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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future.	Rulemaking 21-06-017

JOINT INVESTOR-OWNED UTILITIES' PENDING LOADS IMPLEMENTATION WORKSHOP REPORT FILED BY PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)

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Dated: April 1, 2025

BEFORE THE PUBLIC UTILITIES COMMISSION
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Pursuant to Ordering Paragraph 11 of Decision (D.) 24-10-030, issued October 23, 2024, San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE), and Pacific Gas and Electric Company (PG&E) (collectively, the "Joint IOUs") hereby submit the attached Joint Investor-Owned Utilities' Pending Loads Implementation Workshop Report (Report), as Attachment A.[1] For ease of reference, please also find the Pending Loads Development Workshop PowerPoint Slides that were presented at the March 14, 2025 Workshop as Attachment B.

Respectfully submitted,

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[1] Pursuant to Rule 1.8(d) of the Commission's Rules of Practice and Procedure, SCE and SDG&E have authorized PG&E to file this Report on their behalf.

Attachment A

Joint Investor-Owned Utilities' Pending Loads Implementation Workshop Report

Joint Investor-Owned Utilities' (IOU)
Pending Loads Implementation Workshop Report
High Distributed Energy Resources Future Rulemaking (R.21-06-017)

I. Background

California Public Utilities Commission (CPUC or Commission) Decision (D.) 24-10-030[1] (Decision) specifies that the Joint IOUs (Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Southern California Edison Company (SCE)) are, by April 1, 2025, to hold a "Pending Loads Implementation Workshop" and file a "Pending Loads Implementation Workshop Report" with the Commission, which is to be followed by informal comments by stakeholders.[2,3] Ordering Paragraph 11 states that the workshop will discuss the following aspects of Pending Load proposals:

(1) the specific sources of information, at minimum, to inform the pending loads category;
(2) uses of pending load to inform the forecast and the investment plan;
(3) how to coordinate the pending loads data with the transportation electrification rulemaking;
(4) the types of pending loads that should be allowed to exceed the Integrated Energy Policy Report (IEPR) in the near term and justification;
(5) appropriate guardrails for the pending load category;
(6) strategies to reduce any ratepayer risk associate[ed] with pending loads;
(7) additional reporting requirements to be implemented for pending loads evaluation;
(8) clarity on what is currently included in the IEPR to ensure pending loads are incremental to known loads and loads accounted for in the spatial load growth forecasts; and
(9) alignment in the use of pending load data in the Distribution Planning and Execution Process and other planning processes including, for example, Integrated Resource Planning, the Transmission Planning Process, and General Rate Cases.

As set forth in Ordering Paragraph 12, a Tier 3 Advice Letter is due no later than June 30, 2025.[4] The Decision states that it is "prudent to allow Utilities to propose, in the workshop and the subsequent Tier 3 Advice Letter, certain types of pending Loads (e.g., loads associated with

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[1] D.24-10-030: *Decision Adopting Improvements to Distribution Planning and Project Execution Process, Distribution Resource Planning Data Portals, and Integration Capacity Analysis Maps*.
[2] D.24-10-030, Ordering Paragraph 11.
[3] Ordering Paragraph 12 of D.24-10-030 requires that by May 1, 2025 the Joint IOUs are to collect from parties "informal comments" on the "Pending Loads Implementation Workshop Report."
[4] D.24-10-030 Ordering Paragraph 12 requires that by June 30, 2025, the Joint IOUs are to submit a Tier 3 Advice Letter:
(1) proposing the method for developing the pending loads category and incorporating the category into the Distribution Planning Process;
(2) defining the types of information considered in the pending loads category and the general criteria applied to each category; and
(3) discussing the risk of pending loads that do not materialize and how to mitigate the risk.
The Decision directs the Advice Letter to address parties' informal comments. (p. 78)

freight electrification, critical facilities, and housing) to exceed the IEPR."[5] With respect to the types of Pending Loads that could exceed the IEPR forecast of system-level growth, the Commission notes that "the transportation electrification rulemaking is developing the Transportation Electrification Proactive Planning (TEPP) framework with the objective of creating unified inputs and assumptions for planning processes." The Commission states that these inputs and assumptions "will be critical for scenario development and the pending loads category in the DPP [Distribution Planning Process]" and that it is therefore "prudent to develop the data sources through the workshop, after the TEPP is adopted, to be implemented in the 2025-2026 DPP."[6]

II. Introduction

The Pending Loads Implementation Workshop was held on March 14, 2025; this report constitutes the Pending Loads Implementation Workshop Report, and the workshop slides are included as an attachment for reference. The Joint IOUs made the following points:

- Pending Loads solve a key gap, enabling proactive planning
  - Economic disaggregation is insufficient for planning anticipated load growth
- The IOUs' proposal appropriately balances risk of unserved load with risk of inefficient infrastructure investment.
  - There are clear distinctions between different types of pending loads, depending on data sources and confidence.
- The IOUs' proposals support transparency, evaluation and evolution of current processes.

III. IOU Specific Implementations

SDG&E Proposal

- *Summary of Proposal*

SDG&E's presentation began with a background and overview of SDG&E's early implementation of the pending load concept. Early implementation in the currently in-progress 2024-2025 DPP cycle was requested by the Energy Division given concerns with the timing of the Commission decision on the CPUC staff proposal. The CPUC staff proposal recommended adoption of the pending load concept. The pending load category for this cycle is sourced from SDG&E's bottoms-up Medium Duty/Heavy Duty Transportation Electrification (MD/HD TE) load forecast.

SDG&E proposes that its Pending Load category be based on an analysis that identifies the incremental difference in forecast loads between (i) the IEPR load component forecast, and (ii) the utility's bottoms-up forecast of the same load components.

[5] D.24-10-030, p. 75.
[6] D.24-10-030, p. 77-78.

SDG&E explained that its current Known Loads are based on customer-provided data, reflecting significant load additions from customer service requests and engagement. Some of these Known Loads are from customers with MD/HD TE loads. These loads are deducted from SDG&E's bottoms-up forecast of MD/HD TE loads to avoid double-counting.

- *Discuss 9 Aspects of the Pending Load Proposal*

SDG&E's presentation at the workshop described how SDG&E's proposal addresses each of the nine aspects listed in OP 11.

1. *Specific sources of information informing the pending loads category*

   The source of information that will establish SDG&E's Pending Load forecast is SDG&E's bottoms-up forecast of IEPR load components. For the 2024-2025 DPP cycle, SDG&E is using its MD/HD TE load component forecast.

2. *Uses of pending loads to inform the forecast and the investment plan*

   SDG&E proposes using Pending Loads as part of the forecasts to identify grid needs and upstream distribution capacity upgrades in its DPP. These upgrades will be listed in SDG&E's Distribution Upgrade Project Report (DUPR) ("investment plan"). This proposal is consistent with SDG&E's early implementation of Pending Loads in the 2024-2025 DPP cycle.

3. *How to coordinate pending loads data with the transportation electrification rulemaking*

   SDG&E understands that a key goal of the transportation electrification rulemaking is to develop key inputs for projecting transportation loads in the CEC's annual Integrated Energy Policy Report (IEPR) process. SDG&E's Pending Loads proposal, and its early implementation of the MD/HD TE load forecast, are well-aligned with the TEPP objective of facilitating transportation electrification load forecasting.

4. *Types of pending loads that should be allowed to exceed the Integrated Energy Policy Report (IEPR) system-level growth in the near term and justification for such exceedance*

   Pending Loads, based on reliable bottoms-up forecasts, should be allowed to exceed IEPR load growth for any years within the IEPR forecast horizon.

5. *Appropriate guardrails for the pending load category*

   SDG&E's Pending Loads proposal incorporates information from the CEC's IEPR and SDG&E's own bottoms-up forecasts of load components. Using these sources minimizes the risk of double-counting. Pending Loads are analyzed annually and reconciled against

Known Loads and the IEPR load component forecasts to minimize risk of under-utilized assets.

SDG&E presented a "pending loads reconciliation example" to illustrate how this is achieved in the 2024-2025 DPP cycle.

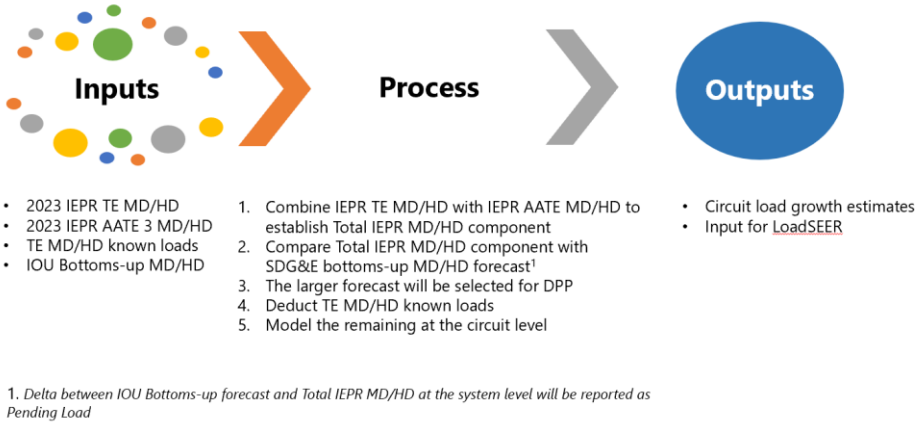


Figure 1- SDG&E's MD/HD TE Load Forecast Methodology

6. Strategies to reduce ratepayer risk associated with pending loads

The guardrails described in SDG&E's response to aspect (5) above decrease the possibility that upstream distribution capacity upgrades will be of the wrong scope, in the wrong location, or constructed sooner than necessary. This will reduce ratepayer risk.

7. Additional reporting requirements for pending loads evaluation

Ordering Paragraph 14 of D.24-10-030 directs Utilities to include in their Pending Loads Evaluation Advice Letter:

1) an analysis of the percentage of Pending Loads that became energization requests in the form of a table that includes each Pending Load used in forecasting to date;
2) deviance of load size from Pending Load to Known Load;
3) deviance of load timing between Pending Load and Known Load;
4) differences in the accuracy and usefulness of Pending Loads by load category (i.e., end use);
5) differences in the accuracy and usefulness of Pending Loads by information source and/or methodology; and
6) the expected in-service date of projects initiated as a result of the Pending Loads category.

During the presentation, SDG&E proposed to report in the GNA/DUPR the aggregate MW of Pending Loads at the system level, by year, across the DPP forecast horizon. This report will enable a comparison of Pending Loads data against Known Loads in response to Ordering Paragraph 14, Items 1 through 5.

SDG&E explained that SDG&E's Pending Loads for the 2024-2025 DPP cycle -- defined as difference between its own MD/HD TE forecasts and the IEPR MD/HD TE components -- are aggregated with all other forecasting components (baseline, PV, ES, AAFS and AAEE) to derive the annual forecast of loads used in the 2024-2025 cycle. SDG&E is unable to report Item 6, the expected in-service date of projects initiated as a result of the Pending Loads category, because the Pending Load forecast does not provide specific dates within a year that would allow SDG&E to determine whether it was a Pending Load that triggered an upstream distribution capacity upgrade.

To explain further why this would not be feasible, assume a circuit has a limit of 12 MW with its 2024 weather normalized peak at 10 MW. SDG&E's forecasting process then identifies 2.5 MW of growth on this circuit which exceeds the 12 MW limit and triggers a grid need and distribution upgrade. The total MD/HD TE load forecast for this circuit is only 1 MW of the 2.5 MW of growth. In this case, the 1 MW of MD/HD forecast load growth contributed to the grid need, but would not have created the grid need if it was the only component considered. Grid needs are evaluated after all forecast components are added and not assessed independently after each component is added to the forecast. Further, Pending Loads are only a portion of the MD/HD TE load forecast.

8. *How to ensure pending loads are incremental to known loads and loads accounted for in the spatial load growth forecasts*

As described in SDG&E's Pending Loads Proposal above, SDG&E only models the incremental portion of the bottoms-up load component forecast as compared to the IEPR load component forecasts. Further, SDG&E deducts Known Loads from the forecasts of the applicable load component to remove any double-counting. This helps to ensure that Pending Loads are incremental to Known Loads and to the 2023 IEPR load component forecasts.

9. *How best to achieve alignment between the use of pending load data in (a) the Distribution Planning and Execution Process, and (b) other planning processes including, for example, Integrated Resource Planning, the Transmission Planning Process, and General Rate Cases*

During the presentation, SDG&E shared that since the resource addition methodology in the Integrated Resource Planning (IRP) process uses a zonal approach with the system-level IEPR load forecast as an input, Pending Loads are not reflected in IRP.

Under the current process, for Pending Loads to be reflected in the CAISO's Transmission Planning Process (TPP) it would be necessary to allow the TPP to use bus-level forecast load components other than those developed by the CEC in the IEPR.

As it relates to SDG&E's future General Rate Cases (GRCs), upstream distribution capacity upgrades identified in the DPP will reflect the impact of Pending Loads. These upgrades will be inputs to SDG&E's GRC funding requests.

- *Stakeholder Questions & Answers*

  - "Can you speak in more detail about the types of data that will inform the pending load category and modeling at the circuit level?"

    SDG&E explained that its proposal uses bottoms-up data as inputs to develop the forecast of Pending Loads. The exact type of data will vary depending on the specific load component. For SDG&E's MD/HD TE study, data sources include Department of Motor Vehicles (DMV), RigDig[7] and other data sources related to the vehicle information within SGD&E's territory. However, in the future, if the Pending Loads are forecast for another type of load, the data sources and inputs will be different and unique to that specific load component. The general criterium of the bottoms-up load forecast is that it will be based on bottoms-up data representative of SDG&E's distribution service territory.

  - "Would the data sources for the bottoms-up forecast be transparent and available for stakeholders to see and vet?"

    SDG&E responded by stating that the data and methodology used to develop SDG&E's MD/HD TE load forecast has been previously presented at public forums, including a CEC workshop. In response to the feedback at the Pending Loads workshop, SDG&E is providing here more details on its MD/HD TE load forecast methodology.

    SDG&E's MD/HD TE load forecast utilizes a bottoms-up approach, drawing from a variety of data sources matched to geographic locations within SDG&E's territory. These sources include RigDig, Standard Industrial Classification (SIC), DMV records, and SANDAG Geographic Information System (GIS), Zoning, and Port data. The datasets are meticulously refined to eliminate duplicates and undergo zoning and satellite imagery checks. Address mapping and ZIP code verification are also conducted to align the fleet locations with SDG&E's circuit locations.

    Once potential areas of MD/HD TE load growth are identified, adoption rates are determined based on California Zero Emission Vehicle (ZEV) regulations. For each vehicle, energy efficiency and daily mileage are estimated to calculate the MW load at each location. These estimates are based on current MD/HD EV technology

[7] RigDig is a well-recognized industry database that stores and provides truck history and records. RigDig uses data provided by the United States Department of Transportation (DOT) and the Federal Motor Carrier Safety Administration (FMCSA).

specifications and yearly fleet mileage data. Finally, these load amounts are aggregated at the circuit level to generate circuit-specific forecasts through this detailed bottoms-up analysis.

- "If SDG&E runs the planning analysis twice, once with IEPR forecasts and again with the bottoms-up forecasts, would the delta in projects become the data for reporting item 6? Is the issue with the process that where it would be too complicated to run the process twice?"

  SDG&E responded by stating that this is not just an issue with the process being too complicated. SDG&E pointed to "pizza making" as an analogy describing how Pending Loads, embedded in the MD/HD TE load forecast, are an integral part of the load forecast used in the DPP. SDG&E explained why running planning analysis twice – once using all IEPR assumptions and again including SDG&E's Pending Load forecast -- would not allow a determination of which upstream distribution capacity upgrades were triggered by SDG&E's Pending Load forecast. The main reason is that the IEPR MD/HD TE load forecast is a system-level forecast; it is not a circuit-level forecast. The system-level forecast must be disaggregated in a way that produces fundamentally different results from the bottoms-up forecast. For example, if a circuit is found to have a large percentage of the MD/HD load growth from the bottoms-up forecast, , an IEPR MD/HD TE based forecast may disaggregate a proportionally small amount of load to that circuit. In this case, the "pending loads" for this circuit would be very large. This doesn't necessarily prove that new projects on that circuit are caused by a large amount of pending loads because the way MD/HD load was disaggregated from the IEPR MD/HD TE forecast is also a factor. Because this factor cannot be separated from the use of the IEPR MD/HD TE component, there is no way to determine which factor is "triggering" the project. Without a circuit level IEPR MD/HD TE load forecast, SDG&E does not have the ability to run planning analysis to identify if there is a need for an upgrade to compare with the output from planning analysis based on the bottoms-up forecast (aggregated at the circuit level).

- "It appears that SDG&E's proposal is more centered around shifting to a bottoms-up forecasting methodology, instead of just trying to integrate a bucket of projects/pending loads. Is this understanding correct?"

  SDG&E responded by confirming the understanding is correct. SDG&E performs the bottoms-up forecast to more accurately inform the circuit-level needs. The bottoms-up forecast is not produced with the objective of exceeding the IEPR load forecast. However, if SDG&E's bottoms-up forecast does exceed the IEPR load forecast, the incremental portion is effectively "Pending Loads" that should be included in the DPP so that the expected load growth can be planned for.

- "Why should we have confidence that utilities' bottoms-up forecast can displace the IEPR forecasts?"

  SDG&E responded by explaining that it has collaborated, and will continue to collaborate, with the CEC on the IEPR load forecasts. SDG&E agrees that the IEPR process is robust and transparent, but a system-level modeling process does not provide the granularity needed for SDG&E to fully reflect the needs within the SDG&E distribution service territory. Even where the IEPR does produce bus-level load component forecasts, those components are *incremental* to the IEPR baseline load forecast; i.e., there is no locational granularity for the IEPR baseline line load forecast. Further, the IEPR's bus-level load component forecasts do not provide hourly loads for all hours of a year. This lack of temporal granularity limits the usefulness of the IEPR's bus-level load component forecasts for DPP purposes.

  Over the past few DPP cycles, Known Loads have consistently exceeded IEPR's forecast load growth in the early years of the planning horizon. Energy Division and many stakeholders have expressed an interest in bottoms-up analysis to enhance the planning process. This does not suggest there is any issue with IEPR, as IEPR is a system-level forecast and not initially developed for localized distribution needs. For example, SDG&E learned through MD/HD TE load forecast that there is a lot of cross-border MD/HD TE charging needs. A system-level forecast does not reveal these highly localized load impacts.

- "Why couldn't SDG&E provide its data through the IEPR process?"

  SDG&E responded that the utility data submission in the current IEPR data collection process is centered around energy sales and system level peak data, although the CEC does collect hourly historical load data at the individual customer level. As noted above, SDG&E is collaborating with the CEC and there could be future changes in the data submission process.

- *Changes to SDG&E Proposal*

  At this time, SDG&E is not changing its Pending Load proposal.

<u>SCE/PG&E Joint Overview and Framework</u>

- *SCE/PG&E Joint Overview*

  On behalf of SCE/PG&E, SCE provided a general overview of pending loads.
  - SCE highlighted how the Track 1 decision discusses pending loads, noting that while Pending Loads are categorically less certain than "Known Loads" but more certain than economic disaggregation of the IEPR forecast, "some types of

pending load may reliably anticipate load growth" and thus be considered reliable, bottoms-up information.

- SCE discussed why pending loads are now necessary: to enable proactive planning. SCE explained that given the acceleration of load growth and the fact that high-load customer projects can be completed quickly, it is necessary to anticipate future load growth to ensure the grid is ready. SCE's proposal supports guardrails and risk mitigation to ensure that pending loads forecasts are reasonable. SCE further noted that scenario planning, when implemented, will enable analysis of various levels of pending loads. SCE discussed the need to allow certain pending loads to exceed IEPR. First, there are reasons why the IEPR forecast used in planning may not reflect all load growth, and while IOUs are always collaborating with CEC to identify opportunities to improve the forecast, this may be a continuing issue for certain types of load. Additionally, it is challenging to reconcile a system forecast with a local forecast, given that local areas may peak at different times than the system. Finally, the uncertainty of charging shapes creates additional challenges in reconciling the IEPR forecast to local, bottoms-up load growth data.
- SCE summarized how implementation of pending loads will interact with other processes, noting its key role in DPP/TPP, Scenario Planning, and future GRC requests.

- *SCE/PG&E Joint Framework*

SCE presented the joint PG&E/SCE framework proposal.

- SCE emphasized the core of the framework is to establish two categories of pending loads. Category A includes high confidence pending loads. These loads are considered "reliable bottoms-up information, i.e. they are as reliable as known loads and treated equivalently to known loads. They are fully included in the base case forecast. Category B includes loads that are medium to medium-high confidence. These loads are less confident than Category A so they may not be included 100% in the base case forecast.
- Category A and Category B include customer-specific projects as well as studies. The former refers to loads that are forecast based on specific customer plans communicated to the utility: there is a known customer that is planning a specific project in a specific location. Studies are based on market and policy trends. There is not yet a specific customer identified to drive the load, but there are various industry and policy indicators to drive the development of the forecast. Both categories of pending loads should be allowed to exceed IEPR, though category B pending loads may be discounted.

SCE Proposal

- *Summary of Proposal*

SCE's approach to building the future state Pending Loads proposal was done by first assessing its current Transportation Electrification Grid Readiness 'TEGR', which historically has been included in the Base Scenario and has been composed of TE-related future loads. Thus SCE will expand the categories of TE-related load and implement bottoms-up policy driven inputs.

For loads that were historically part of TEGR, they will be incorporated into the 2024-2025 Distribution Planning Process (DPP), go through the full engineering analysis and used to drive an investment plan which will be published in the 2025 GNA filing.

SCE has further identified other load types (TE and Non-TE) through close collaboration with the builder's industry, understanding of the development application lifecycle, assessing guardrails that will be needed to ensure risks are being mitigated appropriately in the DPP, and lastly identifying policy driven load studies to proactively plan on identified priority areas.

The new load types are being assessed under an Augmented Pending Loads scenario study, which will not go through the DPP process nor will the results be served to inform nor publish the investment plan for 2025. The objective of this study will be to (1) analyze the impact of each pending load category systemwide and identify areas that will see the most impact , and the volume of needs driven by specific categories, and (2) understand the various data sources, intake forms, and solidify an end-to-end process to incorporate Pending Loads in the DPP.

Following the Joint IOU Framework SCE has identified a number of load types by confidence levels and parameters on type of load, input of data format, and customer types shown on the table below. SCE is currently categorizing each load type using the framework parameters to establish confidence levels for each load type. SCE will expand on those details in the Tier 3 Advice Letter filing in June 2025.

Category	Load Type	Parameters	Confidence Level
Category A	• Truck Stops	• Study / Trend • TE Load	High
	• Early Customer Insights	• Customer Plans • TE Load	
	• Development: TTM Approved Projects	• Customer Plans • Non-TE Load • Residential & Non – Residential	
Category B	• Bus Stops	• Study / Trend • TE Load	Medium / Medium - High
	• Fleets/ Warehouse Electrification	• Study / Trend • TE Load	
	• Transport Refrigeration Unit	• Study / Trend • TE Load	
	• Future Buildout	• Specific Location • Non-TE Load • Residential and Non-Residential	
	• Development: TTM Projects	• Specific Location • Non-TE Load • Residential and Non-Residential	
	• Early Customer Insights	• Specific Location • TE Load and Non -TE Load	
	• Policy Driven Loads	• Study / Trend • Non -TE Load	

- *Discuss 9 Aspects of the Pending Load*

1. *Specific sources of information informing the pending loads category*

   The proposed Load Types are informed by a variety of data sources. SCE categorizes the load types as one of the following, (1) study trends and (2) customer input. The following three parameters must be defined: (1) location, (2) load amount, and (3) energization date. SCE presented the data sources for each proposed load type on the Pending Loads workshop and can be referenced on slides 63-65 of the CPUC's Pending Loads Presentation (attached).

