Pending Loads Development Workshop

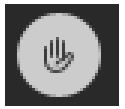
March 14, 2025

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!

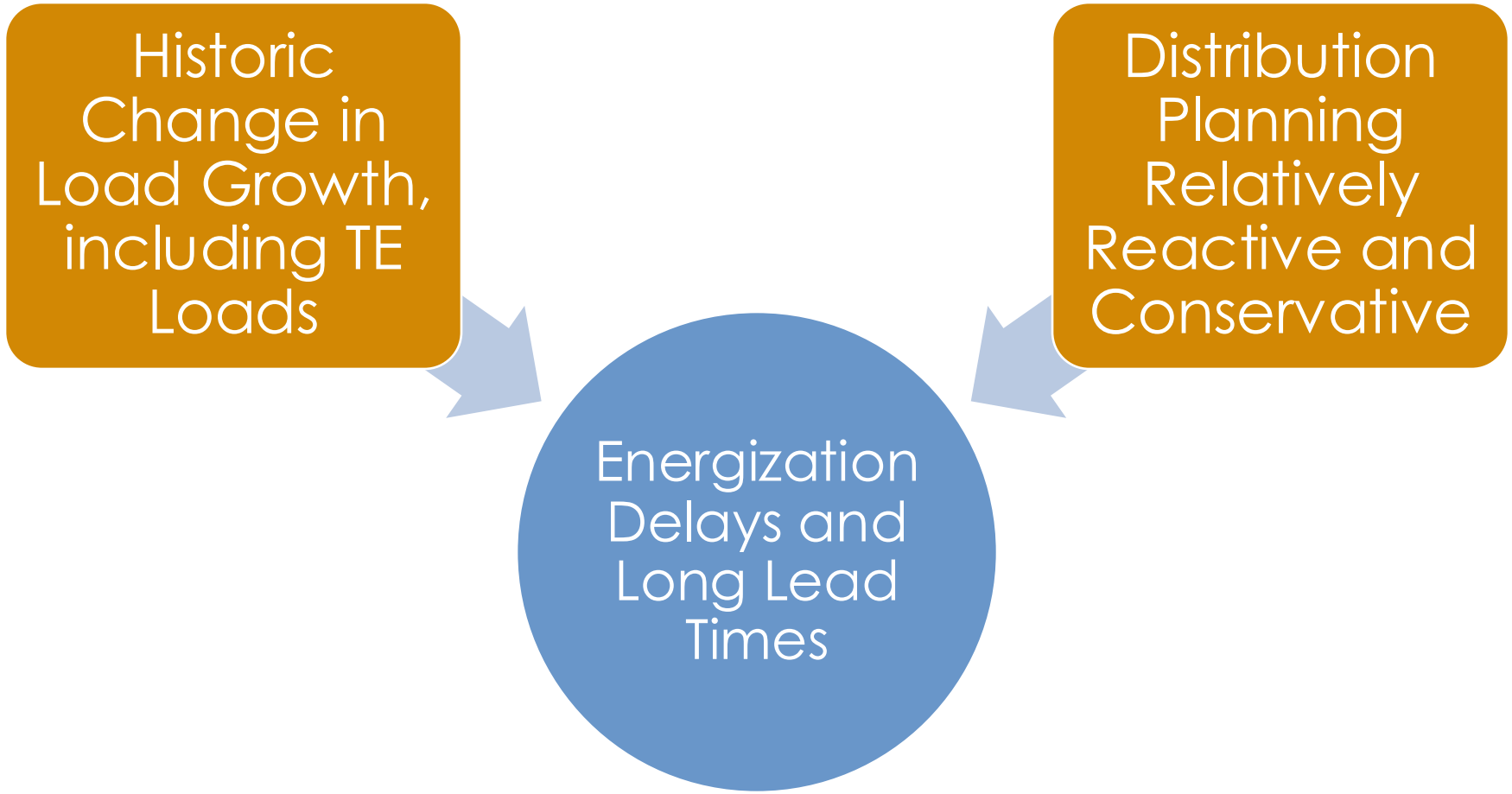
Opening Remarks

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

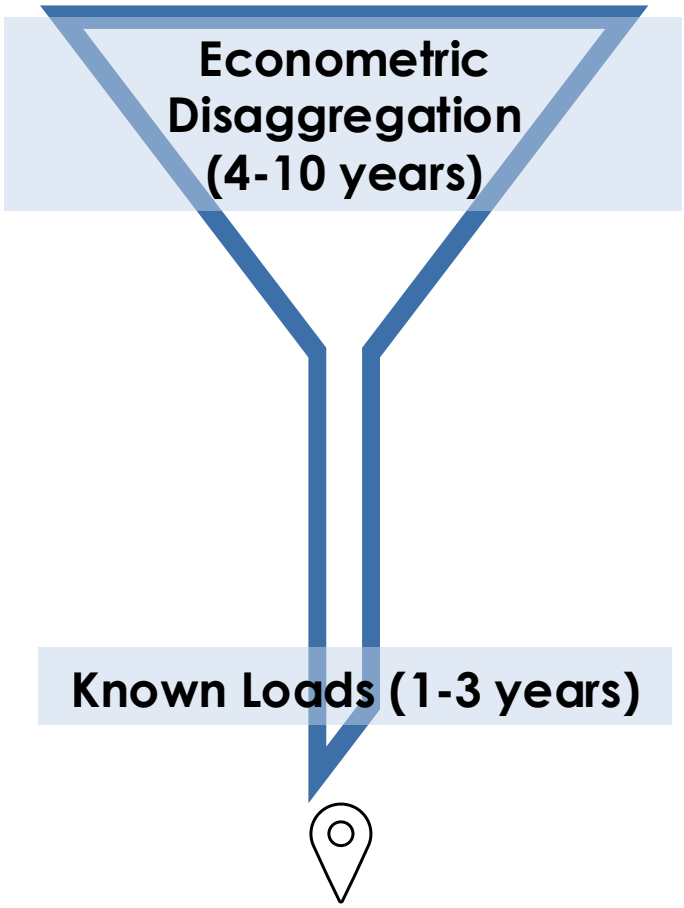
