_7.12.24(Public)
- 2.CED 2022_SDGE DER Growth_7.12.2024
- 2.CED 2022 Load Modifiers - Local Reliability_7.12.24 (Public)
- 2.CED 2022 Hourly Forecast - SDGE - Local Reliability
- 1.SCADAScrubber Circuit Loads_7.12.24(Public)
- 1.2023 Circuits Peak Loads_7.12.24(Public)
- 1.8.Weather Adjustment Factors_7.12.24 (Public)