2. *Uses of Pending Loads to inform the forecasts and the investment plans*

Pending Loads introduce a new category of load growth that is not associated with a formal energization request but is otherwise anticipated to materialize. Pending loads contribute to proactive planning and timely customer energization by enabling earlier identification of long lead time capacity projects. Some categories of pending load will inform mid-term forecasting years (years 4-7) while others will inform long term forecasting years (years 8+).

3. *How to coordinate pending loads data with the transportation electrification rulemaking?*

   SCE is currently awaiting for further development of the Transportation Electrification rulemaking to be able to assess the exchange of data between the two proceedings, how does the case study will inform the Pending Loads, and areas of TE loads that will be in common in order to determine the coordination needed with the Pending Loads data.

4. *Types of pending loads that should be allowed to exceed the Integrated Energy Policy Report (IEPR) system-level growth in the near term and justification for such exceedance.*

   For the TE load types, SCE's forecast is based on a bottoms-up approach while the IEPR forecast is based on a top-down approach, this difference in methodology shows the IEPR's forecast to be lower and not representative of SCE's distribution service area; for this reason, SCE's forecast of TE pending loads will replace the IEPR forecast and be treated as incremental load.

   For the Non-TE load types, some categories do not currently exist in the IEPR or do not fully reflect anticipated growth for SCE's system. Thus, SCE's forecast of non-TE pending loads will replace the IEPR forecast and be treated as incremental load

   SCE will continue to compare both forecasts in a yearly basis by matching the pending load type to the corresponding IEPR category to assess whether the IEPR forecast for that load type is representative of the loads within SCE's system. Depending on the results of the assessment, SCE will either treat the loads as embedded or continue to add them as incremental.

5. *Appropriate guardrails for the pending load category.*

   SCE is currently assessing the appropriate guardrails for each load type to ensure risks are being mitigated appropriately in the planning process. SCE sees allocating the appropriate confidence level and associated discount factor as key guardrails. The following criteria will be used to inform the confidence level and discount factor of each load type: likelihood of load materializing, year the need is identified, volume of needs in a specific area or structure.

   The input data or intake form will serve as a main driver to assess the right confidence levels, based on the following criteria:

   - The level of detail and granularity of a study (consultant and IOU) with confidence level of potential locations.
   - The level of detail that a customer will provide, such as location, capacity needs, and need dates.
   - If the need driven by a policy goal.

   SCE will conduct an analysis each year to assess which pending loads become known loads. This information will be used to further refine liguardrails.

Further details on the guardrails and SCE's confidence-level proposal will be provided in the Tier 3 Advice Letter filing which will be made in June 2025.

6. *Strategies to reduce ratepayer risk associated with pending loads.*

   Identifying the right guardrails as described in SCE's response to question 5 will mitigate the cost risks associated with Pending Loads. SCE's goal is to assign the confidence level of each load type by assessing the reliability of these loads vs those that have an energization request to lower risks of overbuilding. SCE will provide further details in the Tier 3 Advice Letter filing in June.

7. *Additional reporting requirements for pending loads evaluation.*

   SCE will continue to report Pending Loads in its GNA filing. SCE will file a Pending Loads Evaluation report as described in the Decision to assess the data on Pending Loads and determine if further refinements to the methodology are needed.

8. *How to ensure pending loads are incremental to known loads and loads accounted for in the spatial load growth forecasts.*

   Please reference SCE's response to question 4. Below is an example of the yearly comparison of load type that SCE will be conducting to determine which forecast to implement for the needed planning year.

SCE's Identified Pending Load	IEPR Category (24-25)	IEPR Category (25-26)	Approach used (SCE or IEPR)
Truck Stops	Truck Stop under Off-road	Truck Stop under Off-road	SCE
Port Electrification	Port CHE & Shore Power under Off-Road	Port CHE & Shore Power under Off-Road	SCE
Early Customer Insight	N/A	N/A	SCE
Transit Bus	Bus under Off-road	Bus under Off-road	SCE
Fleets/ Warehouses	N/A	N/A	SCE
TRU	TRU under Off-road	TRU under Off-road	SCE

As explained in SCE's response to aspect 4 above, SCE first matches the load type to the corresponding category in the IEPR. SCE then compares the two forecasts. If the IEPR forecast is significantly lower than SCE's forecast, it is deemed not representative of SCE's system, thus SCE's forecast will be used instead of the corresponding IEPR load type. The result is that SCE's forecast is incremental to the IEPR.

9. *How best to achieve alignment between the use of pending load data in (a) the Distribution Planning and Execution Process, and (b) other planning processes including, for example, Integrated Resource Planning, the Transmission Planning Process, and General Rate Cases.*

   SCE is currently assessing the impact to existing processes that the implementation of Pending Loads will have. SCE has identified that new and existing methodologies will be impacted as follows:

   - Distribution & Transmission Planning
     - Higher input of loads from various input sources
     - Assigning the proper confidence level and discount factors
     - Higher volume of needs with expanded scope will be anticipated until the system reaches its proactive end state
     - Expanded reporting in the GNA and existing annual public workshops
   - Scenario Planning
     - The confidence level allocated to Pending Loads will determine its inclusion in a specific scenario.

- *Stakeholder Questions & Answers*

- PAO asked if the IOUs could make their data sources for pending loads publicly available for transparency.

  SCE responded that the utilities want to provide as much data as possible, but customer data is protected and is not publicly available. To share the data, the utilities would have to find a way to aggregate that data to make it available.

- PAO stated they think it's a good point that things that are in the DPP will not necessarily get built, given there can be changes. But isn't the idea that the DPP needs to drive what the IOU asks for in their GRC?

  SCE responded that the GRC anticipates changes, and that PG&E will talk more in detail on this topic

- The CPUC asked if the utilities could expand on what they mean by incremental substitute IEPR forecast with SCE forecast? Is this category by category? Or by year?
- SCE responded explaining how in some cases pending loads are able to be backed out of the IEPR and replaced with SCE forecast to avoid double counting. However, in some cases it is trickier. SCE confirmed this is an area they plan to address in their Advice Letter.CPUC followed up asking what constitutes enough data for a customer plan to be high confidence versus medium confidence (Category A vs Category B)? The details needed would be helpful for customers to know when they engage with IOUs or for a survey that collects this information.

SCE responded explaining that a lot of details are still in development. At a high level it's about the level of specificity from the customer, e.g., do they know their load type and the timeline.

- *Changes to Proposal*

  Currently SCE is not proposing changes to its original proposal provided during the Workshop. However, SCE will assess stakeholder comments on this report and evaluate whether modifications to its proposal are merited. The Tier 3 Advice Letter filing in June will describe any modifications.

PG&E Proposal

- *Summary of Proposal*

  PG&E's approach to Pending Loads focuses on formalizing and building on its existing considerations for loads or applications that have uncertainty and risk. PG&E's objective with pending load is to utilize customer and other reliable data to build appropriate customer level forecasts, optimize interconnection of our customer timelines, create proactive plans that do not only rely on customer application, and perform project initiation tasks ahead of time.

  The primary focus of PG&E's Pending Loads Workshop presentation was on the integration and management of pending loads data to enhance distribution planning and forecasting. The goal is to create accurate forecasts that support timely and efficient distribution projects. The general framework that was proposed can be seen below.

Framework Category:	"Reliable Bottom-Up Information" (High Confidence)		"Med-High Confidence Bottom-Up Information"	Top-Down Growth Allocation
Load / Pending Load Category	Known Load (Customer Applications)	Pending Load Category A High Confidence Customer Plans and Bottom-Up Studies/Trends	Pending Load Category B Specific Project Bottom-Up Information and Bottom-up Studies/Trends	Allocation of IEPR Economic Growth: includes traditional and improved methodologies.
Conceptual understanding	• High confidence loads based on actual customers coming forward with formal applications or detailed plans of specific customer projects in specific locations. • Also includes forecasts based on high confidence trends/studies where substantial load growth is expected in a specific area where exact customer is not yet known.		• Similar to category A, but lower confidence due to less precise data or greater uncertainty. • Includes specific customer projects as well as utility analysis-based compliance obligations, local government plans, customer or county plans, etc.	• Traditional allocation based on existing Propensity modeling approach. • Improved: Broader industry/policy trends used to perform more focused allocation (relative to existing propensity modeling) of economic growth allocation.
Data Source	Application For Service.	Customer provided specific plans or utility analysis based on compliance obligations.	Similar to category A plus additional sources relating to state/regional plans, industry trends, etc.	Propensity Modeling; Emerging industries not fully captured in IEPR (with insufficient data to move to Category B)
Base Forecast Inclusion	100%	100%	Different treatment depending on load type. Could be binary selection (0% or 100% depending on attributes) or discount factor (e.g. 25%, 50%, 75%, etc.)	N/A (no additional load beyond remaining IEPR growth)
Allowed to exceed IEPR (total over 13-year period)	Yes	Yes	Yes (potentially subject to discounting per above)	No

In order to implement the above proposal, PG&E discussed the development of a central repository for collecting, validating and assigning loads/categories so that PG&E's existing tools, CYME and LoadSEER, can import and parse them out for engineering analysis and solutioning. The centralized database for Pending Load will maintain the framework of PG&E's proposal and also create transparency, have guardrails, and prevent any double counting.

- *Discuss 9 Aspects of the Pending Load Proposal*

1. *Specific sources of information informing the pending loads category*

The specific sources of information to inform the pending loads category include:

Internal Sources: Information about growth in an area obtained from within PG&E indirectly and separately from customer provided information (e.g. media sources). Based on workshop comments, the best practice would be to verify growth plans with customers prior to using as a pending load.

External Sources: Information directly provided from customers like residential subdivision developers, customers participating in the EV pre-application process, and customers who have requested an interconnection study.

Customer Survey: Information obtained by proactive outreach or customer engagement where energization and load growth plans from customers is captured.

2. **Regulatory Sources**: Information from regulatory bodies which include area specific growth projections like TEPP (Transportation Electrification Proactive Planning). *Uses of Pending Loads to inform the forecasts and the investment plans*

Pending Loads introduce a new category of load growth that is not associated with a formal energization request but is otherwise anticipated to materialize. Pending loads contribute to proactive planning and timely customer energization by enabling earlier identification of long lead time capacity projects. Pending Loads also helps with efficient spending in situations where a larger substation bank and/or larger conductor may be needed in the mid-term (year 4-7) to long-term (years 8+). PG&E first published pending loads in the 2024 GNA report. The workshop proposal expands the use and application of pending loads in a forecast. While the focus of the workshop was treatment of pending loads in the base scenario, pending loads may be treated differently in different scenarios.

3. *How to coordinate pending loads data with the transportation electrification rulemaking?*

PG&E is preparing to integrate the TE rulemaking or other regulatory growth strategies, (i.e. climate change) by having a centralized database to intake this information.

4. *Types of pending loads that should be allowed to exceed the Integrated Energy Policy Report (IEPR) system-level growth in the near term and justification for such exceedance.*

PG&E and SCE introduced a framework as mentioned above that introduces Category A and Category B Pending Load. PG&E proposes the higher confidence Category A and some B pending load should be able to exceed the IEPR. Lower confidence Category B loads would be scaled based on the available IEPR annual growth by category during the disaggregation process.

How do today's PG&E pending load data fit into pending loads categories			
	Typical Start Year	Disaggregation Level	What's in the category?
Known Loads	Year 1-5	Address Specific	Applications for service preconstruction and post construction while ramping up (Ind, Ag, Res, Com, EV, Battery)
Category A	Year 1-5	Address Specific	EV preapplications, Large Load Interconnection Requests, Projects in grading stage
Category B	Year 3-10	Circuit Level or Bank Level	Projects prior to grading, Speculative warehousing, Customer specific EV charging load plans, Customer specific traditional load plans, Data center planning, Study based HD highway EV charging, Study based MD depot EV charging, City annexation plans, Zoning changes

At the workshop, PG&E proposed three categories of B loads. To simplify and streamline the reconciliation with IEPR process, PG&E is proposing to change the proposal and eliminate category B2 (fixed) in the base scenario. This would make all pending loads that don't fall into category A and B1, scaled and capped by IEPR growth estimates. Category A is not subjected to an IEPR cap because it is treated like a known load which can exceed the IEPR annually. Category B1 (incremental) is not considered to be included in the IEPR at all and would not be constrained. Using an alternate scenario to reflect the full potential of category B3 (scaled) loads and moving high confidence pending loads to category A is the recommended alternative.

5. *Appropriate guardrails for the pending load category.*

PG&E's proposed framework and the centralized database will have appropriate guardrails for each Pending Load to ensure risks are being mitigated appropriately in the planning process. Similar to SCE, PG&E will be allocating the appropriate confidence level and associated discount factor as key guardrails. The following criteria will be used to inform the confidence level and discount factor of each load type: likelihood of load materializing, year the need is identified, volume of needs in a specific area or structure, application or customer provided plans, and others.

The input data or intake form will serve as a main driver to assess the right confidence levels, based on the following criteria:

- The level of detail and granularity of a study (consultant and IOU) with confidence level of potential locations.
- The level of detail that a customer will provide, such as location, capacity needs, and need dates.

- If the need driven by a policy goal.

PG&E will also conduct an analysis each year to assess which pending loads become known loads. This information will be used to further refine the categorization of each pending load.

6. *Strategies to reduce ratepayer risk associated with pending loads.*

The proposed framework and categorization will have appropriate guardrails to ensure the higher confidence Pending Loads are no-regret dollars being spent. PG&E believes the introduction of Pending Load helps mid-term to long-term spending by allowing PG&E to spend ratepayers' dollars more efficiently in situations where a larger substation bank and/or larger conductor may be needed; this prevents situations where PG&E would rebuild a Substation or Distribution system in 4+ years due to a Pending Load fully materializing.

7. *Additional reporting requirements for pending loads evaluation.*

PG&E will build upon the existing reporting of Pending Loads that was provided in 2024 GNA filing to support evaluation of pending loads 2 years from now.

8. *How to ensure pending loads are incremental to known loads and loads accounted for in the spatial load growth forecasts.*

Please reference PG&E's response to question 4 and PG&E/SCE's framework for Pending Load.

9. *How best to achieve alignment between the use of pending load data in (a) the Distribution Planning and Execution Process, and (b) other planning processes including, for example, Integrated Resource Planning, the Transmission Planning Process, and General Rate Cases.*

PG&E proposed framework allows for PG&E to act, initiate projects, and/or order long-lead time material. This helps PG&E achieve alignment in the execution process by securing resource and material to meet the customer timelines. To achieve alignment within the other planning processes, the Transmission Planning team will also need to understand the capacity needs based on known and pending loads to inform their justification.

- *Stakeholder Questions & Answers*

  - CPUC asked how the IOUs assess overlap in the input categories? (i.e., double counting)

    SDG&E responded that they conduct a series of checks to ferret out the growth and justify projects.

- Stakeholders asked how (if at all) do your pending load proposals account for the likelihood of load requests to materialize only if grid capacity is available? For example, many fleets and other charging infrastructure developers are prioritizing electrification in areas where they can get energized relatively quickly, so efforts to make the needed capacity available ahead of time can be self-fulfilling forecasts by spurring more load requests.

  SCE responded that in the short term it makes sense for developers to seek areas that have capacity. In the future we want the normal situation to be that the developers find property locations based on business considerations and the utility has the distribution capacity already there. So, we are anticipating how many developers need distribution capacity at locations based on specific load types so that the distribution capacity is there when the load comes.

  PG&E further clarified that they want everyone to put in their electrification plans so that at a system level we can go further out than 5-10 years – pending loads helps expose local area issues so we can shorten lead times in the future.

- Stakeholders requested that as the utilities develop stakeholder processes, please think about timing and filing.

- TURN asked if the IOUs could share more details and their experiences with each of the proposed data source types, perhaps in the advice letters? It seems fundamental to understand the relative reliability and transparency of these sources (e.g. the historic likelihood of projects materializing based on CEQA applications) to inform the confidence assigned to different pending loads, and their influence in the planning process

  SCE responded that the short answer is "yes." We plan to go into detail, data source by data source, with the associated levels of confidence. Even known loads are not 100% confident. When we say high confidence, we mean at this point it's about as likely to go forward as a known load, and we will explain our conclusions and logic in the Advice Letter

  SDG&E added that one goal of the Advice Letter is to also show our overall framework for Pending Loads, not just specific loads that we will vet for an individual study.

IV. Recap of Other Parties' Presentations

<u>California Energy Commission (CEC)</u>

- *Summary*

  CEC presented on the California Energy Demand Forecasting (CEDF), commonly referred to as the Integrated Energy Policy Report (IEPR) forecasts. The presentation included the overall context of the IEPR forecast and details on load modifiers, including Transportation Electrification (TE) baseline and managed forecasts, Additional Achievable Fuel Substitution (AAFS), Additional Achievable Energy Efficiency (AAEE) managed forecasts, data center managed forecasts, and hydrogen.

  CEDF is an 8760-hourly forecast for broad economic sectors. The forecast evaluates multiple fuels with a 15-year outlook. The forecast undergoes vetting and engagement by the public, partner agencies, and stakeholders through the IEPR public process, Demand Analysis Workshop Group (DAWG), and the Joint Agency Steering Committee. The CEDF is used in multiple planning efforts, with the load reliability scenario applied in the Distribution Planning Process (DPP). The 2025 IEPR forecast timeline runs from February 26, 2025, through January 2026. CEC requests that information on large loads to be submitted by August 2025 in order to be considered in the 2025 IEPR.

  The CEC presentation provided detail for several load modifying components. For TE, it covered baseline forecasts, AATE scenarios, hourly TE load profiles, and opportunities with EV profiles, including separating EV charging from household meters. For AAEE and AAFS, CEC explained that both are incremental to baseline forecasts and reflect increasing impacts across scenarios ranging from 1-6.

  The presentation shared current assessment of data center load based on data from five utilities, evaluating a high case for local reliability scenarios. Finally, it discussed hydrogen demand for transportation, noting that the CEDF does not currently model electricity demand for hydrogen production due to uncertainties in demand, production pathways, and grid impacts. CEC staff continues to monitor developments in hydrogen fuel production and use cases.

- *Stakeholder Questions & Answers*
  - AAT3 factors in some regulatory policies, how do the current regulatory changes get considered?

    Response: The 2024 IEPR was published prior to the waiver withdrawal; CEC is looking for a way to evaluate the regulatory impacts and incorporate that in the next IEPR.

  - What are some technology assumptions for the models for the MD/HD load profiles and what goes in for those load profiles?

    Response: CEC works with Lawrence Berkely National Laboratory to design models for electric trucks. This is an aggregate model that forecasts EV loads at the system

level. The CEC speaker acknowledged that there are some changes to the model will be needed depending on exactly how charging unfolds. The speaker explained that the model uses a top-down approach, and does not build-in location-specific charging behaviors.

- What is assumed for price and elasticity models for MD/HD EV customers?

  Response: The CEC uses a weaker elasticity model in the light duty model and noticed that demand gets pushed down by half when TOU rates are high. In the MD/HD space, there is less usage overall, so impacts are not as major. Truck operators are generally motivated to either be creative with timing of charging or eating the additional costs when electricity prices are high.

- Do you consider CEC forecasts robust, transparent and thoroughly vetted by the stakeholders?

  Response: There is a planning library for files related to the CEC forecasts. The CEC presenter explained that the models are very complicated. Output files typically are more feasible to be posted, as opposed to the massive input files. The CEC will be exploring ideas to make files easier to digest for the public.

<u>California Public Advocates Office</u>

- *Summary*

  California Public Advocates Office (PAO) presented their cautionary perspective regarding incorporating pending loads as a new category into the IEPR planning process. The presentation provided an overview of their concerns with using utility data projections that are not based on specific customer load to replace IEPR forecasts, and the potential impact this could have on customer affordability.

  PAO began their presentation explaining that pending loads are a method of proactive planning and while they support planning for sufficient capacity to energize future new loads, it is critical that such planning only use reliable data to avoid overbuilding and thereby negatively impacting customer affordability.

  PAO emphasized the importance of relying on the IEPR as the basis for load growth forecasts given that it has a transparent planning process subject to stakeholder review and is vetted by other agencies. In contrast, utility data is not as transparent and guardrails are needed to ensure certainty of utility forecasts. PAO does not support using utility forecast data to supplement IEPR forecasts if the data is not based on specific customer load.

PAO stated that contrary to the utilities' perspectives, the IEPR has not consistently under-forecast actual load but, rather, several iterations of the IEPR forecasts have consistently over-forecast actual coincident peak load, using PG&E's forecasts as an example. However, PAO acknowledged that because they compared IEPR's weather-normalized forecast of peak load to actual peak load, differences between the weather condition assumed in the IEPR forecast and actual weather conditions has an unknown effect on the comparison.

The presentation concluded with PAO cautioning against the use of unreliable data sources for pending loads and, rather, ensuring that reliable pending loads are based on customer engagement and use of the pre-application process. Further, PAO supports a 2-year evaluation period for pending loads to assess the number of loads that proceed to energization before implementing pending loads

- *Stakeholder Questions & Answers*

  - SDG&E commented that IEPR is a system level forecast, whereas the utilities need to work from circuit-level forecasts. The CPUC Staff Proposal attempted to look at the circuit-level forecasts and showed that for all 3 IOUs, IEPR under-forecast load growth.

    PAO response: PAO responded stating that it should be known how certain the pending load is to end up in an energization application before it is planned for, and therefore the evaluation process should come before implementing a pending loads framework.

  - Stakeholders commented on the IEPR versus PG&E forecast comparison chart, stating there are a lot of loads that won't show up in this graph because they're stuck in the energization queue, and this is in part because the IEPR was never designed to forecast local loads on specific circuits. While they are supportive of guardrails, they encourage more discussion on how to address this fundamental challenge.

    PAO response: PAO responded that there's an opportunity for utilities to take deposits as confirmation for long lead time projects to increase that confidence.

<u>Hoopa Valley Tribe</u>

In the heart of Northernmost Northeast Humboldt County lies the Hoopa Valley Indian reservation. This land, rich in history and culture, is home to the Hoopa Valley tribe, a sovereign tribal government dedicated to preserving its heritage while embracing modern advancements.

Linnea Jackson, the general manager of the Hoopa Valley Tribes public utilities, share plans needed to transform their reservation including domestic water, solid waste management,

broadband, and energy initiatives. Linnea spoke about the tribe's efforts to build critical infrastructure in a tier 2/3 fire threat district. The water tank project, funded by the Indian Health Service and USEPA, took years of hard work and dedication. They navigated the complexities of obtaining grant funding, environmental permits, and cultural resource impact studies. The delays in energization almost cost them their state match from DWR. Linnea emphasized the importance of a consultation process to ensure tribal governments could effectively plan and execute their projects.

The tribe's vision extended beyond water storage tanks. They were facilitating a fiber-to-the-home project, building data centers, and communication towers. These initiatives were crucial for their network development and the housing of critical utility staff. Linnea highlighted the need for grid upgrades to bring these projects online.

Linnea cites that the Hoopa 1101 circuit, the main circuit serving the reservation, is within the top 1% of the worst-performing circuits due to outages and outage minutes. The tribe faces challenges with building critical facilities without grid capacity.

Linnea called for a strong and constant partnership between tribes, IOUs, state, and federal entities to modernize grid infrastructure, streamline permitting processes, and support tribal sovereignty and cultural resource needs.

Linnea looked forward to the pending loads, distribution planning, and community engagement that would improve the reservation for the betterment of all. The Hoopa Valley tribe's journey was a testament to their resilience, creativity, and unwavering commitment to progress.