Used to pin down the location of top-down disaggregation using bottom-up data.

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

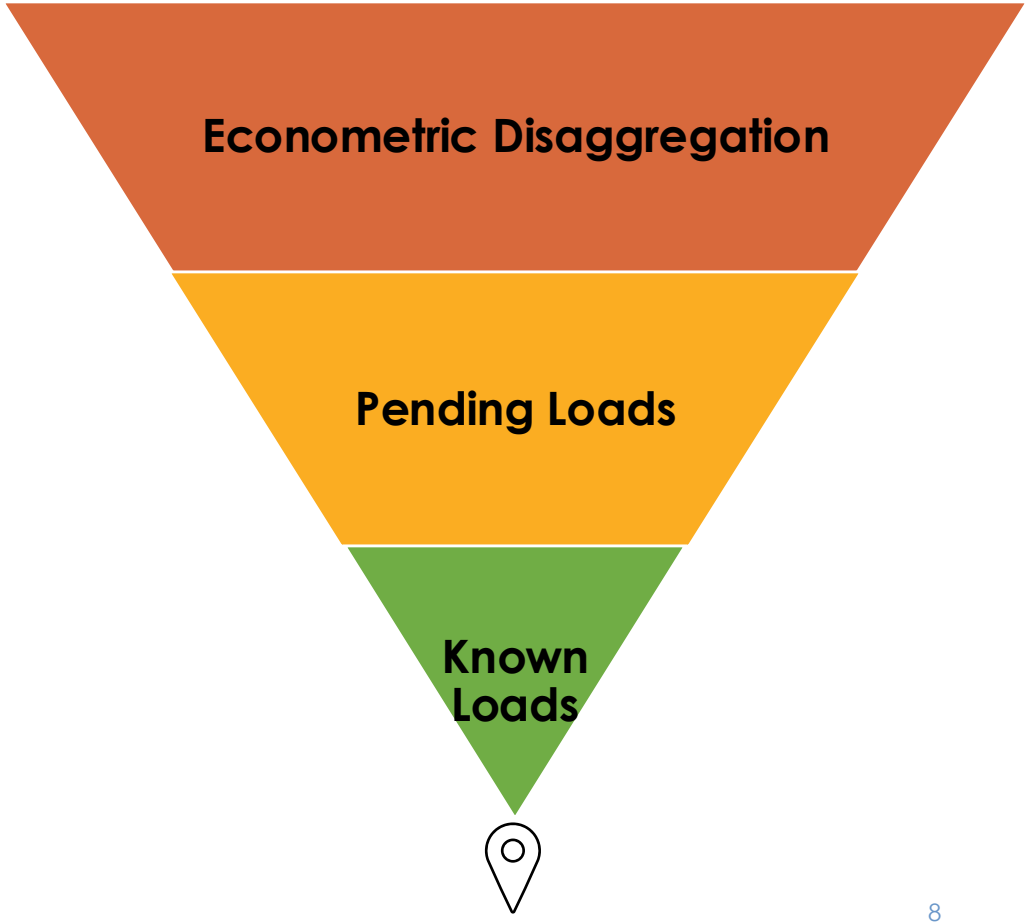
Mid-Term (3-6 years)
- General quantity
- General location

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.