Morongo Band of Mission Indians

- *Summary*

The Morongo Band of Mission Indians' (Morongo) presentation focused on past difficulties with planning for tribal utility projects with emphasis on the long lead times for interconnection and energization and lack of transparency with broader electric utility distribution planning. Morongo began their presentation with a summary of their geographic scope and early electric grid planning within the reservation, highlighting their struggles with energy reliability due to project-by-project development.

They explained that because reservation land is rural tribes are often left out of the utility planning process unless they have multiple projects or expansion plans along with load data, and even then, projects will face long lead times due to the lengthy review and approval process. While SCE has conducted some circuit upgrades to help with housing and commercial needs, the lack of electrical capacity inhibits future development. To help enhance its energy resilience and support long-term economic growth and stability, Morongo has established a Tribal Utility Authority that will create a Special Utility District.

- The IOUs commented that they appreciated the feedback and acknowledged that thepast engagement process did not work for the Morongo band; however, the IOUs are actively trying to improve their processes. It's true historically that even if there was greater tribal engagement, the tribes planned load additions wouldn't get included in utility distribution plans without an actual application to add load. However, pending loads will enable such planned load additions to be included in distribution planning as a high confidence load.

Terawatt Infrastructure

- *Summary*

Terawatt Infrastructure's presentation provided an overview of their current charging infrastructure loads and locations and called for the utilities to conduct greater direct customer engagement in their transportation electrification planning process. Terawatt Infrastructure is a full-stack EV fleet charging developer for heavy-duty truck fleets where they build high capacity charging depots on Terawatt-owned real estate (i.e., "electric gas stations"). Terawatt explained the difficulty with securing both short-term and long-term power for their project sites as the current distribution infrastructure is not sufficient for their near-term demand, and because planning for such demand is currently constrained by the IEPR forecasts.

Terawatt presented an outline of their current process for engaging with utilities in distribution project planning, asserting that the long lead times created by this process prevent timely planning for near-term EV load – there is an active and urgent need to consider transportation electrification pending loads in near- and long-term planning forecasts. To increase certainty, Terawatt urged the utilities to conduct direct customer engagement through surveys to better understand the industry and use cases. They also highlighted the usefulness of preliminary studies to demonstrate high confidence of pending loads.

- The IOUs commented that Terawatt's presentation illustrated a lot of the struggles the utilities are facing with planning for EV load, emphasizing the need for both early studies as well as customer insights. This is critical for projects that will have long lead times. The studies provide an area-level look for growth over 10 or more years, and estimate load needed to meet need. Then customer insights help to support more refined load estimates. But this underlies why studies are important to help reduce lead times in the future. We have lots of data now, we have concrete customer plans now, and it is impractical to wait two years to evaluate.

V. Next Steps

The Joint IOUs note that D.24-10-030 directs the Joint IOUs to collect informal comments on this Pending Loads Implementation Workshop Report and to address those comments in the Joint IOUs' Tier 3 Advice Letter. Accordingly, to the extent a party feels that its comments at the workshop were not adequately documented in this Pending Loads Implementation Workshop Report, the party should provide the Joint IOUs with clarification or additional commentary. This clarification or additional commentary should be provided as soon as possible after the

April 1, 2025 filing of this Pending Loads Implementation Workshop Report in order that the Joint IOU's June 30, 2025 Tier 3 Advice Letter can address those clarifications or commentary.

This Pending Loads Implementation Workshop Report is submitted in compliance with Ordering Paragraph 11 of D.24-10-030.

Attachment B

Pending Loads Development Workshop
PowerPoint Slides

Pending Loads Development Workshop

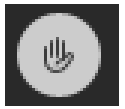
March 14, 2025

High DER Proceeding

D.24-10-030 Implementation

California Public Utilities Commission

Logistics

- This workshop will be recorded
- All attendees have been muted.
- To ask questions, please ‘raise your hand’  and a host will unmute you so you can ask your question.
- If you would rather type, use the “Chat” function. Questions will be read aloud by staff or responded to in the chat; attendees may be unmuted to respond to the answer verbally.

  *Reminder: Please press mute when done speaking 

Chat Q&A Participant List Raise Hand Settings Turn Camera on / off Mute / Unmute

Agenda - Morning

Time	Agenda Item	Details
9:00 - 9:30 AM	**Welcome and Opening Remarks** •Opening remarks by Commissioner Houck •Energy Division Background and Workshop Framing **Objectives**: Determine coordination of pending loads with TE and other planning processes.	•Workshop logistics •Commissioner Darcie Houck to set the stage for the workshop and emphasize its purpose. •Energy Division opens with context and frames the workshop objectives.
9:30 – 10:00 AM	**CEC Presentation – IEPR contents and application to distribution planning** •California Energy Commission presents an overview of the IEPR contents and the details of load modifiers for sectors of rapid load growth. **Objectives:** Clarify what is included in the IEPR to ensure pending loads are defined in relation loads accounted for in the IEPR forecast. Alignment of the use of pending loads with other planning processes.	Provide background on what is currently included in the IEPR, particularly relevant load modifier forecasts (TE), and all of their components. Discuss how Pending Loads could interact with the IEPR's forecasted loads.
10:00 – 10:10	**Break**	Be back in 10 minutes!
10:10 AM – 12:10 PM	**IOU Presentations: Pending Loads early implementation, proposals, implementation processes, and risks, safeguards, and reporting requirements** •Presentation by IOUs •PG&E •SDG&E •SCE **Objectives**: Propose data sources to inform pending loads, uses of pending loads in DPEP, the allowance of types of loads to exceed the IEPR, guardrails and risk reduction strategies, and annual reporting requirements.	Covering: •IOU experience with Pending Loads so far. •Compare and contrast DPP before and after Pending Loads implementation & provide illustrative examples. •Proposal of sources and load types that should be able to exceed the IEPR. •Present risks and propose safeguards, and reporting requirements.
12:10 – 12:40 PM	**Open Discussion**	Reactions to the IOU proposals
12:40 - 1:40 PM	Lunch	Be back in 60 minutes!

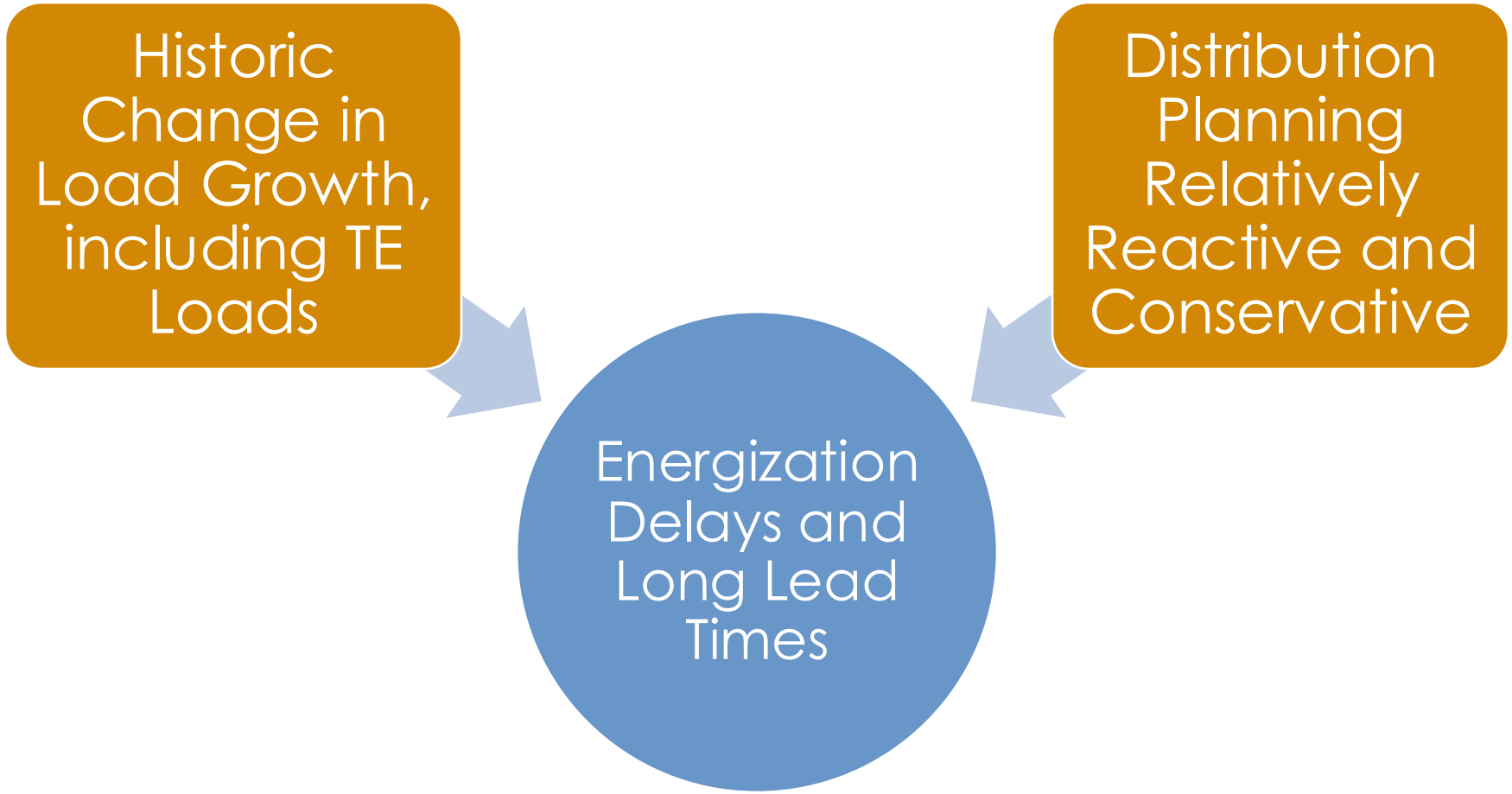
Opening Remarks

Commissioner Darcie Houck

Background and Framing

Energy Division

Historical Context



New Load Growth Can Be Fast

Traditionally, large load growth was associated with big construction projects that took significant time to build.

Now, large loads like EV DC fast chargers can be installed in weeks.

Pending Loads – build out the mid-term

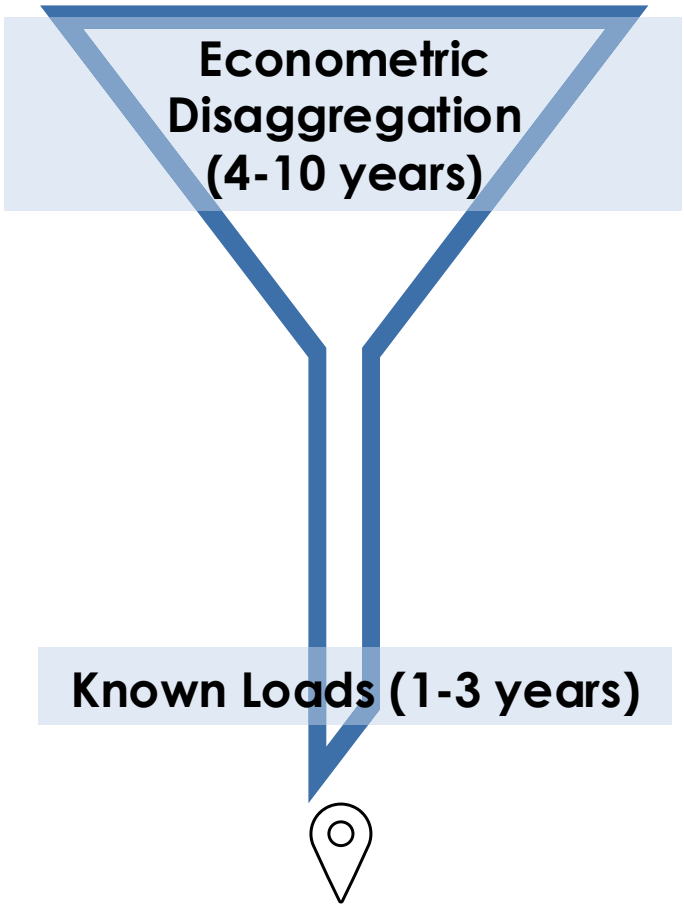
Used to pin down the location of top-down disaggregation using bottom-up data.

Long-Term (6-10 years)
- Uncertain quantity
- Uncertain location

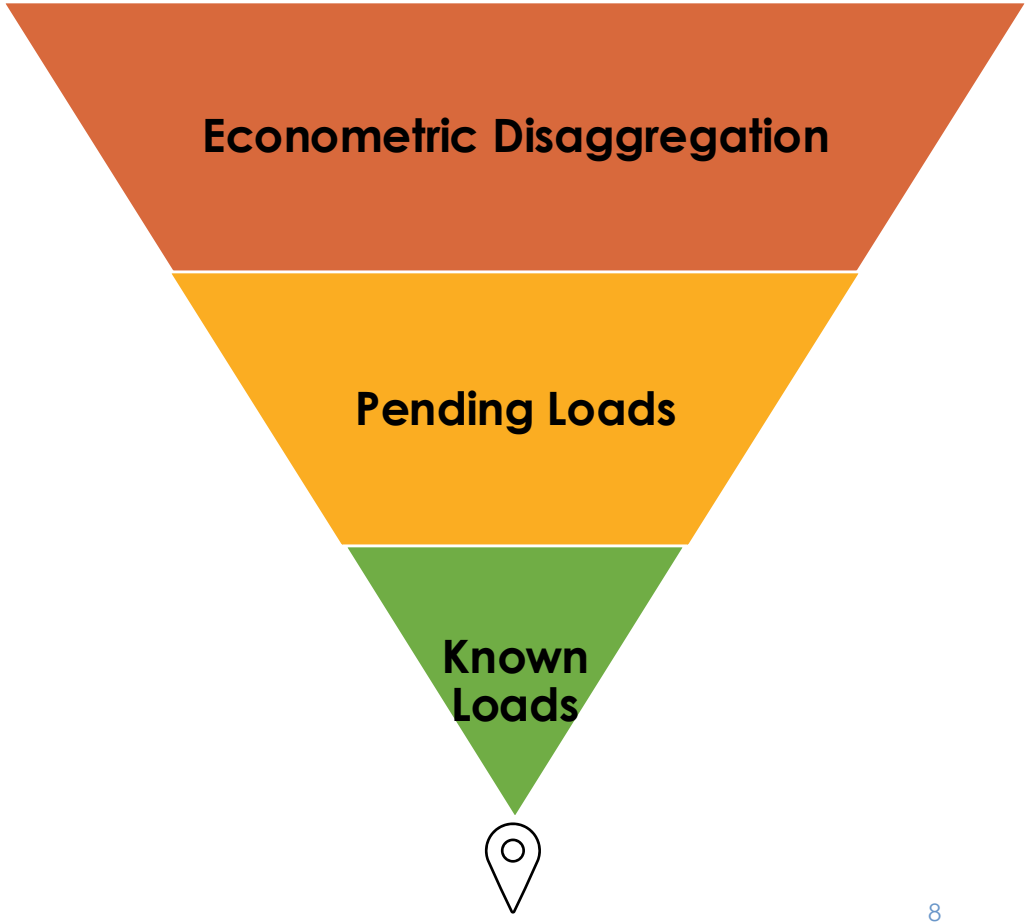
Mid-Term (3-6 years)
- General quantity
- General location

Near-Term (1-3 years)
- Certain quantity
- Certain location

Without Pending Loads (currently)



With Pending Loads



Staff Proposal
Utilities to Create a 'Pending Loads' Category in DPP

Key Goal: Improve Mid-Term (2-4 Years) Load Disaggregation.

- To reliably upgrade circuits in advance of needs

Key Goal: Bringing TE loads into distribution planning early and more accurately.

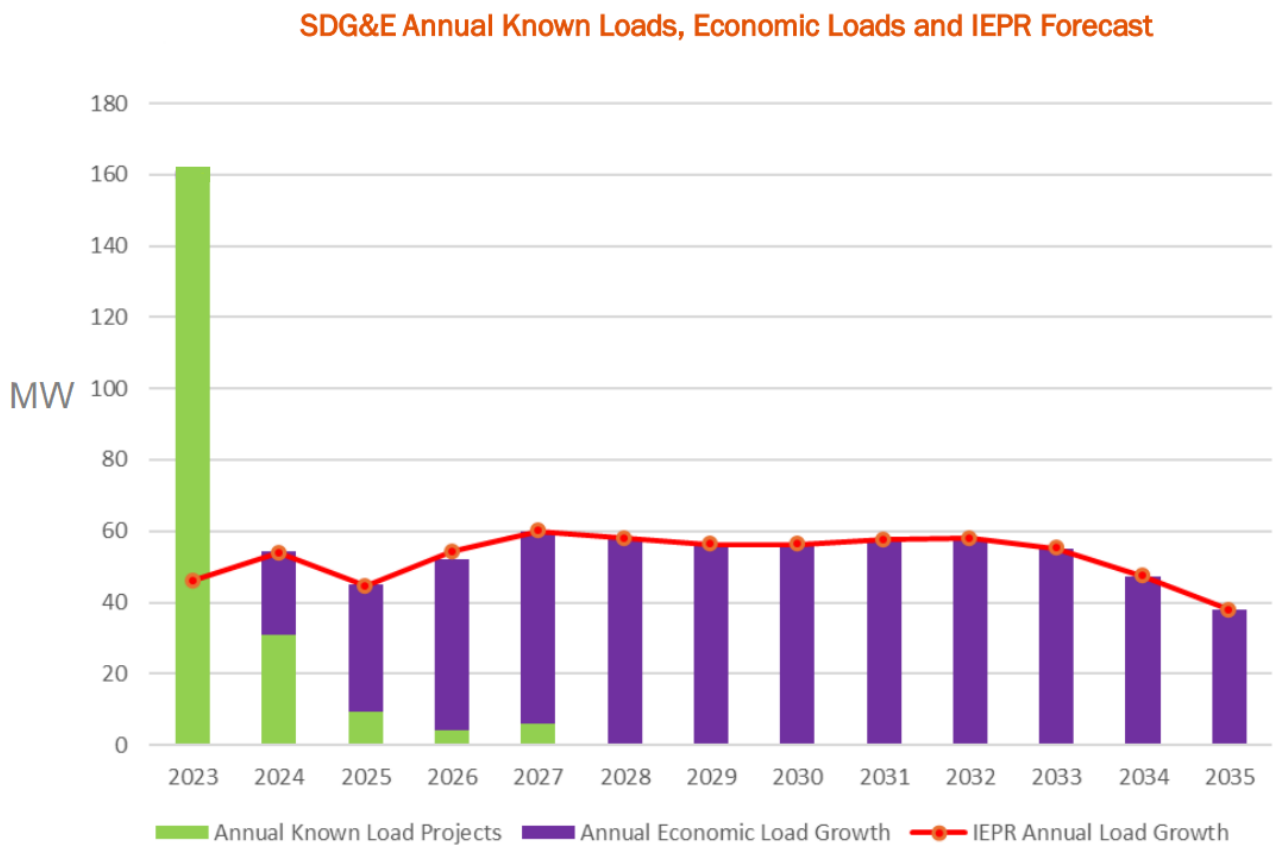
- Create a reliable projection of TE loads before receiving requests for energization and leverage this to create load projections.

<u>Should Pending Loads exceed IEPR load growth?</u>

Stakeholders were split

- **If allowed:** parties were concerned about significantly increasing the forecast load growth and therefore ratepayer costs.
- **If disallowed:** parties stated that the Pending Loads category would be significantly less useful for distribution planning and energization delays could persist.

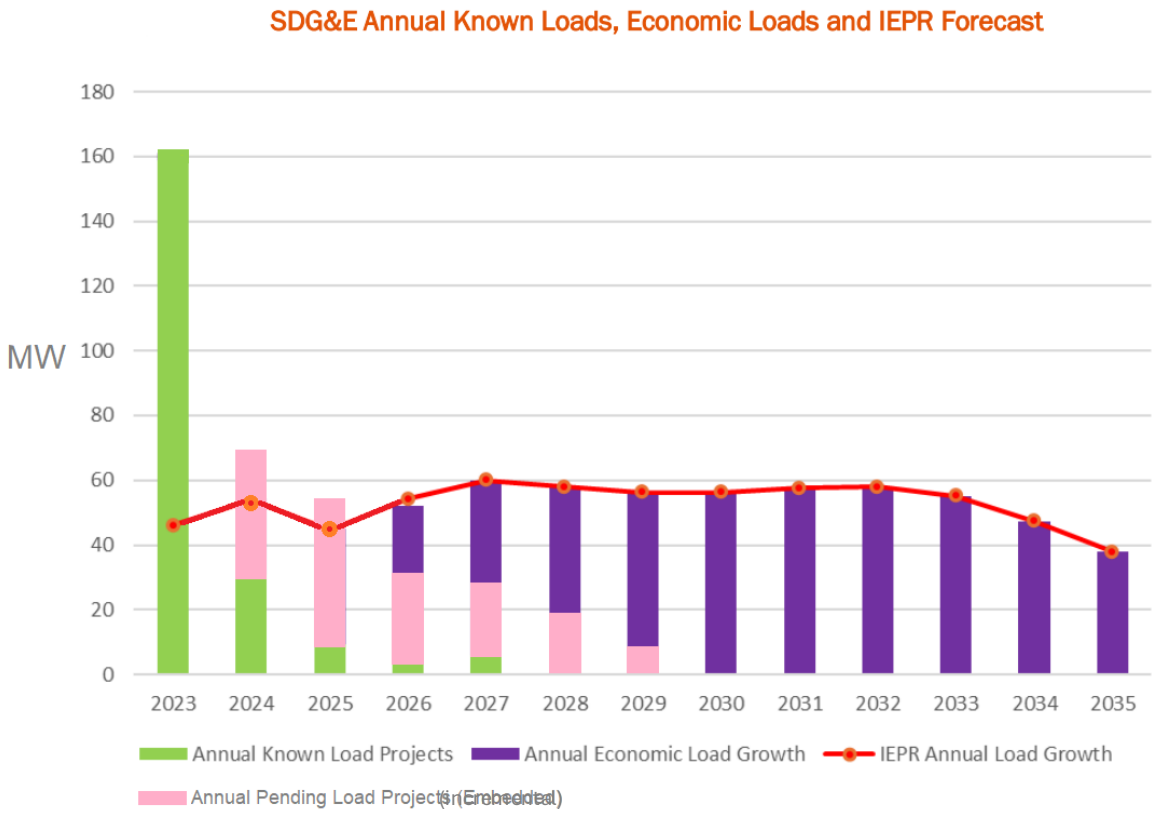
What does exceeding the IEPR mean?