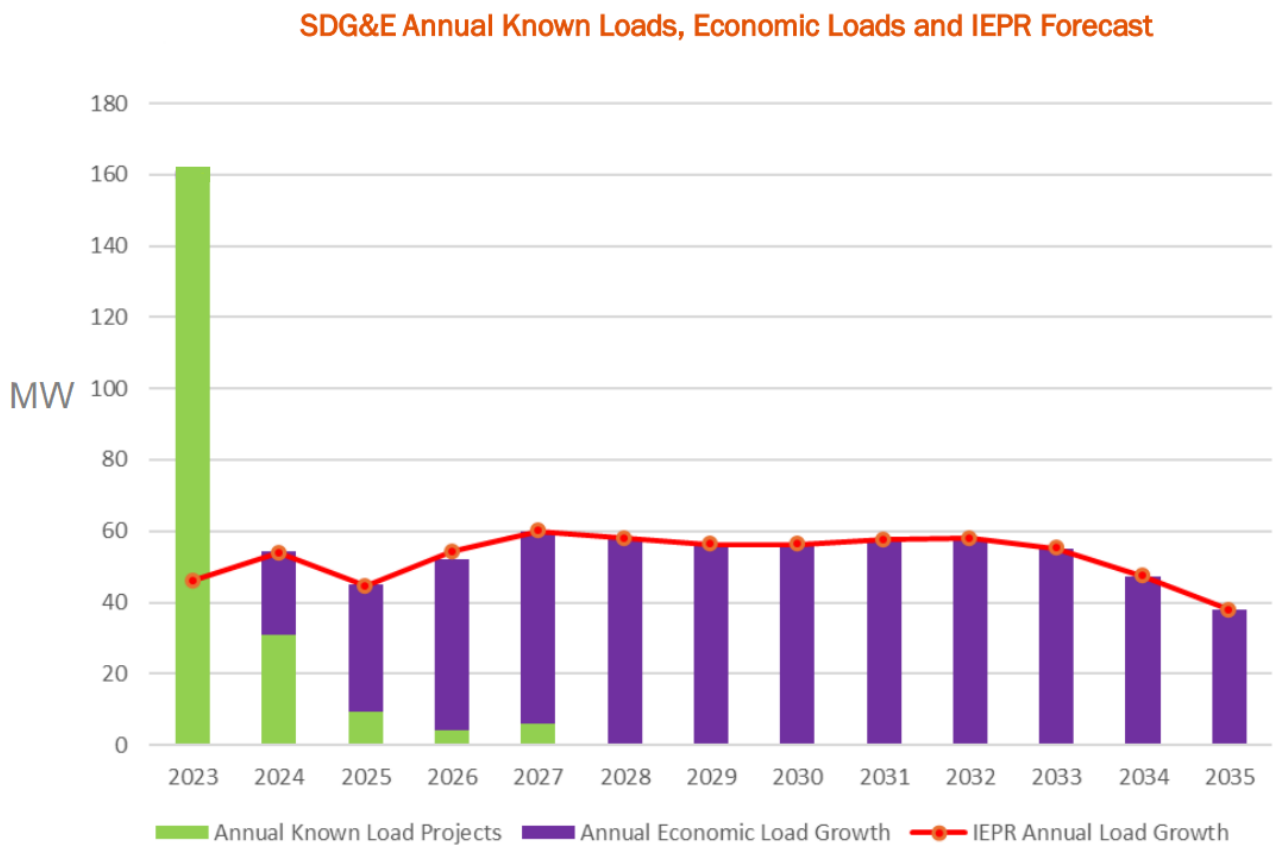
- Create a reliable projection of TE loads before receiving requests for energization and leverage this to create load projections.

<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.

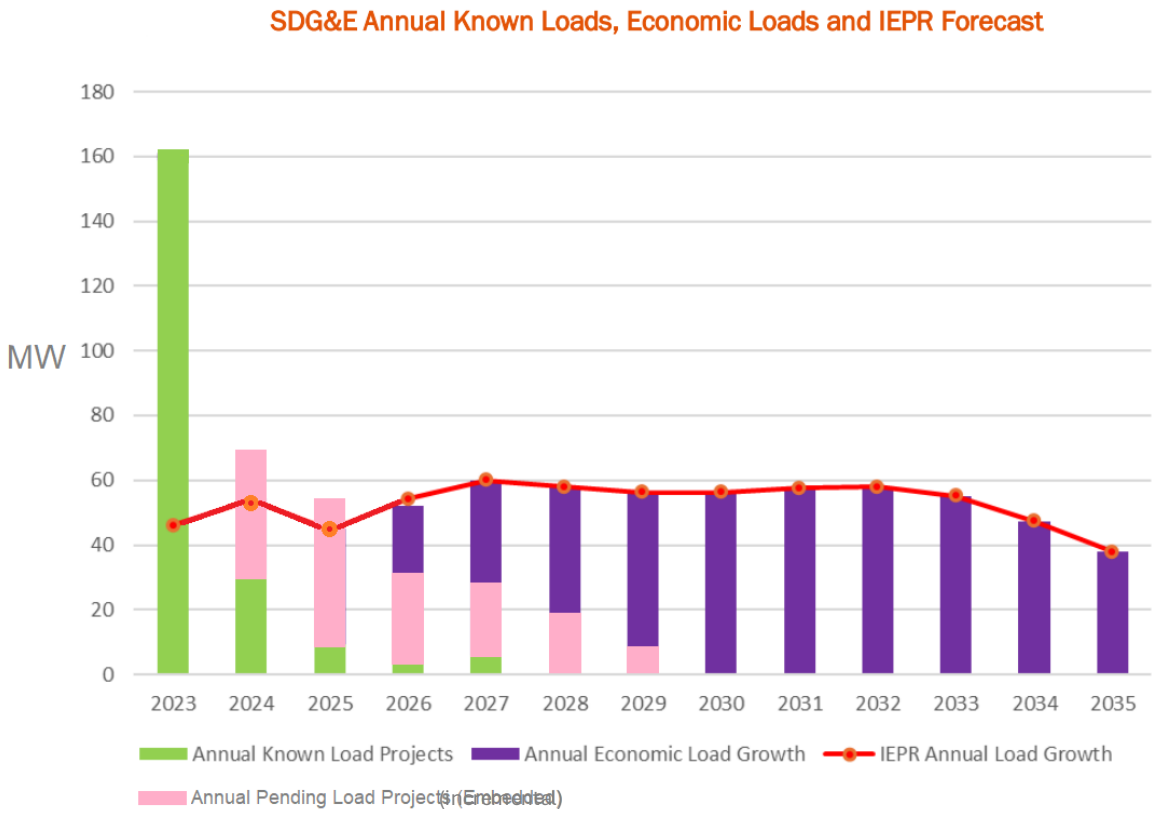
What does exceeding the IEPR mean?

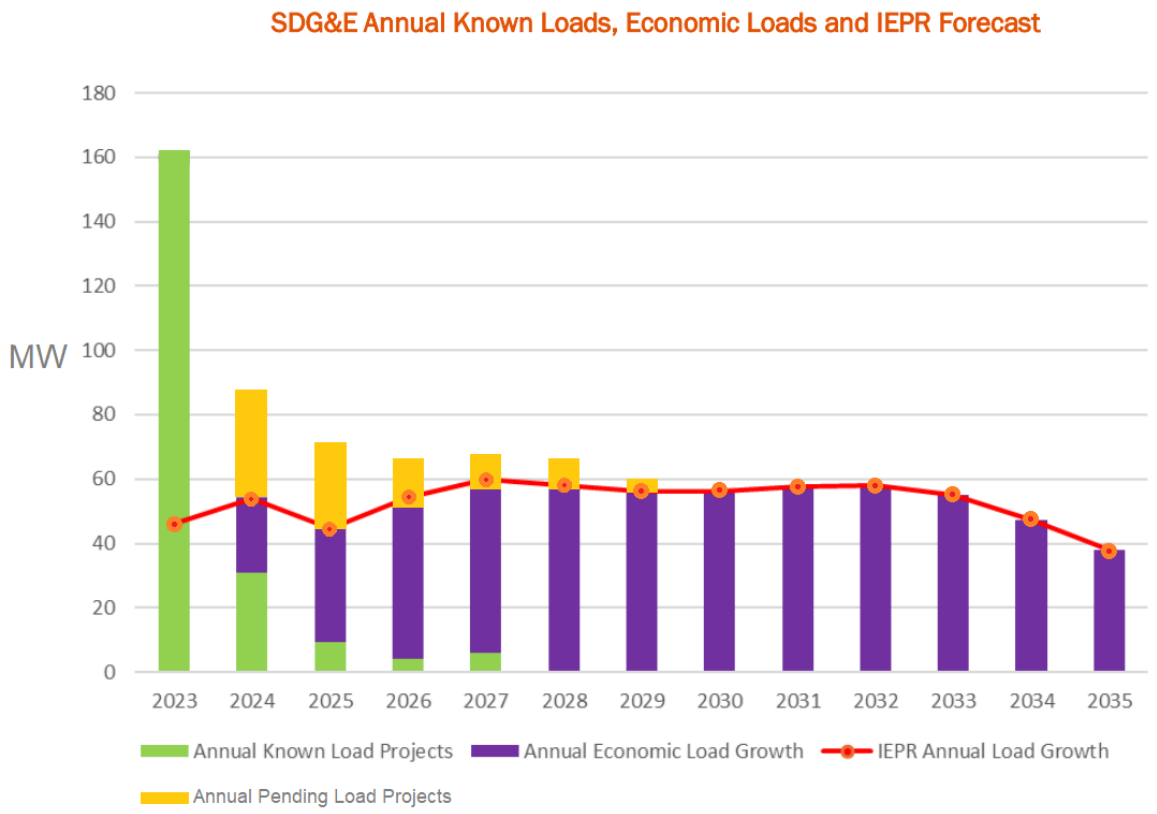


SDG&E forecast from 2024 IPE Post-DPAG Report

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

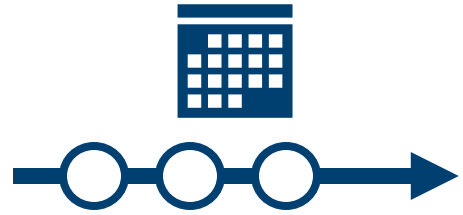
Transportation

Industrial (+Petroleum)

Multiple Fuels Evaluated

H_2

(hourly)