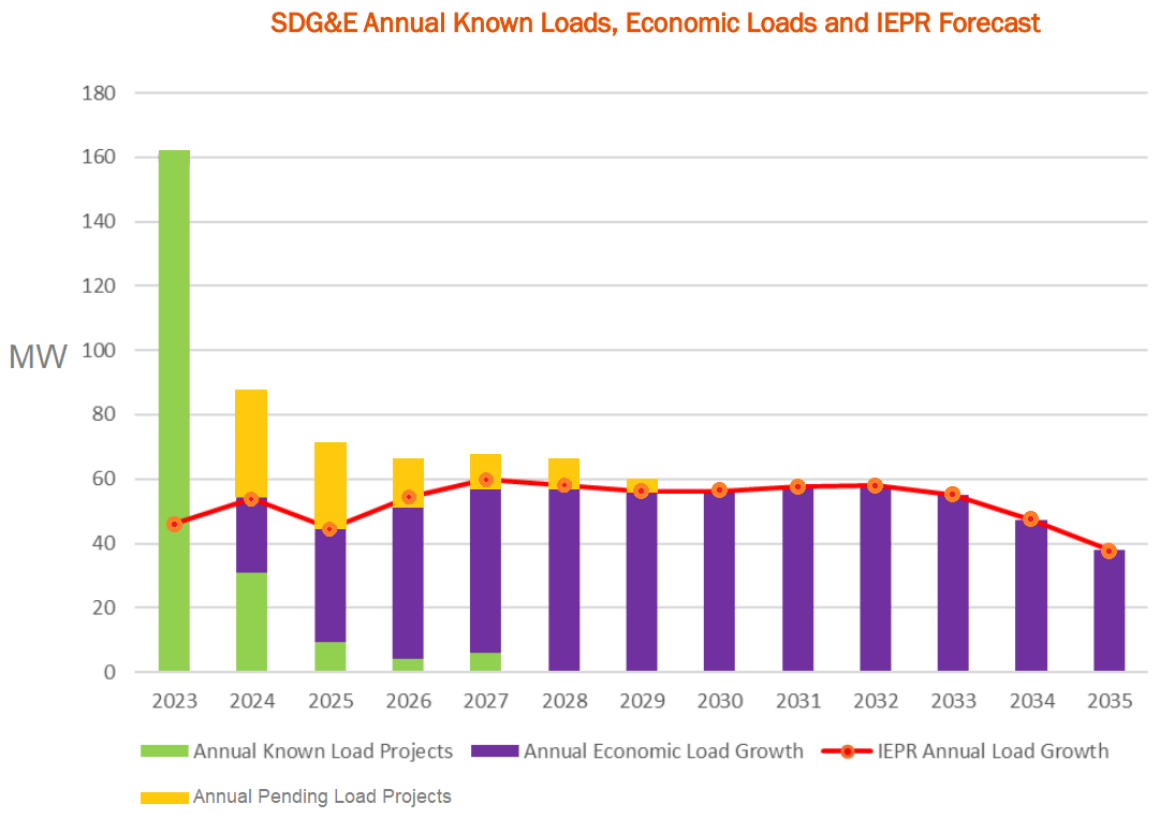


SDG&E forecast from 2024 IPE Post-DPAG Report

Known Loads exceed the IEPR because utilities have an obligation to serve them.

Pending Loads as Embedded or Incremental





SDG&E forecast from 2024 IPE Post-DPAG Report with illustrative incremental Pending Loads added in

Pending loads aim to make it easier to serve loads proactively.

Workshop Objectives

Based on staff interpretation of OP 11

- Identify the specific sources of information, at minimum, to inform the pending loads category.
- Propose how pending loads are used in the distribution planning and execution process.
- Clarify what is currently included in the IEPR to ensure pending loads defined relative to the forecast to avoid double counting.
- Propose types of pending loads that should be allowed to exceed the integrated energy policy report (IEPR) forecast and justification.
- Identify points of coordination between the pending loads data and the transportation electrification rulemaking.

Workshop Objectives Continued

- Propose appropriate guardrails for the pending load category.
- Identify strategies to reduce any ratepayer risk association with pending loads.
- Propose additional reporting requirements to be implemented for pending loads evaluation.
- Identify the alignment of pending load data in the distribution planning and execution process and other planning processes including, for example, integrated resource planning, the transmission planning process, and general rate cases.

Example Framework for Pending Loads

Early Insights

- Individual customer plans through proactive engagement
- Business development plans
- Local jurisdiction development areas

Regulatory Obligations

- Likely load growth areas based on regulations
  - AQMD mandates
- Port electrification
  - Plans from port authorities
- Transit electrification
  - Agency plans

Level of certainty

- Score per data category
  - Based on historical data, reliability of data source, sector, etc.
- Score per project
  - Based on project progress, location, association with other load growth, etc.

Process Points to Insert Safeguards

Up Front

- Only let specific types of data into the pending load category to begin with.
- Be very particular with what is allowed.
- Ex: only use information from projects with funding committed.

In Stream

- Define a level of certainty applied to load types and/or data sources
- Set a certainty threshold that a project needs to meet
- OR use the certainty score as a discount factor to reduce the load magnitude

Scenario-Based

- Use all pending load data in grid needs assessment
- Create a pending loads scenario within the scenario planning framework
- Determine how pending loads influence investment plans through scenario planning

Equity Considerations

Opportunities:

- Pending Loads can address equity concerns by incorporating loads by Disadvantaged Communities (DACs) without need for formal service request.

Risks:

- Pending Loads have the ability to bias capacity allocation toward areas where customers have a greater ability to engage informally with utilities.

Process Coordination

GRC

- How will pending loads receive funding in the GRC?
  - Between this resolution and the next GRC?

IRP

- How do pending loads interact with integrated resource planning?
- Known loads do not factor in to IRP, should pending loads?

TPP

- How do pending loads interact with transmission system planning?

Coordination with Transportation Electrification

Energy Division

Status of TE Regulations in California

Recent regulatory shifts, increase uncertainty of medium- and heavy-duty (**MDHD) zero emission vehicle (ZEV) adoption**, but **localized adoption is still anticipated** in the short to medium-term:

Regulation	Status
CARB Regulations	• Advanced Clean Fleets (ACF) request for waiver withdrawn; CARB will not enforce the Priority Fleets and Drayage components, but State and Local Fleets component still in effect • Commercial Harbor Craft and In-Use Locomotive regulation request for waivers withdrawn • Supply-side regulations, Advanced Clean Cars II (ACCII) and Advanced Clean Trucks (ACT) received EPA waivers, but EPA plans to transmit waivers to Congress for approval • Innovative Clean Transit (ICT) regulation still in effect
Air Quality Management District (AQMD) regulations	• South Coast Air Quality Management District (SCAQMD) WAIRE rule (2305): indirect source rule that regulates warehouse facilities to reduce emissions from the goods movement industry and is expected to drive vehicle electrification efforts.
Port Electrification targets	• Port of Long Beach: goal to transition to ZE terminal equipment by 2030 and on-road trucks by 2035. • Port of Hueneme: goal for ZE operations by 2030. • Port of Oakland: goal for ZE cargo handling equipment by 2030. • Port of San Diego: goal for ZE operations by 2030.
Voluntary Original Equipment Manufacturers (OEM) ZEV commitments	• Several OEMs, including Volvo, BMW, Ford, Honda, Volkswagen, and Stellantis have agreed to the Framework Agreement on Clean Cars, voluntary commitments that support continued annual reductions of vehicle greenhouse gas emissions through the 2026 model year

AB 2127 Electric Vehicle Charging Infrastructure Assessment

- CEC conducts the AB 2127 report analysis on a bi-annual basis to estimate the number of chargers needed to meet state zero-emission vehicle targets.
- The most recent AB 2127 report, published in 2024, provides estimates for the overall number of chargers needed in 2025, 2030 and 2035, at the statewide, county, and traffic analysis zone (TAZ) level.
  - The EVI-PRO 3, EVI-Road Trip, and WIRED models are used to estimate chargers needed to serve the light-duty (LD) sector, while the HEVI-LOAD model is used to estimated chargers needed to serve the MDHD sector.
- The report does not show the capacity or load needed to serve the estimated number of chargers.
- Given the level of geographic disaggregation and lack of load/capacity information available in the AB 2127 report, it is unlikely that this can be used to inform the category of pending loads.

TE Coordination

- More localized adoption patterns strengthen the importance of the pending loads category, as some locations (such as those near ports, near warehouses, etc.) can anticipate seeing requests that exceed the IEPR loads, even if overall adoption is negatively impacted by the regulatory environment.

Energy Demand Forecast

California Energy Commission

CEC Energy Demand Forecasting

CPUC Pending Loads Implementation Workshop

Quentin Gee, Ph.D.

Friday, March 14, 2025

Acronyms, Initialisms, and Abbreviations

AAEE – Additional Achievable Energy Efficiency

AAFS - Additional Achievable Fuel Substitution

AATE – Additional Achievable Transportation Electrification

ACC2 – Advanced Clean Cars II Regulation

ACF – Advanced Clean Fleets Regulation

AMI – Advanced Metering Infrastructure

CEC – California Energy Commission

CEDF – California Energy Demand Forecast

CPUC – California Public Utilities Commission

DPP – Distribution Planning Process

EE – Energy Efficiency

Econ/Demo – Economic and Demographic Data

EV – Electric Vehicle

FCEV – Fuel Cell Electric Vehicle

FS – Fuel Substitution

GW – Gigawatt

IEPR – Integrated Energy Policy Report

IOU – Investor-owned utility

IRP – Integrated Resource Planning

LD – Light-Duty

MDHD – Medium- and Heavy-Duty

PG&E – Pacific Gas and Electric Company

SCE – Southern California Edison

SVP – Silicon Valley Power

TE – Transportation Electrification

TWh – Terawatt-hours

ZE – Zero-Emission

Presentation Outline

- The IEPR forecast
- Load modifiers
  - TE baseline and managed forecast
    - TE load profiles
  - AAFS/AAEE managed forecasts
  - Data center managed forecast
- Hydrogen

The California Energy Demand Forecast

Broad Economic Sectors Evaluated

Agriculture

Residential

Commercial

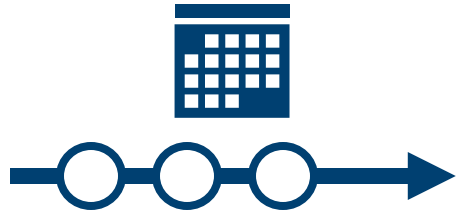
TCU

Transportation

Industrial (+Petroleum)

Multiple Fuels Evaluated

(hourly)

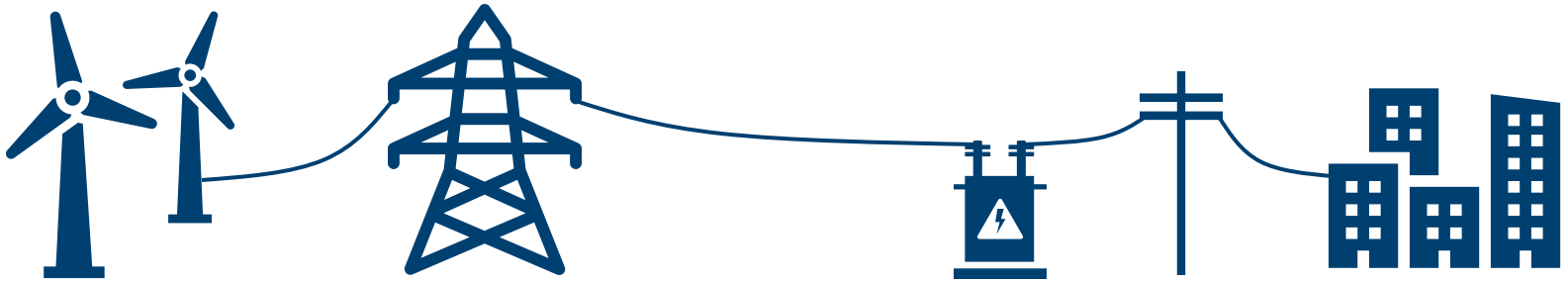


15 Year Outlook

Vetting and Engagement by Public, Partner Agencies, and Stakeholders

- IEPR Public Process
- Demand Analysis Working Group
- Joint Agency Steering Committee

The CEDF is Used in Multiple Planning Efforts



IRP **TPP** **DPP**

Planning Forecast
System-level planning

Local Reliability Scenario
More load to account for geographical uncertainty with distribution planning

2025 IEPR Forecast Timeline

Date	Event
February 26, 2025	IEPR Workshop on California's Economic (i.e., Econ/Demo) Outlook
August 6, 2025	IEPR Workshop on Inputs & Assumptions
August 26, 2025	IEPR Workshop on Load Modifier Assumptions
November 13, 2025	IEPR workshop on Load Modifier Draft Results
December 11, 2025	IEPR workshop on Overall Forecast Draft Results
January 2026	Propose Adoption of Forecast at CEC Business Meeting

Please submit information on large loads to CEC **by the end of August** for incorporation into the forecast. This ensures these loads will be considered in all planning processes.

Also see the CEC's Demand Analysis Working Group site for their meetings and materials

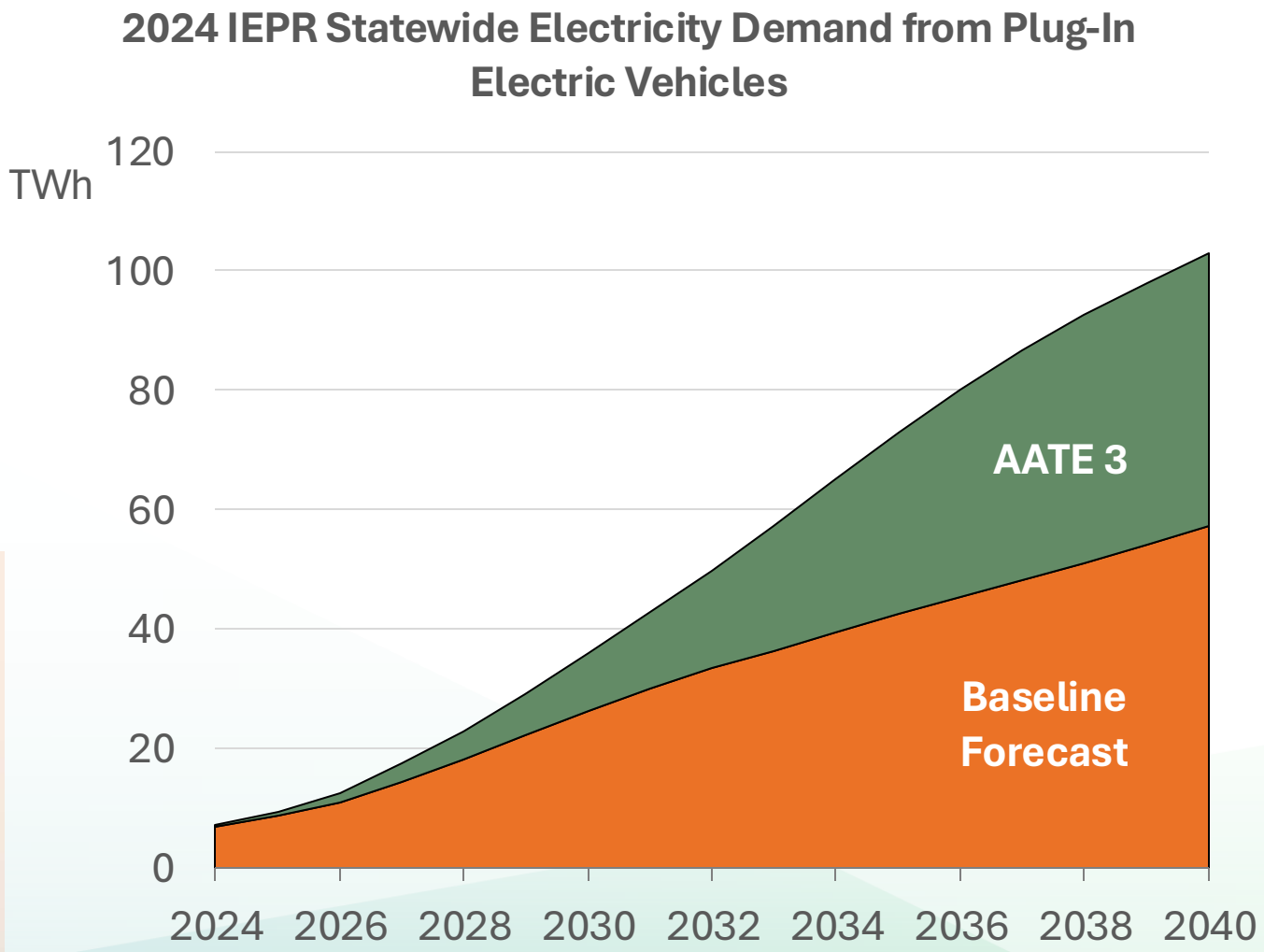
Annual TE Load Modifier Forecast

Baseline Forecast

- Combines Vehicle Stock and Travel Demand Models
- Econometric Vehicle Stock Models
- Economic, Demographic, and Vehicle Data Forecasts as Inputs
- LD & Transit Travel Models, Freight Demand Models

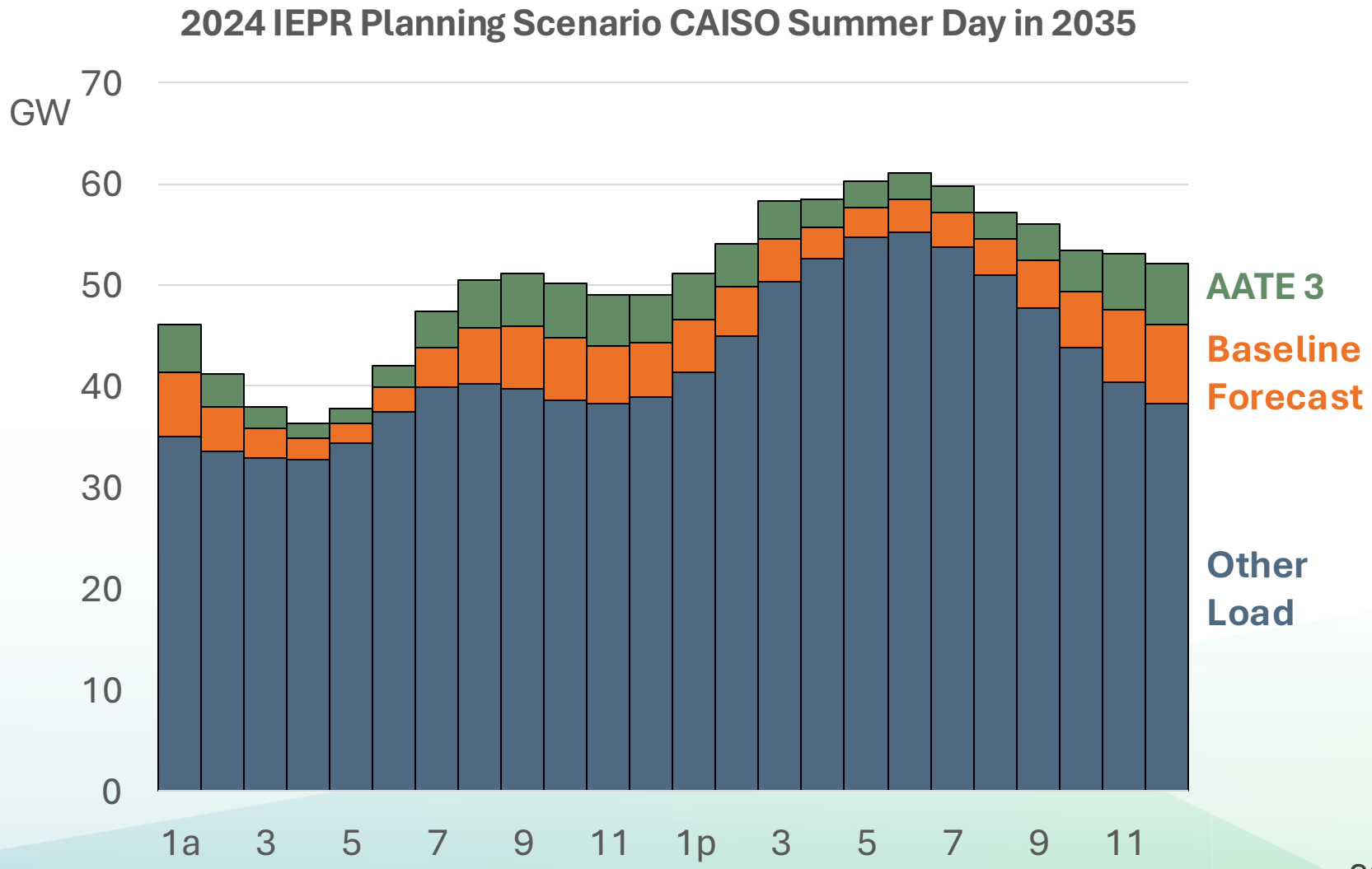
AATE Scenarios

- "Reasonably Expected to Occur" Criterion
- Advanced Electrification/ZE Policies
- Post-Process Alignment of Specific Policies with Baseline Outputs



Hourly TE Load Profiles

- Annual energy demand distributed into 8760 hourly load profiles using an economic EV load profile model
- Charging data from light-duty vehicles
- Charging shapes from medium- and heavy-duty models
- EV TOU rates by IOU territory
- TOU enrollment assumptions
- TOU elasticity studies



Opportunities with EV Profiles

- EV load currently represents a very small portion of residential load
- CEC has AMI data and is developing a framework for assessing EV charging from residential and commercial charging station meters
- Future residential models will separate EV charging from households

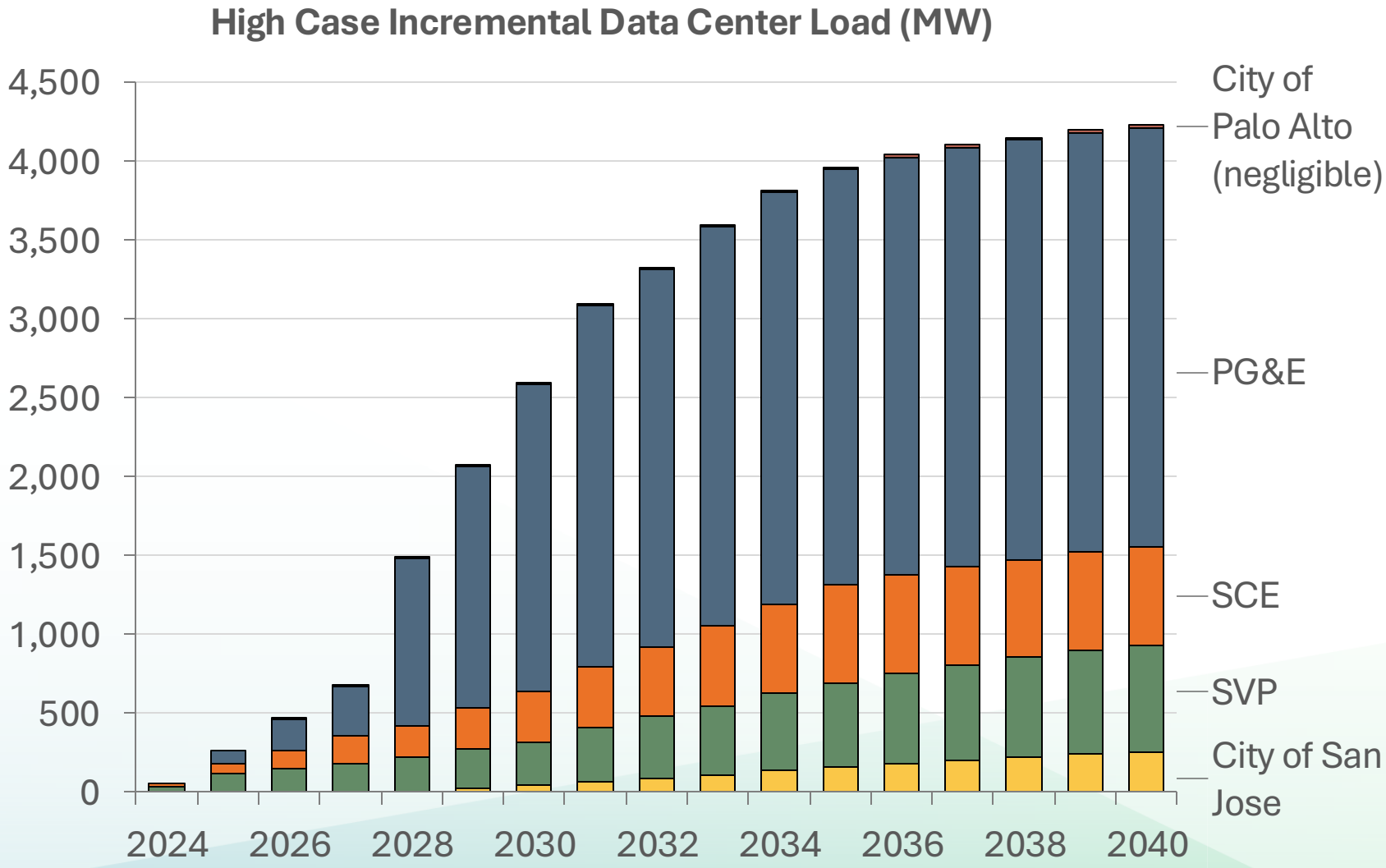
AAEE and AAFS

“Reasonably Expected to Occur” Criterion

- Incremental to the baseline forecast
- Codes & standards + incentive program EE/FS impacts
- Potential additional ZE appliance standards
- Increasing impacts across scenarios ranging from 1-6
  - Planning Scenario – AAEE 3 and AAFS 3
  - Local Reliability Scenario – AAEE 2 and AAFS 4

Data Centers

- Data from five utilities
  - Load forecasts (SVP, Palo Alto)
  - Application data (PG&E, San Jose, SCE)
    - Ramping schedules
    - Geographic data
- High Case for Local Reliability Scenario
  - ~4 GW growth in peak demand
  - IOU applications and inquiries have confidence levels based on project status



Hydrogen

- Hydrogen demand assessed for transportation
  - CEC's Demand Scenarios Project evaluating other pathways
- CEDF does not model Electricity demand for **hydrogen production**
- Uncertain demand (e.g., FCEVs, other transportation, industrial)
- Uncertain production pathways and grid impacts
  - Off-grid
  - Grid-friendly
  - Baseload

CEC staff continues to monitor developments in hydrogen fuel production and use cases

Thank You!

Questions?

Quentin Gee, Ph.D.
Energy Assessments Division | Advanced Electrification Analysis Branch
quentin.gee@energy.ca.gov

10 Minute Break

10:00 – 10:10 AM

Utility Presentations

Pacific Gas & Electric

Southern California Energy

San Diego Gas & Electric

High DER: Pending Loads Workshop

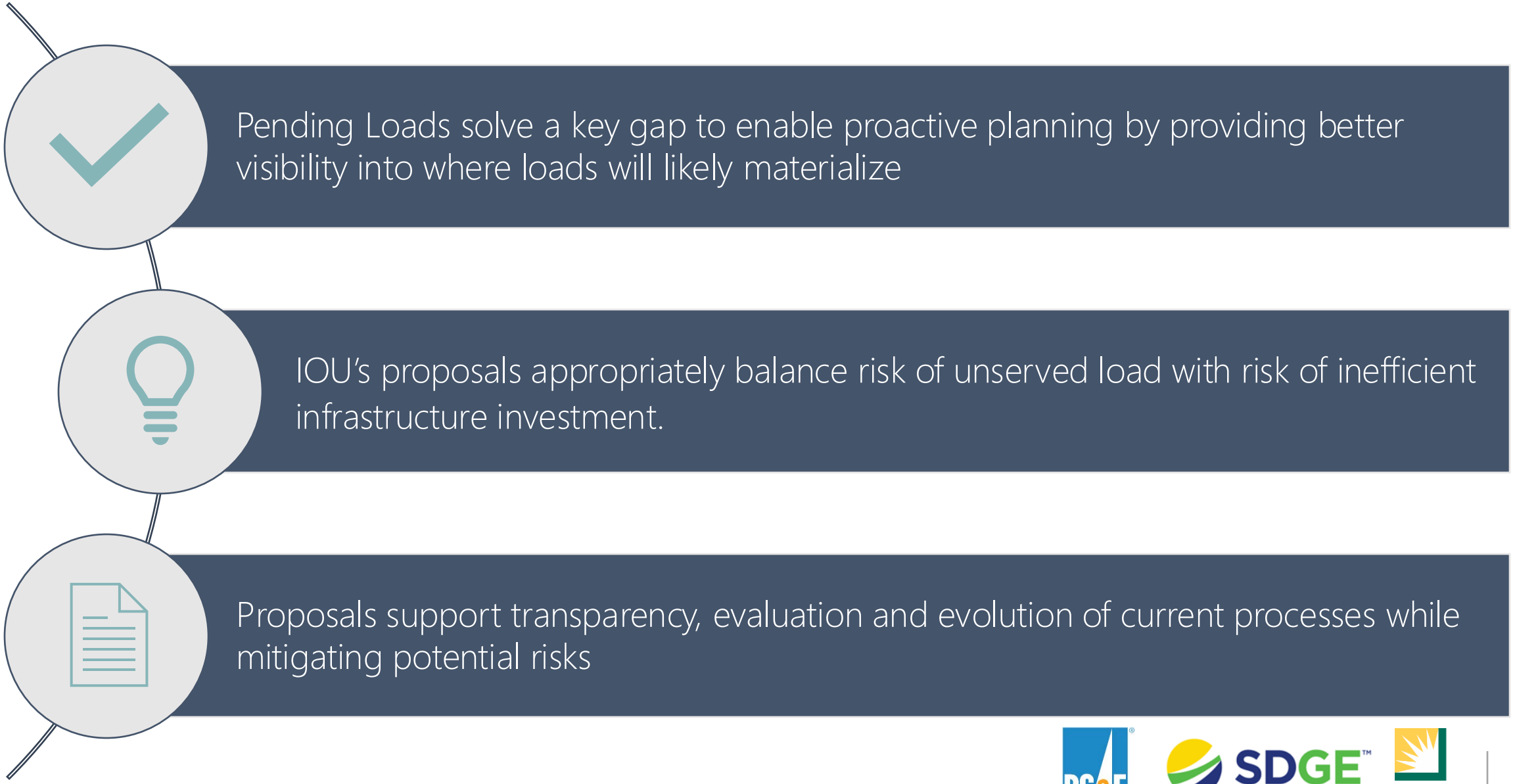
Joint Presentation by PG&E, SCE, and SDG&E

March 14, 2025

Agenda

Topic	Presenter	Time
Introduction/Agenda (Joint)	Jessica Tellez (PG&E)	10:10 – 10:15
SDG&E's Proposal and Q&A	Yi Li (SDG&E)	10:15 – 10:50
Overview/Framework (SCE and PG&E)	David Castle (SCE)	10:50 – 11:05
SCE's Proposal and Q&A	Belinda Vivas (SCE)	11:05 – 11:35
PG&E's Proposal and Q&A	Mark Jimenez (PG&E)	11:35 – 12:05
Conclusions (Joint)	Mark Jimenez (PG&E)	12:05 – 12:10

Executive Summary



SDG&E Pending Loads Proposal

Overview

- Background
- SDG&E's Pending Loads Proposal
- Use of Pending Loads beyond Distribution Planning Process
- Q&A

Background

- On March 15, 2024, the Energy Division served a Staff Proposal under the High DER Track 1, Phase 1 proceeding.
- Energy Division has indicated that it seeks early implementation of certain recommendations in the Staff Proposal, because a Decision will come too late to factor into the 2024-2025 planning cycle. One recommendation suggested by the Staff Proposal is "3.2.7 – Utilities to Create a 'Pending Loads' Category in DPP".
- In response to the suggestion, SDG&E proposed to use its localized forecasts of TE growth as inputs for Pending Loads in the 2024 – 2025 DPP cycle.
- The proposal was included in the Scenario Selection Letter and approved by the Energy Division on July 31, 2024.

Definition

Known Loads: Customer-provided loads with significant load addition based on customer service requests and customer engagement

Pending Loads: Alternative analysis that identifies the amount of incremental load between the IEPR[1] load component and utility's bottoms-up load component forecast

IEPR: Integrated Energy Policy Report

Use of Pending Loads Category

Aspects of the Pending Load Proposal

Commission Requirement	Proposal
The specific sources of information, at minimum, to inform the Pending Loads category	Bottoms-up forecasts of the IEPR load components (for example, utility-generated MD/HD forecasts).
Uses of Pending Load to inform the forecast and the investment plan	Pending Loads will be included in forecast and used in grid need assessment and identifying distribution upgrades in Distribution Planning Process.
How to coordinate the Pending Loads data with the transportation electrification rulemaking	SDG&E's approach addresses the rulemaking's goal of proactively planning for TE loads.

Use of Pending Loads Category

Aspects of the Pending Load Proposal

Commission Requirement	Proposal
The types of Pending Loads that should be allowed to exceed the Integrated Energy Policy Report (IEPR) in the near term and justification	Pending Loads based on bottoms-up forecasts should be allowed to exceed IEPR.
Appropriate guardrails for the Pending Load category and strategies to reduce any ratepayer risk association with Pending Loads	SDG&E's approach incorporates information provided in the CEC's IEPR and SDG&E's own bottoms-up forecasts which minimizes the risk of double-counting. Pending Loads are analyzed annually and reconciled against Known Loads and IEPR forecasts to minimize risk of under-utilized assets.

Pending Loads Reconciliation Example

- 2023 IEPR TE MD/HD
- 2023 IEPR AATE 3 MD/HD
- TE MD/HD known loads
- IOU Bottoms-up MD/HD

1. Combine IEPR TE MD/HD with IEPR AATE MD/HD to establish Total IEPR MD/HD component
2. Compare Total IEPR MD/HD component with SDG&E bottoms-up MD/HD forecast[1]
3. The larger forecast will be selected for DPP
4. Deduct TE MD/HD known loads
5. Model the remaining at the circuit level

- Circuit load growth estimates
- Input for LoadSEER

1. *Delta between IOU Bottoms-up forecast and Total IEPR MD/HD at the system level will be reported as Pending Load.*

Pending Loads Evaluation and Reporting

Background

Ordering Paragraph 14 of D.24-10-030 directs Utilities to include in their Pending Loads Evaluation Advice Letter:

1) an analysis of the percentage of Pending Loads that became energization requests in the form of a table that includes each Pending Load used in forecasting to date;
2) deviance of load size from Pending Load to Known Load;
3) deviance of load timing between Pending Load and Known Load;
4) differences in the accuracy and usefulness of Pending Loads by load category (i.e., end use);
5) differences in the accuracy and usefulness of Pending Loads by information source and/or methodology; and
6) the expected in-service date of projects initiated as a result of the Pending Loads category.

Pending Loads Evaluation and Reporting

Proposal

For reporting and evaluation purposes, SDG&E will report in the GNA/DUPR the aggregated MW of Pending Loads at the system level, by year, across the DPP forecast horizon.

This reporting enables a comparison of Pending Loads data against Known Loads in response to Ordering Paragraph 14, items 1 through 5. This comparison will be reported in the Pending Loads Evaluation Advice Letter.

Given SDG&E's Pending Loads are integrated within specific load components and are part of the forecasts, there is no way to identify which upgrades are initiated as a result of the "Pending Load category".

Use of Pending Loads in IRP and TPP

Integrated Resource Planning (IRP)

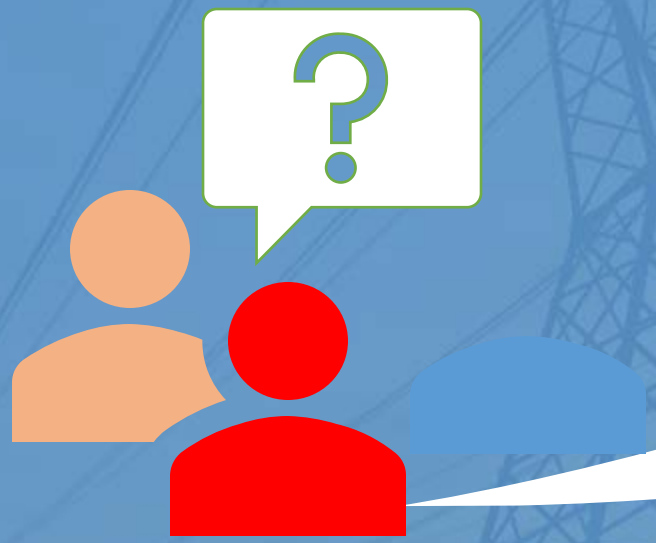
- Resource addition methodology uses a zonal approach with system-level IEPR load forecast as an input.
- Because IRP uses system-level IEPR load forecast, Pending Loads are not reflected in IRP.

Transmission Planning Process (TPP)

- Transmission planning methodology uses substation-level forecast loads. Substation-level forecast loads reflect:
  - peak load forecasts developed in the DPP
  - three substation-level load bus modifiers from the latest CEC IEPR (AAEE, AATE and AAFS)
  - an adjustment such that sum of the substation-level coincident loads, load bus modifiers, and transmission losses matches latest CEC 1-in-10 system-level peak load for SDG&E zone
- For pending Loads to be reflected in the TPP system-level forecasts and studies, TPP should be allowed to deviate from IEPR bus level load modifiers

Use of Pending Loads in GRC

- Distribution upgrades identified in the DPP, which reflect the impact of Pending Loads, will be inputs to SDG&E's funding request for the next General Rate Case (GRC).
- Note: GRC is prepared well in advance of actual submittal which means identified upgrades may not reflect the latest Pending Load forecast.



SCE/PG&E IOU Pending Loads Framework Proposal

What are Pending Loads?

Known Loads

- A "Known Load" is a customer energization request. (High DER Track 1 Decision, p. 42).

Pending Loads

- As a category, Pending Loads are less certain than a “Known Load” but more certain than economic disaggregation of the IEPR forecast based on trends. (Decision, p. 66).
- IOUs are being asked to create a pending loads category, provide evidence for types of pending loads to be considered “reliable bottom-up data” and present an evaluation of the outcomes no later than two years after implementation.
    - Include a variety of different types of data sources, with various levels of confidence, ranging from high to low.
        - "some types of pending load may reliably anticipate load growth”. (Decision, p.43)
    - Pending Load forecast types include specific customer plans, general industry trends, local government plans, compliance obligations, and more.

Top-down load disaggregation

- Allocating a set load quantity based on historical adoption trends, frequently using propensity models.

Why Pending Loads Now? To Enable Proactive Planning and Grid Readiness

Current Challenges

- Prior reactive/conservative planning meant most needs were identified based on actual energization requests and historical data.
- In recent years, load growth has been rapid, and many high-capacity projects have relatively short lead times.
- A new paradigm of forecasting is required as recognized by the Decision:
- *we must build proactively*, in anticipation of significant future load growth.*
- timely energization and *a prudent planning process* that factors in costs should result in a process that protects ratepayers.

Uses of Pending Loads

- Pending loads are a key part of the proactive planning solution
- This Pending Loads proposal refines existing categories of Pending Loads previously incorporated by SCE and PG&E and introduces new cases.
- Improve energization outcomes for customer in support of state electrification policy and economic goals.
- It will allow to inform upcoming load and identify larger scope needs to *meet timely energization requests*.

Cost Efficiency

- Guardrails are being proposed to prevent customers from funding capital projects that may not be needed when expected.
- Delayed energization requests increases the risk of cost, thus proper forecasting of load will allow for a proactive planning and lower cost risks.
- Scenario Planning can be used to *model different levels of Pending Loads* to inform a single investment plan with a no regrets investment, which supports a timely customer energization.

* High DER – Track 1 Decision, p.43

Certain Pending Loads Should be Allowed to Exceed IEPR – With Reasonable Guardrails

Long Term Challenges

- By the time the DPP is initiated, the IEPR vintage used will be 1 year behind, and the data used to develop that IEPR will be based on information from 2 years prior.
- Pending Loads categories might neither be reflected sufficiently for the current year needs nor be represented at all in the IEPR.
- IEPR cap have not historically aligned with existing energization requests; higher challenge for any type of inclusion of Pending Loads.

Load Capacity System vs Local

- *Pending Loads help to illustrate increased needs* (installed capacity), versus an energy forecast that just shows system grid needs.
- Variation and uncertainty around charging shapes means that it is difficult to reconcile system energy to local energy and reconcile non-coincident peaks.

Rapid & High-Volume Adoption

- The widespread adoption of EVs challenges the paradigm of loads being stationary. These types of load will require capacity at various locations, broadly increasing discrepancy between system-level and circuit-level capacity needs.
- High volume of other type of loads with significant load impact are being adapted (i.e., Data Centers, New Construction, Building Electrification, Early Customer Insights).

Impact to Future Processes

The inclusion of Pending Loads will drive changes to existing methodologies and development of new methodologies related to the following:

Distribution & Transmission Planning

- Higher input of loads from various input sources
- Assigning the proper confidence level and discount factors
- Higher volume of needs with expanded scope will be anticipated until the system reaches its proactive end state
- Extended reporting on GNA and existing annual public workshops

Scenario Planning

- The level of pending loads included in forecasts may vary across the different scenarios considered in scenario planning.
  - A scenario planning workshop will be held on April 22, 2025

GRC

- Output of scenario planning, the single investment plan, will inform the next GRC.

Framework Category:	"Reliable Bottom-Up Information" (High Confidence)		"Med-High Confidence Bottom-Up Information"	Top-Down Growth Allocation
Load / Pending Load Category	Known Load (Customer Applications)	Pending Load Category A High Confidence Customer Plans and Bottom-Up Studies/Trends	Pending Load Category B Specific Project Bottom-Up Information and Bottom-up Studies/Trends	Allocation of IEPR Economic Growth: includes traditional and improved methodologies.
Conceptual understanding	• High confidence loads based on actual customers coming forward with formal applications or detailed plans of specific customer projects in specific locations. • Also includes forecasts based on high confidence trends/studies where substantial load growth is expected in a specific area where exact customer is not yet known.		• Similar to category A, but lower confidence due to less precise data or greater uncertainty. • Includes specific customer projects as well as utility analysis-based compliance obligations, local government plans, plans, etc.	• Traditional allocation based on existing Propensity modeling approach. • Improved: Broader industry/policy trends used to perform more focused allocation (relative to existing propensity modeling) of economic growth allocation.
Data Source	Application For Service.	Customer provided specific plans or utility analysis based on compliance obligations.	Similar to category A plus additional sources relating to state/regional plans, industry trends, etc.	Propensity Modeling; Emerging industries not fully captured in IEPR (with insufficient data to move to Category B)
Base Forecast Inclusion	100%	100%	Different treatment depending on load type. Could be binary selection (0% or 100% depending on attributes) or discount factor (e.g. 25%, 50%, 75%, etc.)	N/A (no additional load beyond remaining IEPR growth)
Allowed to exceed IEPR (total over 13-year period)	Yes	Yes	Yes (potentially subject to discounting per above)	No

SCE Pending Loads Proposal

SOUTHERN CALIFORNIA EDISON

SCE's Approach to Pending Loads for 2024-2025 Cycle

In the 2024-2025 Plan Cycle, SCE is evaluating two forecast scenarios:

- Base scenario that will be used in DPP.
- Augmented Pending Loads scenario that will be considered only as a "study" and not incorporated into DPP.

Objective of the Augmented scenario is to (1) analyze the ***impact of each pending load category*** systemwide and identify areas that will see the most impact, as well as volume of needs that get driven by specific categories. (2) understand the various data input sources, intake forms, and ***solidify end to end process*** in incorporating the Pending Loads into the DPP.

Forecast	Purpose / Use	Sources of Load Growth Forecast
Base Pending Loads	Load included in actual DPP • Full DPP Engerineering analysis • Used to drive investment plan. • Results provided in GNA	• 3 load types ◦ Truck Stops, TE Early Customer Insights, TTM Approved Applications
Augmented Pending Loads	Analyzed as a study • Not included in actual DPP though will be executed concurrently to DPP • Results described in separate report; not included in GNA.	• Includes 3 above load types • Includes 5 new load types ◦ Bus Stops, Fleet/Warehouse electrification, TRU, TTM Applications (Res. & Non – Res.), Data Centers.

Approach to Building the Future State Pending Loads Proposal

TE Loads

- Continue to expand categories of load growth from TEGR by *implementing bottom-up policy-driven inputs*.
- Loads that were part of TEGR in the 2023-2024 DPP were incorporated into the Base Forecast for 2024-2025 DPP.
- New categories are being included under an *Augmented Pending Load Scenario*.

Non-TE Loads

- SCE has been collaborating closely with the builders' industry and the California Building Industry Association (CBIA) to better understand development processes, application lifecycle, and data sources.
- *Assessing guardrails* needed to ensure that risks are being mitigated appropriately in the planning.
- *Identifying Policy Driven load* studies to proactively plan on identified priority areas.

Benefits

- Will drive the process of Pending Loads from long-term to mid-term planning years.
- Identify larger projects sooner to aproactively plan for them.
- Know when to *take action when certainty levels for projects increase*.

SCE's Pending Loads Overview

Category	Load Type	Parameters	Confidence Level
Category A	• Truck Stops	• Study / Trend • TE Load	High
	• Early Customer Insights	• Customer Plans • TE Load	
	• Development: TTM Approved Projects	• Customer Plans • Non-TE Load • Residential & Non – Residential	
Category B	• Bus Stops	• Study / Trend • TE Load	Medium / Medium - High
	• Fleets/ Warehouse Electrification	• Study / Trend • TE Load	
	• Transport Refrigeration Unit	• Study / Trend • TE Load	
	• Future Buildout	• Specific Location • Non-TE Load • Residential and Non-Residential	
	• Development: TTM Projects	• Specific Location • Non-TE Load • Residential and Non-Residential	
	• Early Customer Insights	• Specific Location • TE Load and Non -TE Load	
	• Policy Driven Loads	• Study / Trend • Non -TE Load	

Category A: High Confidence Customer Plans and Bottom-Up Studies/Trends

Load Type	Definition	Data Source	IEPR Approach	Risk Reduction/ Guardrails
Truck Stops *TE Load*	Potential charging locations for truck stop electrification.	**West Coast Clean Transit Corridor Initiative (I-5 Report)** - multi-phase and multi-year research effort forecasting EV truck population, charging locations and site load requirements for MD/HD. **Expert Study -** Guidehouse developed a bottoms-up assessment of anticipated TE load from MDHD vehicles in SCE's service area with data on individual fleet operators and vehicles, to estimate granular locational electrification potential.	Incremental Substitute IEPR Forecast with SCE's Forecast	Derived from extensive consultant and IOU study; which goes into great detail on granular locational electrification potential sites.
Early Customer Insights *TE Load*	Electrification forecast to reach customer's Zero Emission Policy. Early project plans informed by customers through proactive engagement.	**Customer plans** communicated to SCE. Forecast is a bottom-up forecast by working with the customer, partners of the location and SCE's Customer Engagement Division.	Incremental Substitute IEPR Forecast with SCE's Forecast	Customers provide detailed plans on location/area, capacity needs, and need date; which are based on policy driven goals.
Residential / Non-Res Development: TTM Approved Projects *Non – TE Load*	Once project is approved under the Tentative Tract Maps - Final project description including number of units, building type, lat/long.	**Office of Planning & Research (OPR)** - CEQANet. Local governments are required to assess the environmental impacts of large development projects (e.g. TTMs), including impact to local electric grid, under the California Environmental Quality Act (CEQA). SCE team developed a CEQANet Project Tracking tool to extract relevant project data located within SCE service territory.	Under Review	If a project is approved under CEQANet, it will have a Notice of Determination Date, thus making it into a High Confidence load type.

Category B: Specific Bottom-Up Information & Trended Bottom-Up Information

Load Type	Definition	Data Source	IEPR Approach	Risk Reduction and Guardrails
Transit Bus *TE Load*	Potential charging locations for transit busses provided by transit agencies in their ICT plans.	Incremental to the identified data on the Base Case - Bottom-up based on CARB ICT plans submitted by transit agencies	Incremental Substitute IEPR Forecast with SCE's Forecast	To ensure forecast consistency, SCE is relying on data from CARB for these load types.
Fleets/warehouses Required to Electrify *TE Load*	Fleets and warehouse/distribution centers subject to CARB and AQMD rules, in fleet clustering locations	CARB ACF fleet electrification in "hot spots" only	Incremental No existing category in IEPR	
TRU *TE Load*	Transport Refrigeration Unit (TRU) is a refrigeration system that controls the temperature of temperature-sensitive products during transport and storage.	Guidehouse forecast that is based on CARB provided TRU locations	Incremental Substitute IEPR Forecast with SCE's Forecast	
Early Customer Insights *TE Load* *Non-TE Load*	Early project plans informed by customers through proactive customer engagement. Ranging from Residential to all other type of customers.	Customer input through some level of project submittal or external outreach.	Incremental Substitute IEPR Forecast with SCE's Forecast	• Based on specific customer projects and plans. • Data provided is not as granular as provided in category A, thus confidence level is lower.