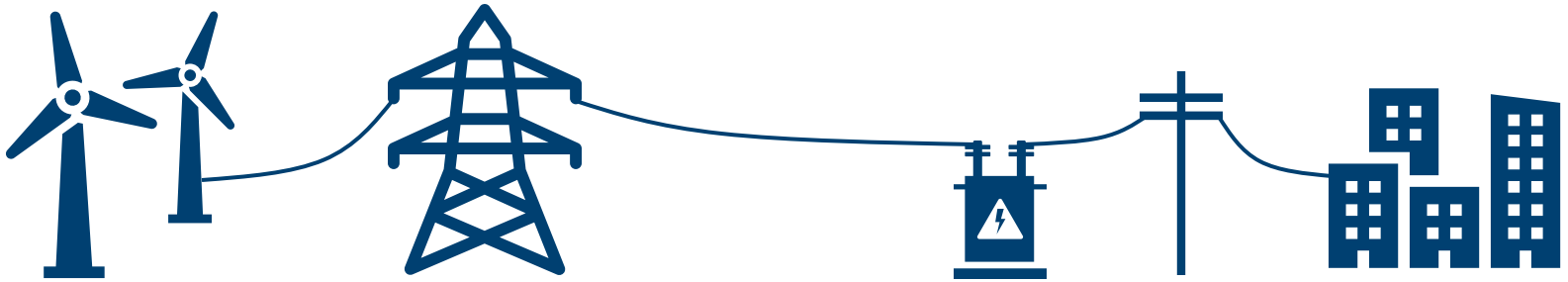


15 Year Outlook

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

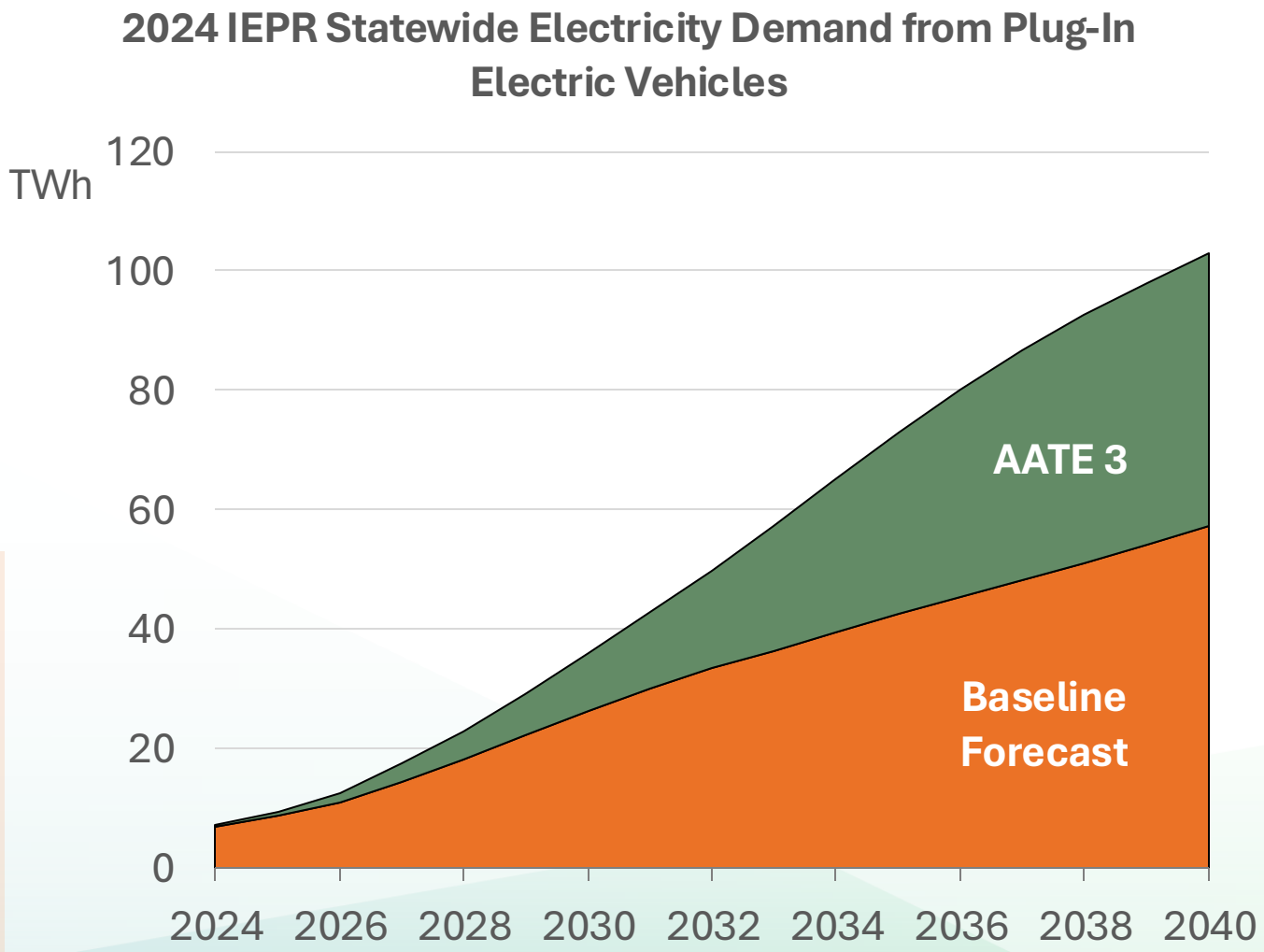
Annual TE Load Modifier Forecast

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

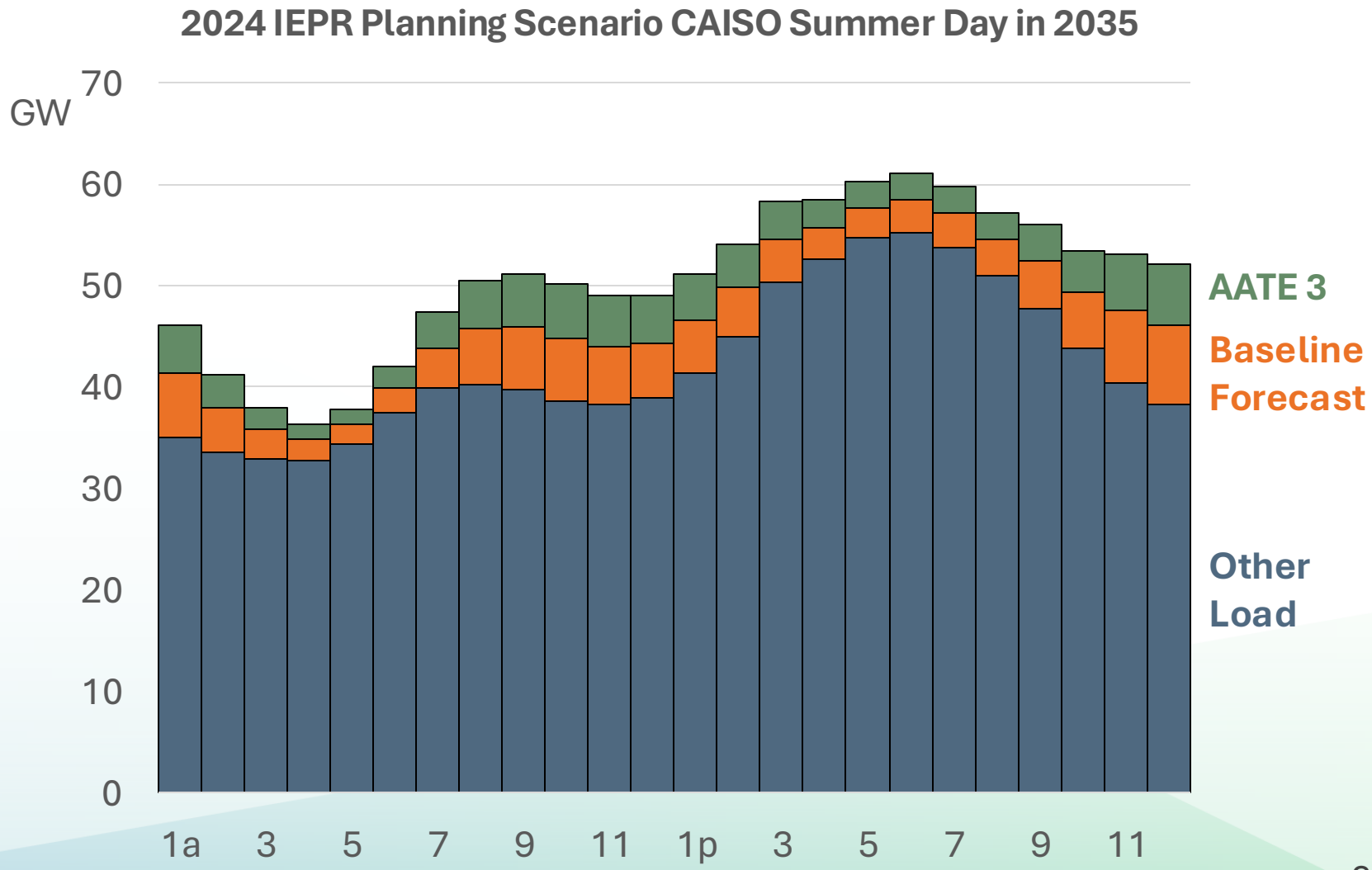
AATE Scenarios

- "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

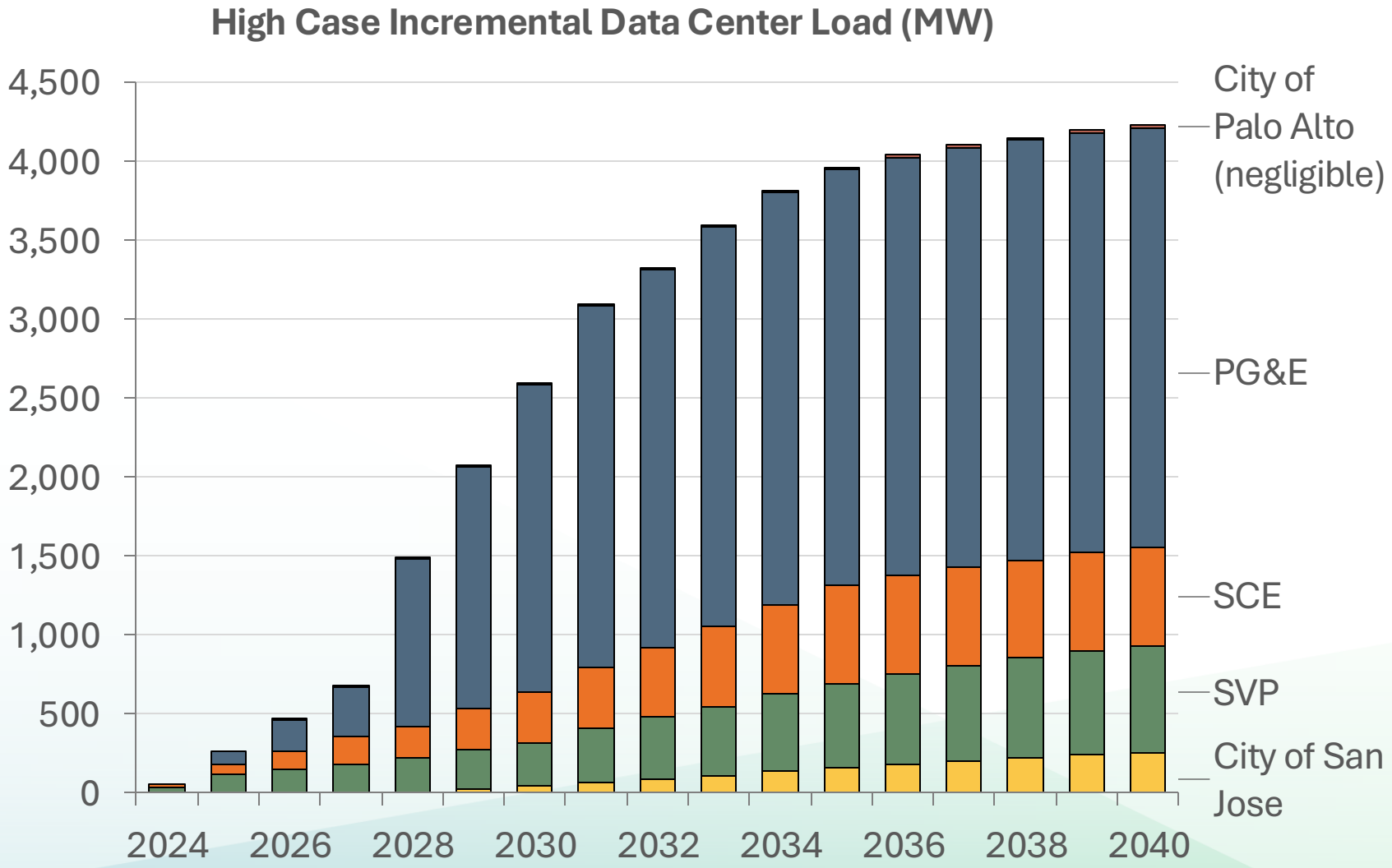
AAEE and AAFS

“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

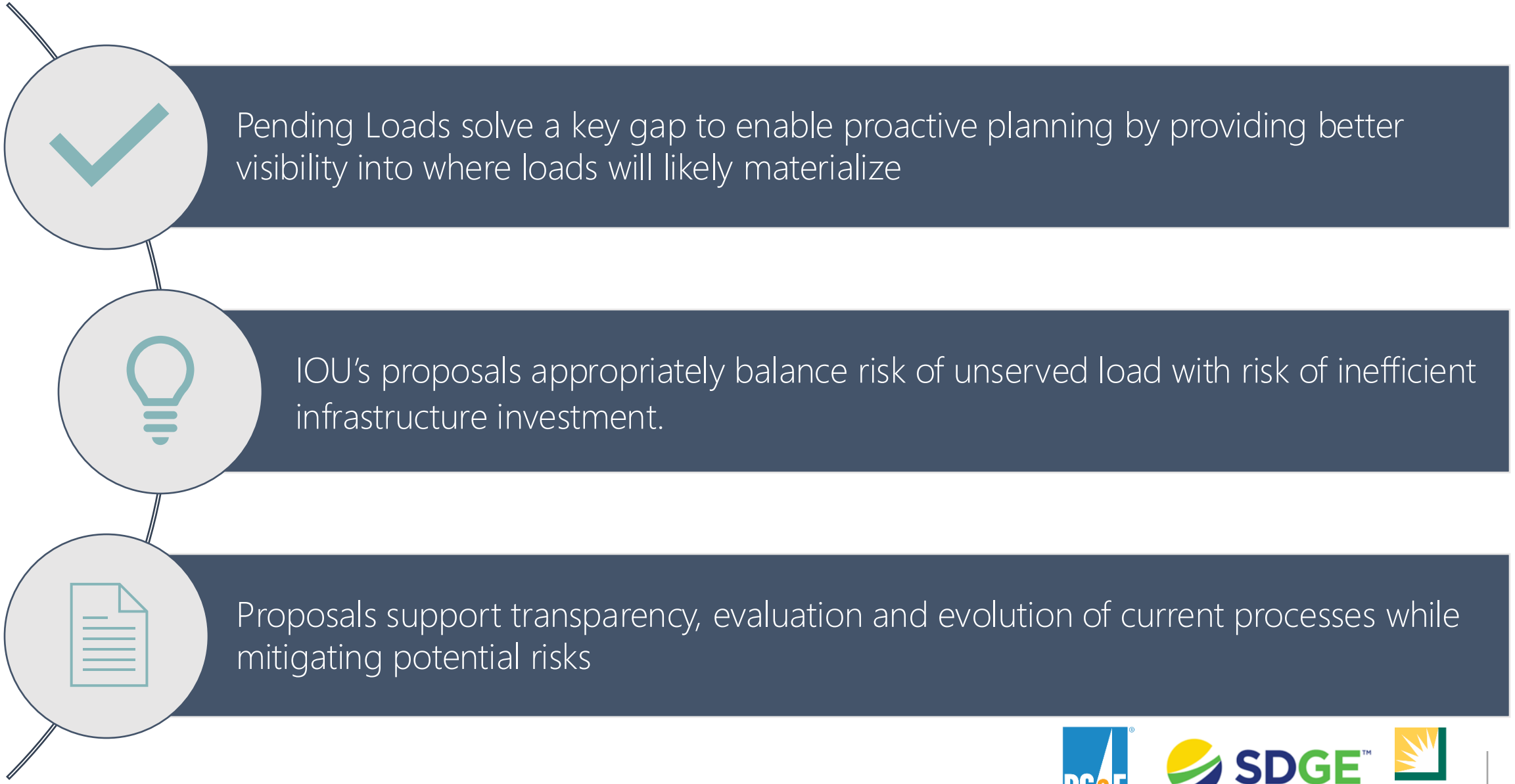
Joint Presentation by PG&E, SCE, and SDG&E

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

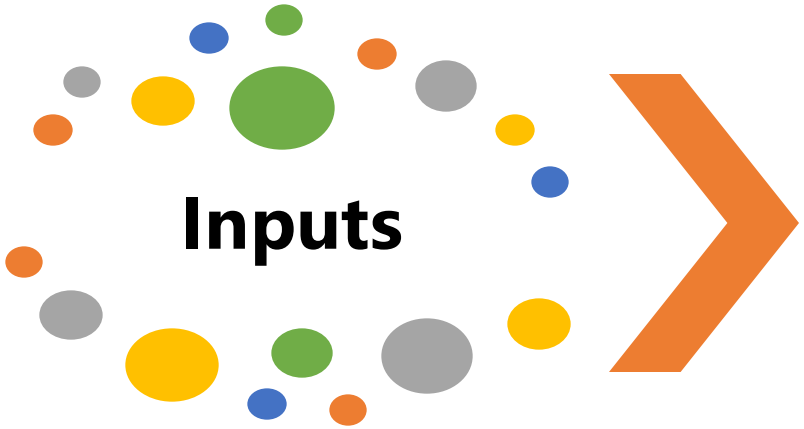
Commission Requirement	Proposal