(Cont.) Category B: Specific Bottom-Up Information & Trended Bottom-Up Information

Load Type	Definition	Data Source	IEPR Approach	Risk Reduction/ Guardrails
Future Buildout Areas *Non – TE Load*	Inventory of parcels and planning areas targeted by local jurisdictions for new housing and non-residential development by density, number of allowable units, building type and square footage. *Future Item*	**Local Jurisdictions** – Land Use Element, which serves as a fundamental part of local planning, guiding the physical development of a city or county. California law requires that Land Use Elements be updated every ten to fifteen years. Unlike Housing Elements, there is no public access to the statewide database of Land Use Elements.	Under Review	TBD
Residential / Non-Res Development: TTM Project Application *Non-TE Load*	Proposed project description including number of units, building type, square footage, location.	**Housing & Community Development (HCD) - Statewide Clearinghouse**. The Housing Element ensures that enough land is zoned to accommodate projected housing needs, including tracking the construction of housing units. California law requires that Housing Elements be updated every eight years, including Annual Progress Reports (e.g. how many units by building type, etc.). Publicly accessible statewide clearinghouse of all approved Housing Elements with interactive GIS maps and tabular CSV data export functions.	Under Review	Projects go through a lengthy and costly process. As the project gets tracked year after year and its status changes, the certainty level will increase accordingly. Project will be considered a Category B until it is approved under the CEQANet database with a Notice of Determination date, which at that point will move to Category A with a high confidence level.
Policy Driven Loads *Non-TE Loads*	Subject to various decarbonization policy that will accelerate the load growth throughout the system. *Future Item*	**TBD based on future CPUC actions**. Could include data based on policies adopted for gas transition/ decarbonization.	To Be Determined	TBD

PG&E's Pending Loads Proposal

What's PG&E's doing right now to implement a pending loads category

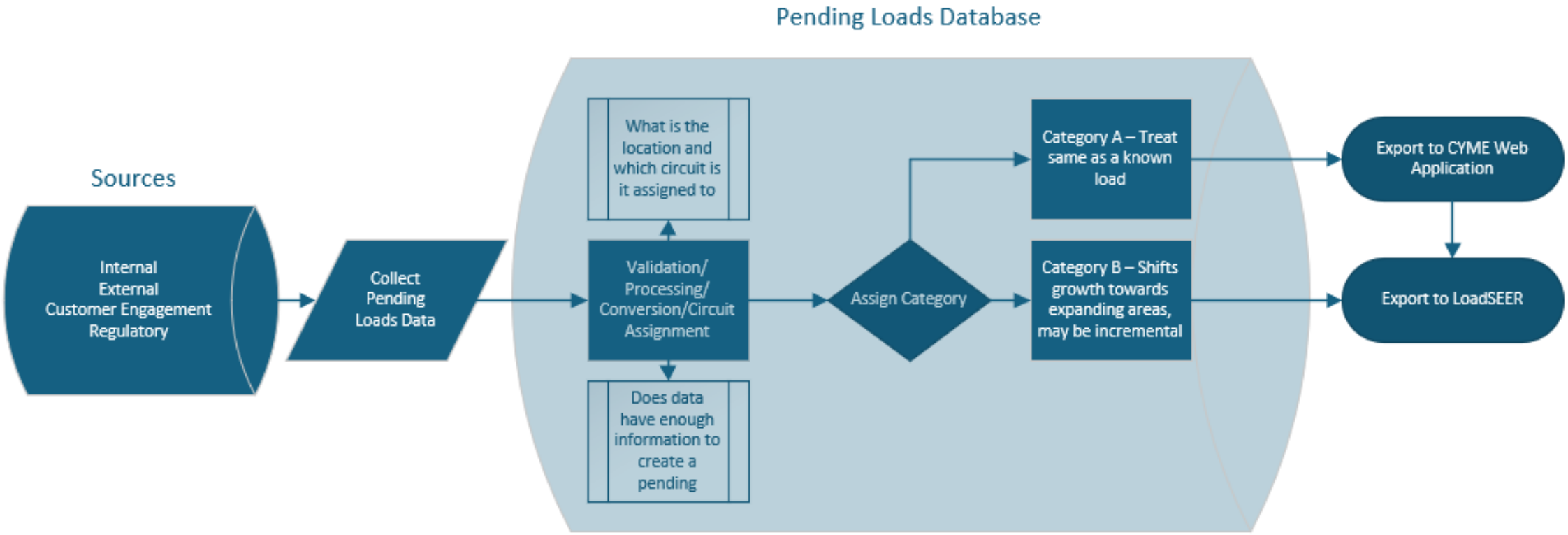
1) Collecting all existing sources of pending loads data
2) Assessing the data quality of existing pending load data
3) Evaluating how we use pending loads in our forecast in the current and previous cycles
4) Designing a data structure that automatically ingests pending load data from different sources
5) Creating a data processing map to convert pending load data into forecast elements
6) Creating categorization tables
7) Considering tools needed to maintain pending loads
8) Mapping out how pending loads will flow into our modeling tools
9) Designing the pending loads database

Where will PG&E's Pending Loads data come from?

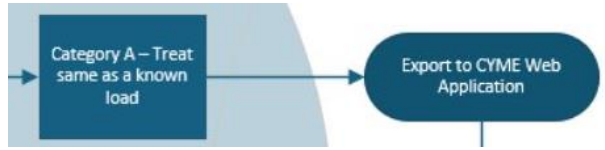
Pending loads data will come from multiple sources (Internal, External, Customer Survey, TEPP)

	Source	Who provides the data?	Validation	Conversion to forecast data
Internal	Research City/County Development Plans, Knowledge of Growth Trends, Media	PG&E engineers, service planning, customer representatives	All the pending load data is imported into to a central data base. Validation of minimum required data is done in the database.	Scoring, category assignment, and derating if needed Feeder assignment Data staged for export into CYME or LoadSEER
External	Direct Communications From Large Ind/Com/Res Customers, Land Developers, Large Load Pre-application, EV Charger Pre-application	PG&E engineers on behalf of customers engaged with PG&E, EV charger applicants, Large Load applicants		
Customer Survey	Priority Populations, City, County, State, Tribal, PGE Customers	Customers provide future project information using an external facing web form survey		
Regulatory	TEPP framework	Energy Division or CPUC		

Processing of customer provided data into Pending Loads

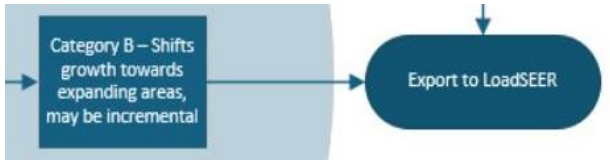


What happens to Category A Pending Loads that go into CYME?



- What is CYME? It's a distribution load modelling tool used by engineers to do simulations.
  - Pending loads modelled in CYME will be treated exactly the same as a Known Load
    - Things that happen when loads are modelled in the CYME web application
      - Specific location and connection point on the system is confirmed
      - Validation of the start year, shape, kW, circuit assignment is completed annually
      - The model evaluates conductor loading, voltage drop, and protection
      - Engineered solutions are created starting with lowest cost alternative
      - Project scopes and estimated costs are captured
      - Project is prepped to obtain authorization to begin
  - Loads modelled in CYME get applied at 100% to the feeder (in LoadSEER and CYME)
    - Loads that originate from CYME are called locked loads because they will not be discounted in the forecast
    - These loads are removed from the IEPR growth prior to running a disaggregation model
  - Projects are added to the investment plan

What happens to Category B Pending Loads that go into LoadSEER only?



- What is LoadSEER?
  - It's a distribution substation profile driven forecasting tool used by engineers to see the net impact of projects, transfers, and incoming loads for a forecast scenario.
  - Category B pending loads have a variety of treatment options
    - These loads will have the same core attributes as CYME loads - start year, shape, kW, circuit assignment
    - Will be assigned a sub-category B1 (Incremental), B2 (Fixed), B3 (Scaled) depending on the scenario design
      - B1 (Incremental) - Pending load (kW and location) that is not part of the IEPR forecast and thus is added to forecast as an adjustment. It is not part of the spatial disaggregation
      - B2 (Fixed) - Pending load (kW and location) with higher confidence will be assigned to a feeder in LoadSEER and netted out of spatial disaggregation
      - B3 (Scaled) - Pending load (kW and location) with lower confidence will be assigned to a feeder in LoadSEER and will impact disaggregation but may be scaled down if constrained by total growth in the spatial disaggregation
    - Confidence level based on evaluation rubric (in development)
    - Application may depend on the scenario
    - Load is forecasted at feeder and rolls higher levels like banks and substations
  - Inform investment plan for feeder and bank projects.

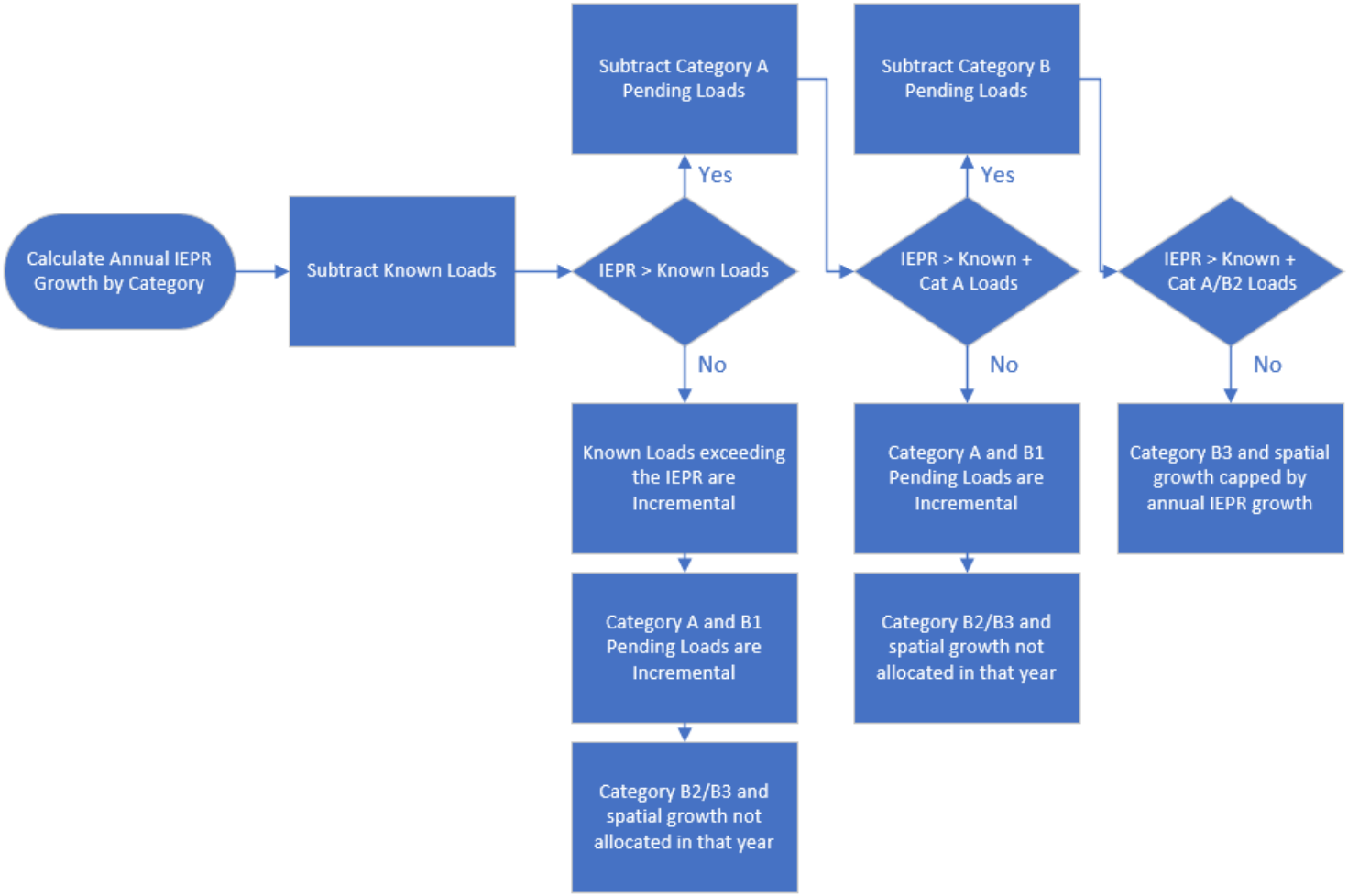
Applying Pending Loads categories in the base forecast

How do today's PG&E pending load data fit into pending loads categories			
	Typical Start Year	Disaggregation Level	What's in the category?
Known Loads	Year 1-5	Address Specific	Applications for service preconstruction and post construction while ramping up (Ind, Ag, Res, Com, EV, Battery Charging)
Category A	Year 1-5	Address Specific	EV preapplications Large Load Interconnection Requests Projects in grading stage
Category B1	Year 3-10	Circuit Level or Bank Level	Data centers TEPP
Category B2/3	Year 3-10	Circuit Level or Bank Level	Projects prior to grading Speculative warehousing EV charging infrastructure Customer specific load and EV charging plans HD highway EV charging MD depot EV charging, Area plans, Zoning EVs2Scale EV telematics

Refer to Pending Loads Framework Proposal Slide
Circuit level spreading impacts lines sections while Bank level does not

Base Forecast Pending Load Annual Reconciliation

- Reconciliation is done annually based on IEPR annual growth
- Reconciliation is done for growth types that are considered within the IEPR, growth types that not included in the IEPR are always incremental
- Known Loads are generally subtracted first on an annual basis
- Pending Loads are generally subtracted second on an annual basis



IEPR Reconciliation by growth category - Example

Pending loads treatment in the base forecast depends on the DER category and annual IEPR growth

IEPR Example	Year 1 Growth	Year 2 Growth	Year 3 Growth	Year 4 Growth	Year 5 Growth	Year 6 Growth	Year 7 Growth	Year 8 Growth	Year 9 Growth	Year 10 Growth
Annual IEPR Growth	**325**	**275**	**305**	**280**	**310**	**290**	**325**	**340**	**305**	**280**
Known Loads Total	1075	890	230	10	-	25	50	-	-	-
Pending Loads Category A Total	325	200	50	-	25	125	-	-	10	5
Pending Loads Category B1 Total	77	20	10	-	50	-	105	20	75	80
Pending Loads Category B2/3 Total	25	20	70	300	80	30	-	65	90	10
Spatial Growth Potential	100	130	230	200	240	150	420	330	320	210
Net Annual Growth In Forecast	**1477**	**1110**	**315**	**280**	**360**	**290**	**430**	**360**	**380**	**360**

Embedded vs Incremental

Known Loads Embedded	325	275	230	10	-	25	50	-	-	-
Known Loads Incremental	750	615	-	-	-	-	-	-	-	-
Pending Loads Category A Embedded	-	-	50	-	25	125	-	-	10	5
Pending Loads Category A Incremental	325	200	-	-	-	-	-	-	-	-
Pending Loads Category B1 Incremental	77	20	10	-	50	60	105	20	75	80
Pending Loads Category B2/3 Embedded	-	-	35	270	80	30	-	65	90	10
Pending Loads Category B2/3 Incremental	-	-	-	-	-	-	-	-	-	-
Spatial Growth	-	-	-	-	205	50	275	275	205	265
Net Annual Growth in Forecast	1477	1110	315	280	360	290	430	360	380	360

Category B pending loads will only exceed the IEPR if they are not considered to be part of the IEPR growth model

Key Takeaways

Key Takeaways

- **Framework:** Developed a robust, comprehensive framework with a focus on confidence levels, guardrails, and relation to IEPR.
- **Proposal Benefits**:
  - The IOUs proposal balances the risk of unserved load with the risk of inefficient infrastructure investment.
  - Supports transparency, evaluation, and evolution of current processes.
  - Allows for incorporation of community input and other reliable data sources into planning.
  - Improves proactive planning to improve customer outcomes and prepare for a high electrification future.
- **Improved Regulatory Alignment**: Pending loads will highlight the challenges of reconciling system and local planning.

Open Discussion
Q&A

Break for Lunch

12:40 – 1:40 PM

Agenda - Afternoon

Time	Agenda Item	Details
12:40 - 1:40 PM	Lunch	Be back in 60 minutes!
1:40 – 2:50 PM	**Stakeholder perspectives on benefits, risks, safeguards, and reporting requirements.** •Presentations by: •Cal Advocates – Richard Khoe and Marc Hutton •Hoopa Valley Tribe - Linnea Jackson •Morongo Band of Mission Indians - Karen Woodard •Terrawatt Infrastructure – Jason Berry **Objectives**: Propose and discuss data sources to inform pending loads, the use of pending loads in DPEP, the allowance of types of loads to exceed the IEPR, guardrails and risk reduction strategies, and annual reporting requirements.	Stakeholders will present perspectives on benefits and risks associated with Pending Loads. Present proposals for types and treatment of load in the Pending Loads category and/or safeguards and reporting requirements.
2:50 – 3:20 PM	**Open Discussion**	Reactions to stakeholder presentations. Closing thoughts from participants.
3:20 – 3:30 PM	**Closing Remarks and Next Steps**	Summary of key takeaway, closing remarks, and next steps

Stakeholder Presentations

Cal Advocates

Richard Khoe

Marc Hutton

The Public ADVOCATES OFFICE

Pending Loads Implementation Workshop

Perspectives on Pending Loads and Grid Planning

Richard Khoe, Supervisor

Marc Hutton, Utilities Engineer

March 14, 2025

Affordability is a key issue

Residential average rates have significantly increased

	Average Rate ($ per kWh)	3-year Change Jan 2022 to Feb 2025	10-year Change Jan 2015 to Feb 2025
PG&E	$0.380	↑ 41%	↑ 101%
Southern California Edison	$0.316	↑ 26%	↑ 85%
SDGE	$0.397	↑ 5%	↑ 71%

https://www.publicadvocates.cpuc.ca.gov/-/media/cal-advocates-website/files/press-room/reports-and-analyses/250218-public-advocates-office-q4-2024-rates-report.pdf

Pro-active planning

- Pending loads are a form of proactive planning.
- We support doing our best to provide for sufficient capacity to energize future load.
- But the Commission has to balance avoiding energization delays with the risk of building something that isn't needed, or allocating funds that aren't needed.
- We don't want to exacerbate the affordability crisis.

The IEPR should be the basis

- The CEC's Integrated Energy Policy Report should be the basis for load growth forecasts.
- The IEPR is robust, transparent, subject to stakeholder review, developed with interagency coordination.
- We should be cautious about moving away from the IEPR forecast.
- But – there is a lag between IEPR publication and IOU planning occurring, and utilities may have more up to date information that wasn't originally provided to the CEC.
- And – the IEPR load forecast is system level and must be disaggregated for use in distribution planning.
- **Key Question – What utility data should be available to supplement the IEPR system load growth forecast?**

Our current position

What We're Ok With

- ✓ Utility data is ok for disaggregating the IEPR system level forecast provided it is transparent and subject to stakeholder scrutiny.
- ✓ Utilities can supplement the IEPR with data on new loads that have submitted an energization application, provided they can show it is incremental to the IEPR, and it is transparent and subject to stakeholder scrutiny.

What We're Thinking About

- ? Is there some utility data that is
  - more certain than utility forecast data but
  - is not the subject of an energization application

  and that therefore could be used to supplement the IEPR?
- ? See next slide.

What We're Not Ok With

- × Utility forecast data being used to supplement the IEPR where it is not based on a specific customer load.

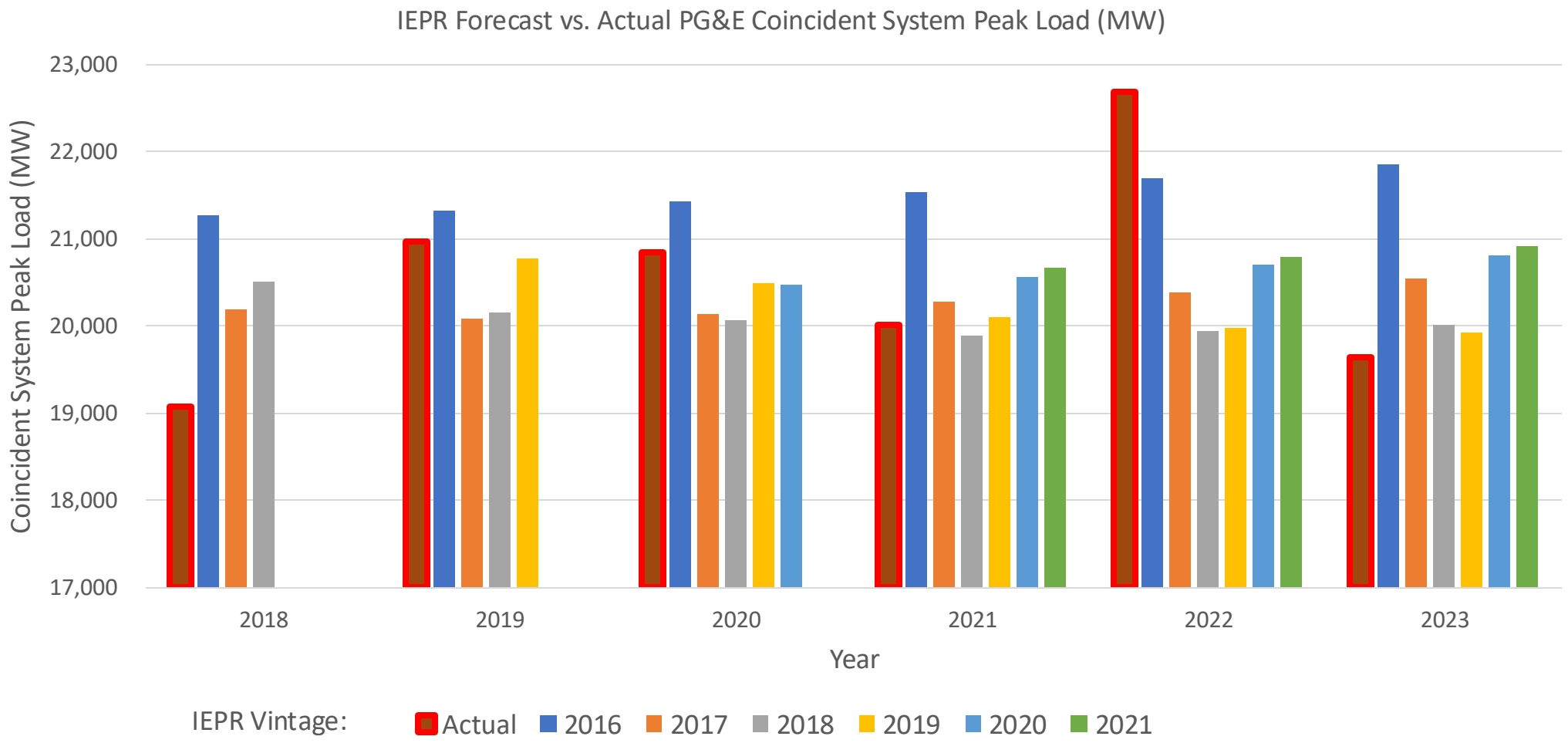
What we're thinking about

- Are there some types of load that are:
  - Based on utility interaction with a customer (i.e. more reliable than a general forecast)
  - But not yet subject of an application for energization
  - That are certain enough to be used to supplement the IEPR forecast?
- Does the type of infrastructure make a difference?
  - Does the potential to change the plan at later time (e.g for long lead time infrastructure) without incurring costs for ratepayers make a difference?

IEPR is reasonable

- Some stakeholders have argued for deviating from the IEPR in distribution planning because it has consistently under-forecast load.
- Historically, the IEPR has *not* consistently under-forecast load.
- Cal Advocates compared several vintages of the IEPR forecasts with the actual coincident peak loads in PG&E, SCE, and SDG&E territories.
- For brevity, we present results for PG&E's service territory only.
- We find no consistent under-forecasting in any IOU service territory.

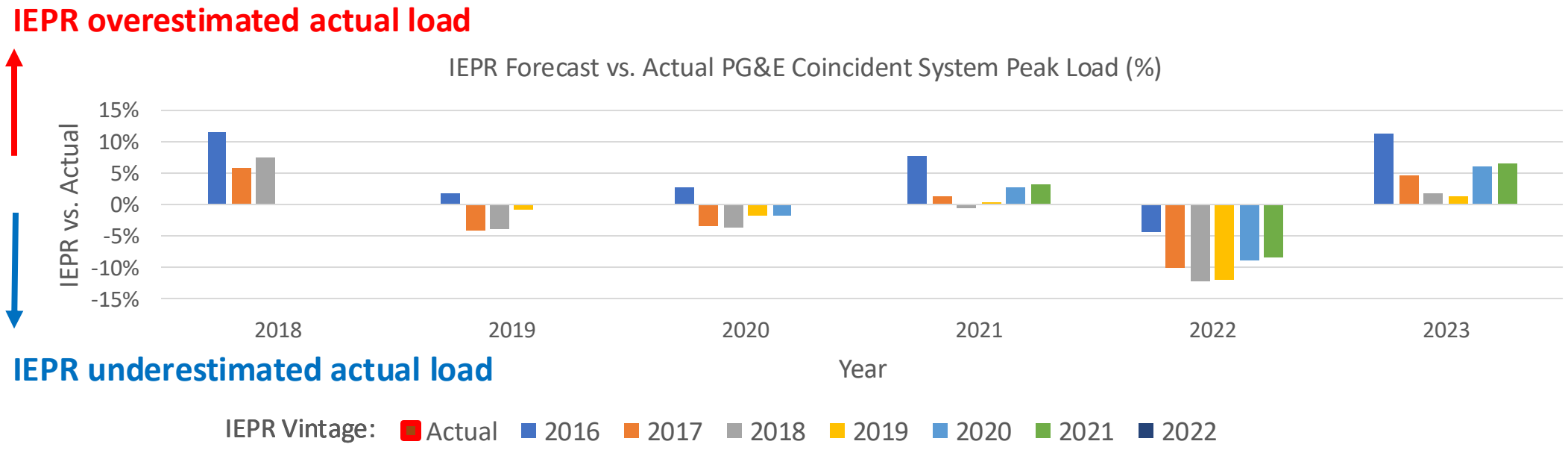
PG&E Comparison



Source: Cal Advocates analysis, 11/20/2024

PG&E Comparison

- Significant underestimation of load in 2022 (extreme heat wave).
- Moderate overestimation in 2018 and 2023 for some IEPR vintages.



Guardrails for Pending Loads

- Prevent use of unreliable data sources, especially if they aren't transparent.
- Ensure forecasts are based on customer engagement to improve reliability.
- Focus on pre-application process to identify reliable pending loads.

Pending Loads Evaluation

- Cal Advocates supports the 2-year evaluation period for pending loads but recommends waiting until evaluation completed before implementing pending loads (likely in the 2027-2028 annual planning process).
  - First, understand pre-application load inquiries better. We don't know how likely they are to result in an energization application.
  - Energization timelines Decision (D.24-09-020) may impact energization processes, including customer notification, and change the certainty of pending loads.
- Cal Advocates is developing new metrics to measure utilization of the grid to understand impact of proactive planning on grid utilization.

Questions?

Stakeholder Presentations

Hoopa Valley Tribe

Linnea Jackson

PENDING LOADS IMPLEMENTATION WORKSHOP

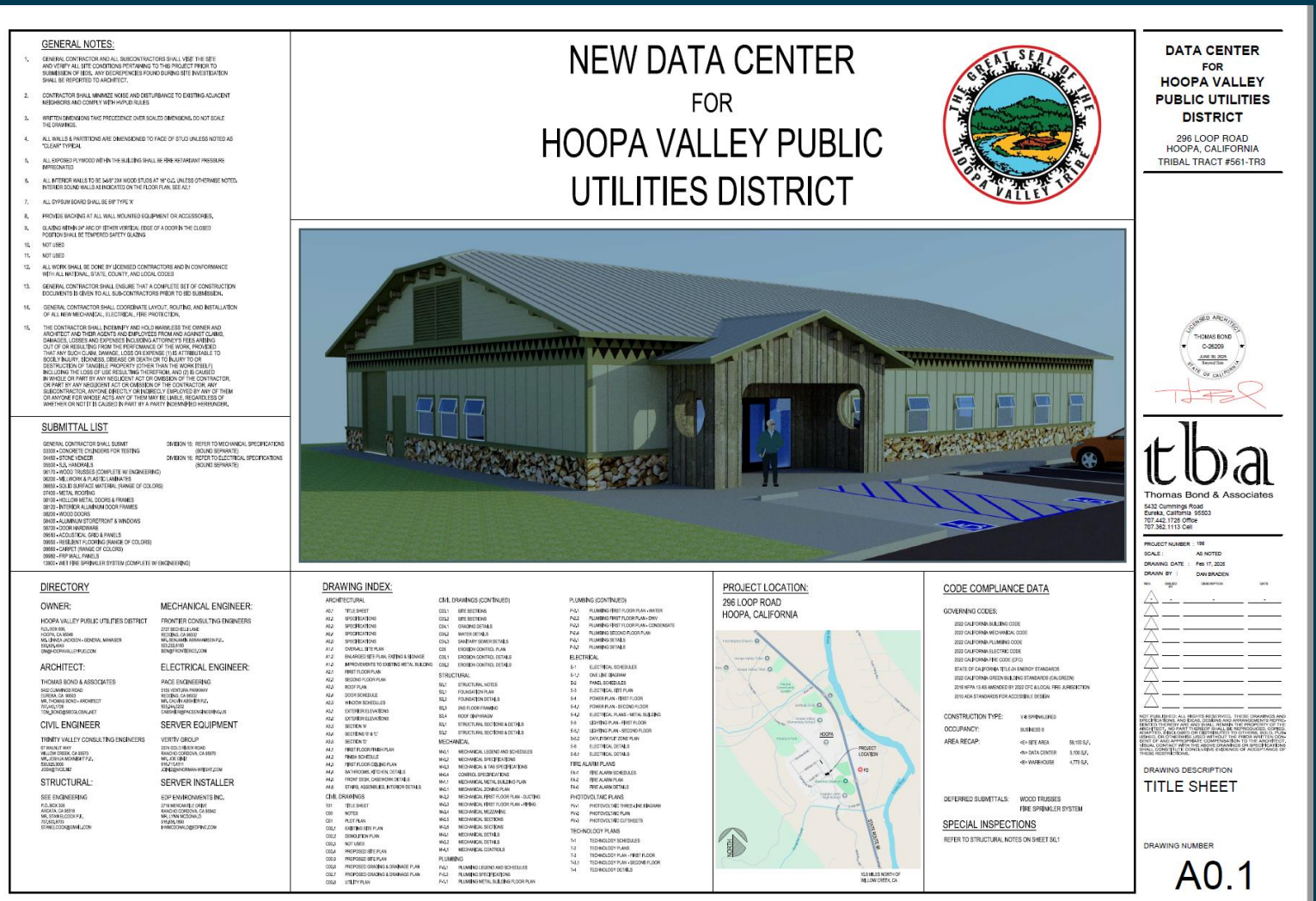
MARCH 14, 2025

HVPUD was chartered in 1982 and for the past 43 years we have provided essential critical services to the Hoopa Valley Indian Reservation including water, broadband and energy initiatives.

CRITICAL UTILITY INFRASTRUCTURE

- Tribes are installing critical infrastructure
- Clarity on Process/requirements
- Long delays in energization
- Lack of Tribal government consultation
- Delays cause loss of project funding
- Two years from application submission to energize

NEW PENDING LOADS



GENERAL NOTES:

1. GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VISIT THE SITE AND VERIFY ALL SITE CONDITIONS PERTAINING TO THIS PROJECT PRIOR TO SUBMISSION OF BIDS. ANY DISCREPENCIES FOUND DURING SITE INVESTIGATION SHALL BE REPORTED TO ARCHITECT.
2. CONTRACTOR SHALL MINIMIZE NOISE AND DISTURBANCE TO EXISTING ADJACENT NEIGHBORS AND COMPLY WITH HOPLID RULES
3. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS, DO NOT SCALE THE DRAWINGS.
4. ALL WALLS & PARTITIONS ARE DIMENSIONED TO FACE OF STUD UNLESS NOTED AS "CLEAR" TYPICAL
5. ALL EXPOSED PLYWOOD WITHIN THE BUILDING SHALL BE FIRE RETARDANT PRESSURE IMPREGNATED
6. ALL INTERIOR WALLS TO BE 3-5/8" 2X4 WOOD STUDS AT 16" O.C. UNLESS OTHERWISE NOTED. INTERIOR SOUND WALLS AS INDICATED ON THE FLOOR PLAN. SEE A2.1
7. ALL GYPSUM BOARD SHALL BE 5/8" TYPE 'X'
8. PROVIDE BACKING AT ALL WALL MOUNTED EQUIPMENT OR ACCESSORIES,
9. GLAZING WITHIN 24" ARC OF EITHER VERTICAL EDGE OF A DOOR IN THE CLOSED POSITION SHALL BE TEMPERED SAFETY GLAZING
10. NOT USED
11. NOT USED
12. ALL WORK SHALL BE DONE BY LICENSED CONTRACTORS AND IN CONFORMANCE WITH ALL NATIONAL, STATE, COUNTY, AND LOCAL CODES
13. GENERAL CONTRACTOR SHALL ENSURE THAT A COMPLETE SET OF CONSTRUCTION DOCUMENTS IS GIVEN TO ALL SUB-CONTRACTORS PRIOR TO BID SUBMISSION.
14. GENERAL CONTRACTOR SHALL COORDINATE LAYOUT, ROUTING, AND INSTALLATION OF ALL NEW MECHANICAL, ELECTRICAL, FIRE PROTECTION,
15. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER AND ARCHITECT AND THEIR AGENTS AND EMPLOYEES FROM AND AGAINST CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING ATTORNEYS FEES ARISING OUT OF OR RESULTING FROM THE PERFORMANCE OF THE WORK, PROVIDED THAT ANY SUCH CLAIM, DAMAGE, LOSS OR EXPENSE (1) IS ATTRIBUTABLE TO BODILY INJURY, SICKNESS, DISEASE OR DEATH OR TO INJURY TO OR DESTRUCTION OF TANGIBLE PROPERTY (OTHER THAN THE WORK ITSELF) INCLUDING THE LOSS OF USE RESULTING THEREFROM, AND (2) IS CAUSED IN WHOLE OR PART BY ANY NEGLIGENT ACT OR OMISSION OF THE CONTRACTOR, OR PART BY ANY NEGLIGENT ACT OR OMISSION OF THE CONTRACTOR, ANY SUBCONTRACTOR, ANYONE DIRECTLY OR INDIRECLY EMPLOYED BY ANY OF THEM OR ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE, REGARDLESS OF WHETHER OR NOT IT IS CAUSED IN PART BY A PARTY INDEMNIFIED HEREUNDER.

SUBMITTAL LIST

GENERAL CONTRACTOR SHALL SUBMIT
03300 • CONCRETE CYLINDERS FOR TESTING
04400 • STONE VENEER
05500 • S.S. HANDRAILS
06170 • WOOD TRUSSES (COMPLETE W/ ENGINEERING)
06200 • MILLWORK & PLASTIC LAMINATES
06650 • SOLID SURFACE MATERIAL (RANGE OF COLORS)
07400 • METAL ROOFING
08100 • HOLLOW METAL DOORS & FRAMES
08120 • INTERIOR ALUMINUM DOOR FRAMES
08200 • WOOD DOORS
08400 • ALUMINUM STOREFRONT & WINDOWS
08700 • DOOR HARDWARE
09511 • ACOUSTICAL GRID & PANELS
09650 • RESILIENT FLOORING (RANGE OF COLORS)
09680 • CARPET (RANGE OF COLORS)
09960 • FRP WALL PANELS
13960 • WET FIRE SPRINKLER SYSTEM (COMPLETE W/ ENGINEERING)

DIVISION 15: REFER TO MECHANICAL SPECIFICATIONS (BOUND SEPARATE)
DIVISION 16: REFER TO ELECTRICAL SPECIFICATIONS (BOUND SEPARATE)

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NEW DATA CENTER
FOR
HOOPA VALLEY PUBLIC UTILITIES DISTRICT

DRAWING INDEX:

ARCHITECTURAL
A0.1 TITLE SHEET
A1.2 SPECIFICATIONS
A1.2 SPECIFICATIONS
A1.2 SPECIFICATIONS
A1.2 SPECIFICATIONS
A1.2 OVERALL SITE PLAN
A1.2 ENLARGED SITE PLAN, EXISTING & SIGNAGE
A1.2 IMPROVEMENTS TO EXISTING METAL BUILDING
A2.1 FIRST FLOOR PLAN
A2.2 SECOND FLOOR PLAN
A2.2 ROOF PLAN
A2.4 DOOR SCHEDULE
A2.5 WINDOW SCHEDULE
A3.2 EXTERIOR ELEVATIONS
A3.2 EXTERIOR ELEVATIONS
A3.3 SECTION 'A'
A3.4 SECTIONS 'B' & 'C'
A3.5 SECTION 'D'
A4.1 FIRST FLOOR FINISH PLAN
A4.2 FINISH SCHEDULE
A4.2 FIRST FLOOR CEILING PLAN
A4.4 BATHROOMS, KITCHEN, DETAILS
A4.5 FRONT DESK, CASEWORK DETAILS
A4.6 STAIRS, ASSEMBLIES, INTERIOR DETAILS

CIVIL DRAWINGS
T01 TITLE SHEET
C00 NOTES
C01 PLOT PLAN
C01.1 EXISTING SITE PLAN
C01.2 DEMOLITION PLAN
C02.2 NOT USED
C02.4 PROPOSED SITE PLAN
C03.3 PROPOSED SITE PLAN
C03.6 PROPOSED GRADING & DRAINAGE PLAN
C03.7 PROPOSED GRADING & DRAINAGE PLAN
C05.2 UTILITY PLAN

CIVIL DRAWINGS (CONTINUED)
C05.1 SITE SECTIONS
C05.2 SITE SECTIONS
C04.1 GRADING DETAILS
C04.2 WATER DETAILS
C04.3 SANITARY SEWER DETAILS
C05 EROSION CONTROL PLAN
C05.1 EROSION CONTROL DETAILS
C05.2 EROSION CONTROL DETAILS

STRUCTURAL
S0.1 STRUCTURAL NOTES
S2.1 FOUNDATION PLAN
S2.3 FOUNDATION DETAILS
S3.1 2ND FLOOR FRAMING
S3.4 ROOF DIAPHRAGM
S5.1 STRUCTURAL SECTIONS & DETAILS
S5.2 STRUCTURAL SECTIONS & DETAILS

MECHANICAL
M0.1 MECHANICAL LEGEND AND SCHEDULES
M4.2 MECHANICAL SPECIFICATIONS
M4.3 MECHANICAL & TAB SPECIFICATIONS
M4.4 CONTROL SPECIFICATIONS
M4.1 MECHANICAL METAL BUILDING PLAN
M2.1 MECHANICAL ZONING PLAN
M4.2 MECHANICAL FIRST FLOOR PLAN - DUCTING
M4.3 MECHANICAL FIRST FLOOR PLAN - PIPING
M4.4 MECHANICAL MEZZANINE
M4.5 MECHANICAL SECTIONS
M4.6 MECHANICAL SECTIONS
M4.1 MECHANICAL DETAILS
M4.2 MECHANICAL DETAILS
M4.3 MECHANICAL CONTROLS

PLUMBING
P4.1 PLUMBING LEGEND AND SCHEDULES
P4.2 PLUMBING SPECIFICATIONS
P4.1 PLUMBING METAL BUILDING FLOOR PLAN

PLUMBING (CONTINUED)
P4.1 PLUMBING FIRST FLOOR PLAN - WATER
P4.2 PLUMBING FIRST FLOOR PLAN - DWV
P4.3 PLUMBING FIRST FLOOR PLAN - CONDENSATE
P4.4 PLUMBING SECOND FLOOR PLAN
P4.1 PLUMBING DETAILS
P4.2 PLUMBING DETAILS

ELECTRICAL
E-1 ELECTRICAL SCHEDULES
E-1.1 ONE LINE DIAGRAM
E-2 PANEL SCHEDULES
E-3 ELECTRICAL SITE PLAN
E-4 POWER PLAN - FIRST FLOOR
E-4.2 POWER PLAN - SECOND FLOOR
E-4.2 ELECTRICAL PLANS - METAL BUILDING
E-5 LIGHTING PLAN - FIRST FLOOR
E-5.2 LIGHTING PLAN - SECOND FLOOR
E-6.2 DAYLIGHTING ZONE PLAN
E-8 ELECTRICAL DETAILS
E-8.1 ELECTRICAL DETAILS

FIRE ALARM PLANS
FA-1 FIRE ALARM SCHEDULES
FA-2 FIRE ALARM PLAN
FA-4 FIRE ALARM DETAILS

PHOTOVOLTAIC PLANS
PV-1 PHOTOVOLTAIC THREE-LINE DIAGRAM
PV-2 PHOTOVOLTAIC PLAN
PV-3 PHOTOVOLTAIC CUTSHEETS

TECHNOLOGY PLANS
T-1 TECHNOLOGY SCHEDULES
T-2 TECHNOLOGY PLANS
T-3 TECHNOLOGY PLAN - FIRST FLOOR
T-3.1 TECHNOLOGY PLAN - SECOND FLOOR
T-4 TECHNOLOGY DETAILS

PROJECT LOCATION:
296 LOOP ROAD
HOOPA, CALIFORNIA

CODE COMPLIANCE DATA

GOVERNING CODES:
2022 CALIFORNIA BUILDING CODE
2022 CALIFORNIA MECHANICAL CODE
2022 CALIFORNIA PLUMBING CODE
2022 CALIFORNIA ELECTRIC CODE
2022 CALIFORNIA FIRE CODE (CFC)
STATE OF CALIFORNIA TITLE 24 ENERGY STANDARDS
2022 CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN)
2016 NFPA 13 AS AMENDED BY 2022 CFC & LOCAL FIRE JURISDICTION
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

CONSTRUCTION TYPE: V-B SPRINKLERED
OCCUPANCY: BUSINESS B
AREA RECAP:
<b> SITE AREA 58,100 S.F.
<b> DATA CENTER 5,100 S.F.
<B> WAREHOUSE 4,770 S.F.

DEFERRED SUBMITTALS: WOOD TRUSSES
FIRE SPRINKLER SYSTEM

SPECIAL INSPECTIONS
REFER TO STRUCTURAL NOTES ON SHEET S0.1

DATA CENTER
FOR
HOOPA VALLEY
PUBLIC UTILITIES
DISTRICT
296 LOOP ROAD
HOOPA, CALIFORNIA
TRIBAL TRACT #561-TR3

LICENSED ARCHITECT
THOMAS BOND
C-26209
RENEWAL DATE: JUNE 30, 2026
STATE OF CALIFORNIA

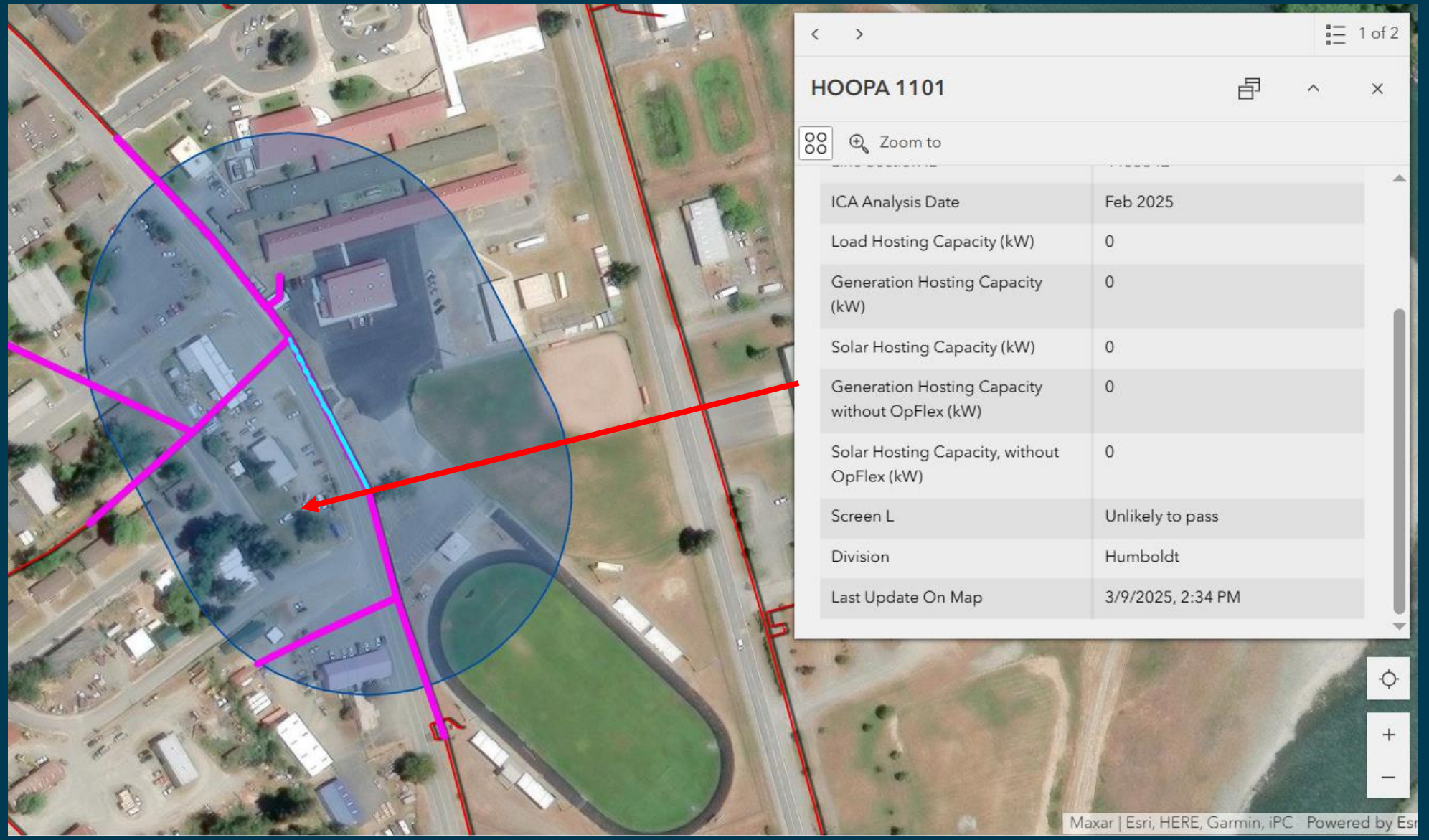
tba
Thomas Bond & Associates
5432 Cummings Road
Eureka, California 95503
707.442.1728 Office
707.362.1113 Cell

PROJECT NUMBER : 196
SCALE : AS NOTED
DRAWING DATE : Feb 17, 2026
DRAWN BY : DAN BRADEN

DRAWING DESCRIPTION
TITLE SHEET

DRAWING NUMBER
A0.1

- Years of work required for project for design/permitting, prior to application submission
- Unable to submit an application for new service until design is complete
- Unanticipated new requirements for application deliverables
- Needs process for consultation for upcoming projects



Grid Resource Integration Portal

In our region, it shows no hosting capacity for new loads

RULEMAKING 21-06-017

- Service Territory Community Engagement Plan
- Plan must address equity in the Distribution Planning Process
- Track metrics to evaluate equity in utility distributions planning
- Include Tribal Nations in the equitable planning process
- Utilize data to shape local energy needs

TRIBAL, STATE & IOU PARTNERSHIPS

Through strong partnerships and collaboration, Tribes, Investor-Owned Utilities (IOUs), and the State can work together to modernize grid infrastructure, streamline processes, and uphold tribal sovereignty. By fostering mutual respect, open communication, and shared goals, we can ensure equitable energy solutions that enhance reliability, resilience, and sustainability for our communities.

TSE'DIYA!

LINNEA JACKSON, HVPUD GM
(530) 625-4543
GM@HOOPAVALLEYPUD.COM

Stakeholder Presentations

Morongo Band of Mission Indians

Karen Woodard

Pending Loads Development Workshop

Karen Woodard, Realty Administrator
Morongo Realty Department
Morongo Band of Mission Indians

California Public Utilities Commission
March 14, 2025

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

Morongo's Land Base

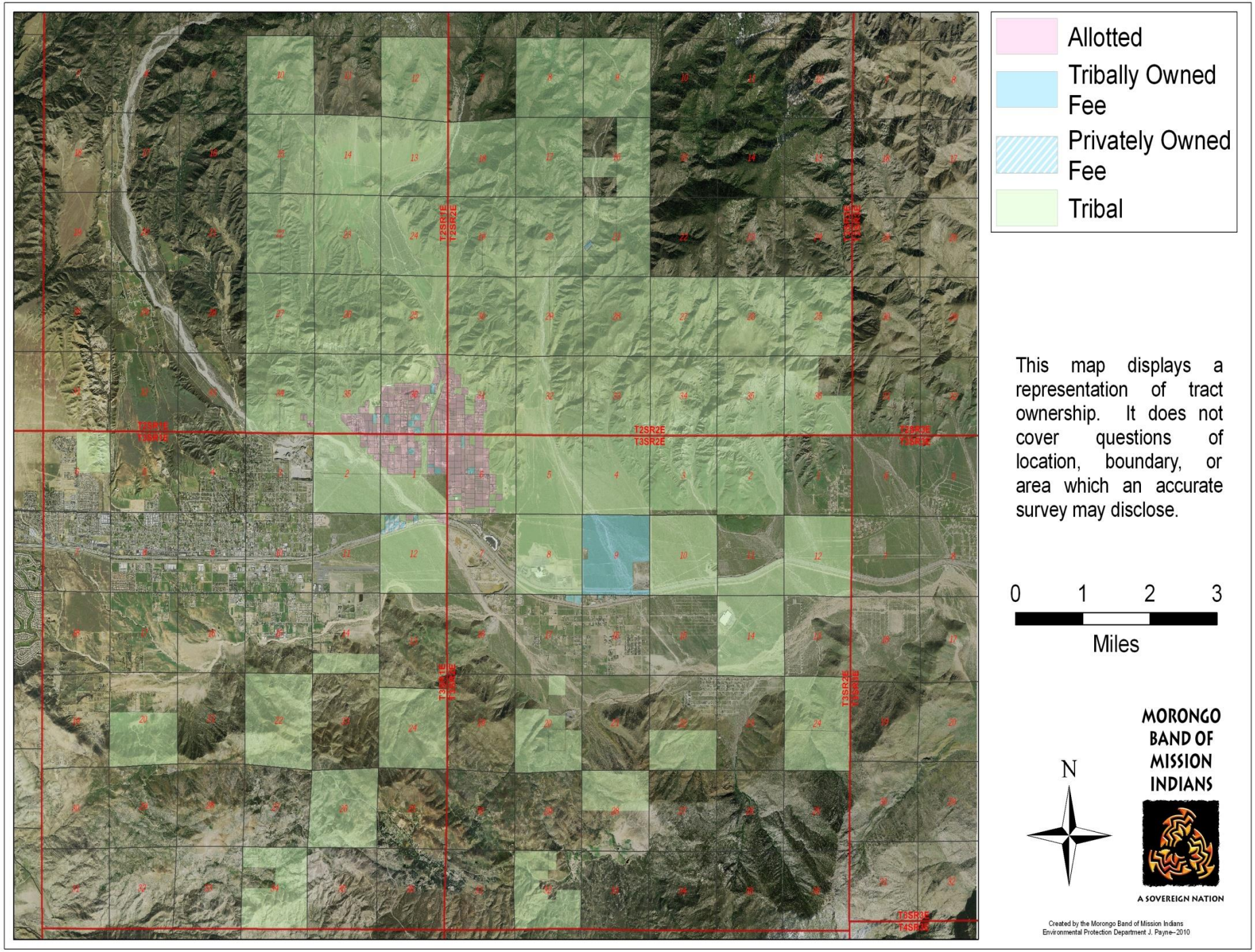
- The Reservation is comprised of 35,000 acres, a land area of approximately 54 square miles
- Includes tribal trust, allotments (individually owned in trust) individually owned fee and tribally owned fee.
- We are located in Southern CA, 90 mins east of LA and 20 mins west of Palm Springs.
- The Interstate 10 Freeway bisects the reservation lands and is a major corridor for goods movement, tourists and commuters.
- There are large transmission right of ways with SCE and So Cal Gas, that traverse the reservation land.
- The electrical and gas transmission lines provide services to the Inland Empire and Los Angeles County.

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION



History

- For many, many, years the Tribe was at the end of the circuit and experienced many outages and the last to be energized during major outages.
- There was no redundant power options until 2009/2010, SCE added an electrical line from the Cabazon Substation.
- As Tribal Housing was being constructed, establishing utilities could take 2 years or more, many homes while completed, sat empty until utilities were energized.
- Economic Development was impacted, many projects were built to the nearest utility connection, which may have not been the best placement.
- Tribal Enterprises had to depend on generators
- Tribes have a difficult time planning for future projects.

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

History

- Casino operations had to find alternative energy resources and have been islanded since 2004 using cogeneration for electricity, heating and cooling.
- Distribution systems were expanded project by project.
- It was clear that the Tribe needed to create an internal process to work with the utilities.
- Established internal application process for residential and commercial.
- Staff met with utility planners at the very early stages of a project.

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

Utility Process

- Title Status Report/Grant or Gift Deed for ownership purposes
- Aerials/surveys/plat maps
- Tribal Council review and approval
- Customer Project Information Sheet/Application for utility
- Service line agreement vs right of way
- Consents from neighboring owners
- Environmental Review

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

Utility Planning

- Tribal Utility Planning is difficult due to the reservations being so rural, therefore they are left out of the planning process.
- Involved in the near term of planning (1-3 years) if the Tribe had several projects or expansion plans and know the loads.
- Utility Companies are not interested in Tribe's future projections, they want the project to be near construction.
- Tribes struggle to get to the mid-term (3-6 years)of utility planning. A project may take 3 or 4 years, once it goes through all the approvals and review process internally.

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

Utility Planning

- For example, a ground lease for a retail project, must go through negotiations between the parties, Tribal Membership must approve via a ballot measure (internal voting process). This could take 12 to 18 months.
- Once approved the Lessee has most likely been engineering and designing the project for several months, and is ready to break ground ASAP, without knowing if the power needs are available to energize the project.
- Electric Company is not aware of the loads until the CPIS is filled out and submitted for the project.

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

Distribution Equity

- The West of Devers Upgrade provided an opportunity for the Tribe; by negotiating and renewing the Right of Ways with SCE, the Morongo Transmission LLC was established to give the tribe a platform to be more engaged and invest in needed upgrades to both transmission and distribution.
- SCE upgraded several circuits on and off the reservation, which has helped with housing needs however commercial opportunities, such as EV Chargers, Data Centers, Logistics Warehouses, Renewable Energy opportunities has been a struggle due to the lack of electrical power in the area.
- Capacity is a concern; electrical infrastructure is already maxed out and will need many upgrades to accommodate future needs.

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

Distribution Equity

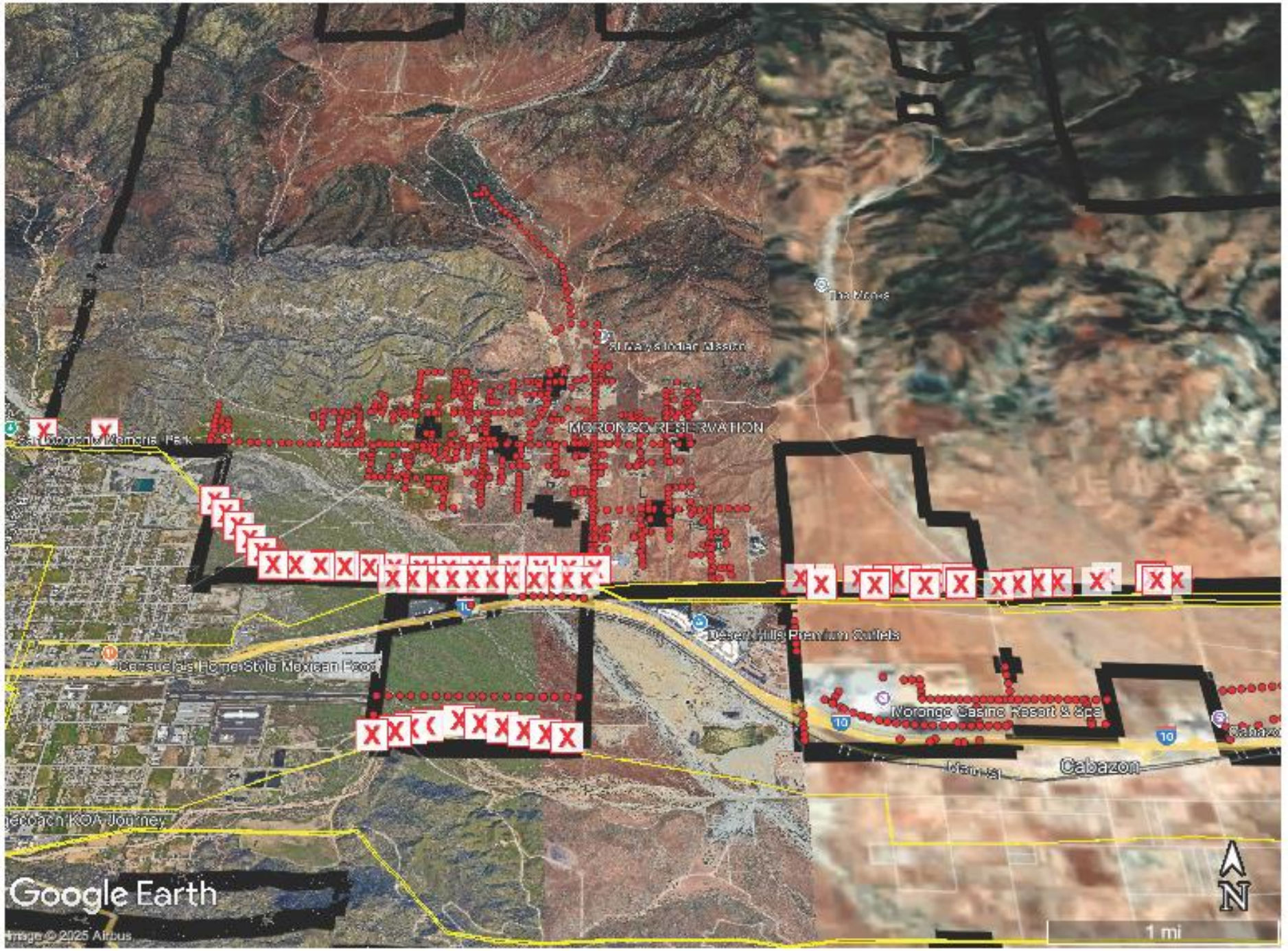
- Morongo is working on several strategies:
  - Master Energy Plan
  - Microgrid
  - Expanding Cogeneration
  - Special Utility Districts/tribally owned utility
  - Renewable Energy

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION



Energy Priorities

MBMI's Commitment to Energy Independence: MBMI is dedicated to launching new energy projects on its territory, aiming to enhance its self-reliance in energy and bolster economic stability over the long term.

Valuing Self-Governance and Autonomy: The Tribe greatly values its ability to govern itself. In response to current market fluctuations, the Tribe is taking steps to strengthen its independence. This includes developing sturdy infrastructure that serves the needs of its members and designing rate systems that position the Tribe favorably for entering lucrative and competitive commercial contracts

Focus on Reducing External Dependencies: A key long-term objective for MBMI is to lessen its reliance on outside groups, enhancing the Tribe's self-sufficiency. In pursuit of this aim, MBMI has established a Tribal Utility Authority, which is tasked with the creation of a Special Utility District.

MORONGO BAND OF MISSION INDIANS

A SOVEREIGN NATION

Stakeholder Presentations

Terawatt Infrastructure

Jason Berry

Full-Stack EV Fleet Charging Developer

Mission: We power electrified fleets with the most reliable network of charging solutions.

1. **Real Estate**
   Terawatt Owned
2. **Development**
   Entitlement, Design, Permits
3. **Design and Construction**
   Terawatt designs and constructs
4. **Operations**
   Terawatt develops it own charge management system (CMS), integrates with EVSE, on-site generation, storage, and maintains equipment.

Terawatt Portfolio:

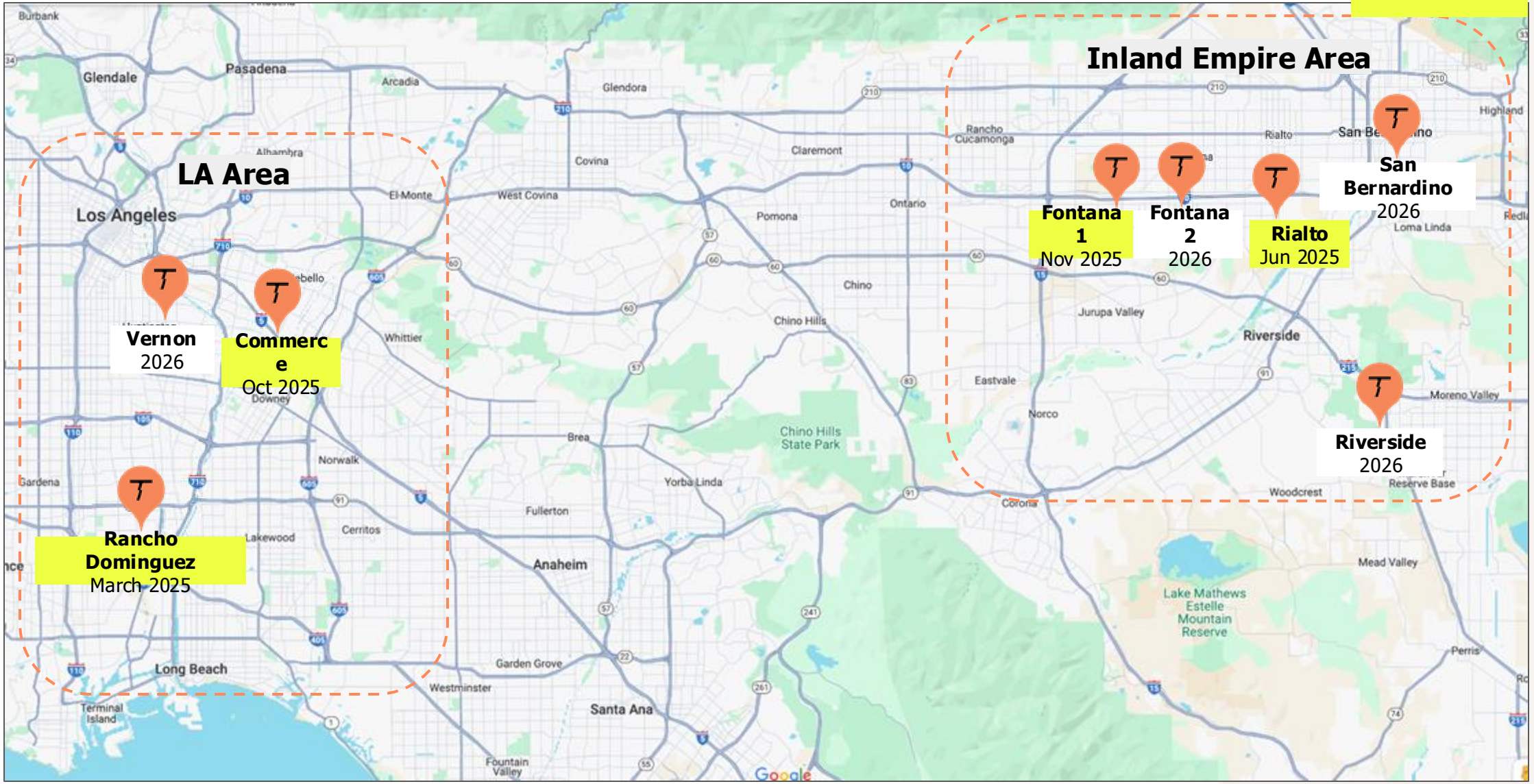
Locations:

- 30+ properties in 19 states
- 20+ sites under development in CA and other states (150+MW)
- Private Charging Depots with focus on Fleets
  - Light Duty (Ride Hailing)
  - Heavy Duty (Class 6-8)
- Metro Areas, Logistics, and Corridors (I-10 and I-5)

Power:

- DC Fast Charging Only
- HD Primary Distribution Service (10MW-25 MW)
- LD Secondary Service (3MW-6MW)
- Securing sufficient short & long term power will be a critical gating item.
  - Leverage Flex Load Programs, On-site Energy Mgmt, & DERs

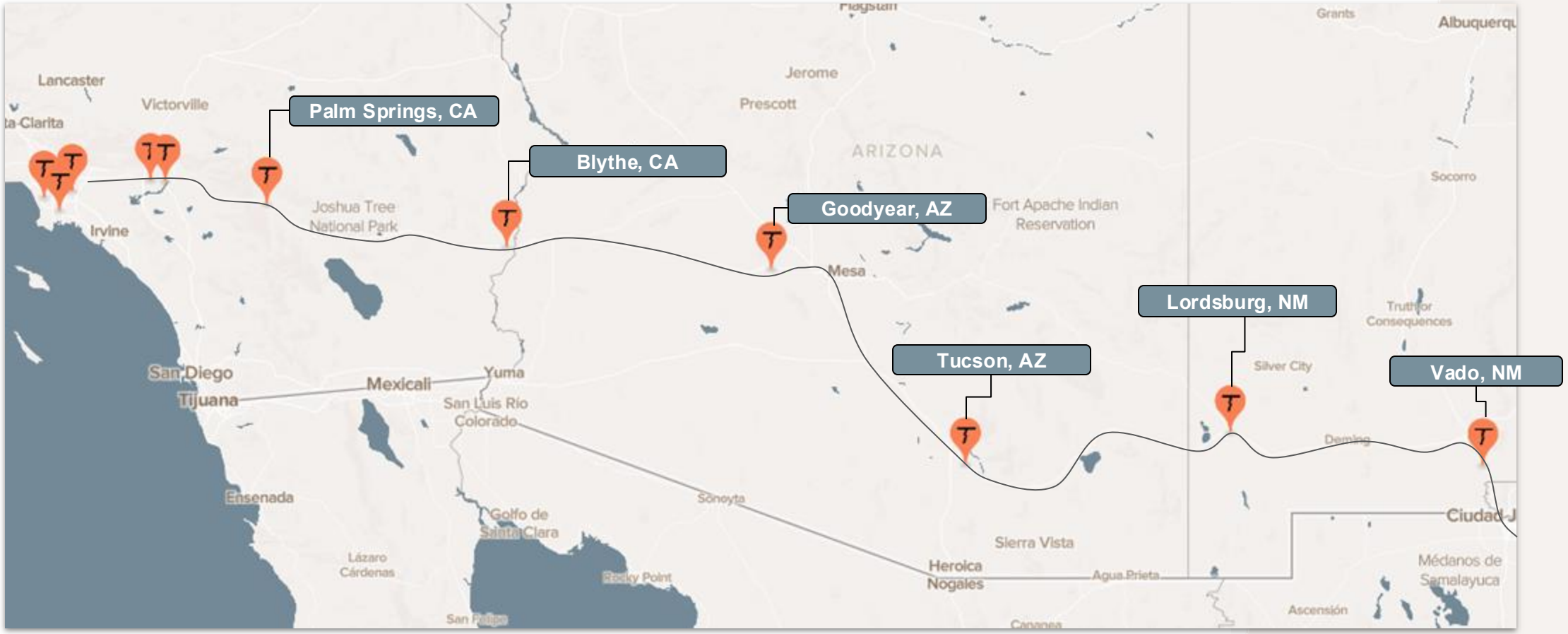
Terawatt Heavy-Duty Charging Sites in the LA Basin



Terawatt's I-10 corridor

The I-10 is one of the most **highly trafficked** US freight lanes, linking the nation's busiest ports to the second-busiest border crossing.

Terawatt **owns real estate** between LA and El Paso spaced ~150 miles apart, with MWs of power secured at every site.



Light Duty Fleets

- Existing Sites:
  - LAX site (3.5MW)
  - Downtown SF (6MW)
  - Serving Ride Share Market Customers
  - Fully Subscribed
- Multiple LD sites in development in multiple states

How We Work with Utilities

Preliminary Engineering Study

- Submit Load Request (During DD period)
- Consider Options for Service
- Phasing in Power
- Estimate Costs
- Flex Load Opportunities

Design Phase

- Submit Complete Application and Customer Design
- Review/Approve Preliminary Design
- MVSG Utility Review and Approval
- Review/Approve Final Utility Design

Construction Phase

- Utility Civil and Electrical Approvals
- Schedule Utility Constructions
- Energize Site

Ongoing Engagement

- Regulatory
- Billing Mgmt
- Rates
- Planning & Forecasting

What's the Best Method for Providing Pending Load Information to Utility?

- Survey Based
  - Direct Customer Engagement (Fleets and 3Ps
    - Hire a Contractor who understands the industry to survey Fleets and 3P Developers
    - Identify the use cases in detail, MD vs HD, MCS charging vs. overnight charging, public vs private
  - Define Reliability Criteria
  - Site Control, Permitting, Design, Deposits
  - Preliminary Studies, MoS, etc.

How to Address Treatment of Confidential Business Information?

- Provide Confidential Surveys
- Provide options for anonymizing data when reporting publicially

How Pending Loads Can Be Defined, or Safeguards Developed, to Reduce Any Ratepayer Risk?

- Understand your future Fleet customers really well: how they plan to scale and timing
- Understand 3P CaaS customers really well and their business model, planned investments, EVSE technology, assumed load factors, load profiles,
- Understand locational factors
- Clarify cost structure to customers and provide clear options for upfront investments, Allowances, etc.

Thank you

Open Discussion
Q&A

Next Steps

Energy Division

Next Steps

April 1, 2025: Utilities shall file a Pending Loads Implementation Workshop Report

May 1, 2025: informal comments from parties on the Pending Loads Workshop Report

June 30, 2025: The Utilities shall file a Tier 3 Advice Letter:

1. Proposing the method for developing the pending loads category and incorporating the category into the Distribution Planning Process;
2. Defining the types of information considered in the pending loads category and the general criteria applied to each category; and
3. Discussing the risk of pending loads that do not materialize and how to mitigate the risk.