The specific sources of information, at minimum, to inform the Pending Loads category	Bottoms-up forecasts of the IEPR load components (for example, utility-generated MD/HD forecasts).
Uses of Pending Load to inform the forecast and the investment plan	Pending Loads will 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



Process

Outputs

- 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)

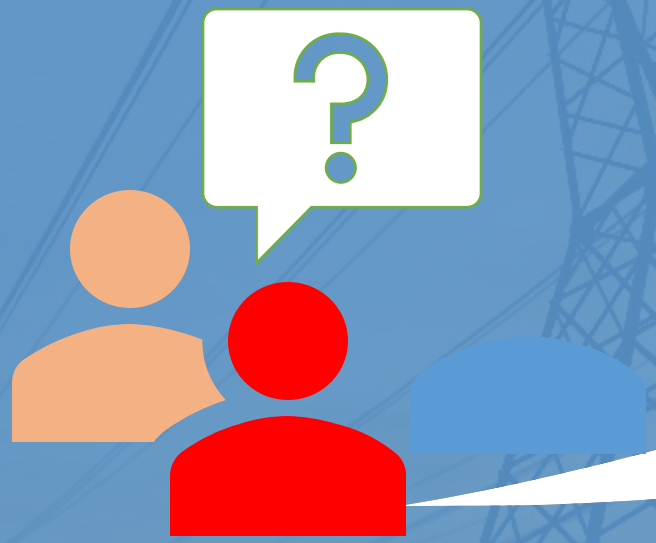
- Resource addition methodology uses a zonal approach with system-level IEPR load forecast as an input.
- Because IRP uses system-level IEPR load forecast, Pending Loads are not reflected in IRP.

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

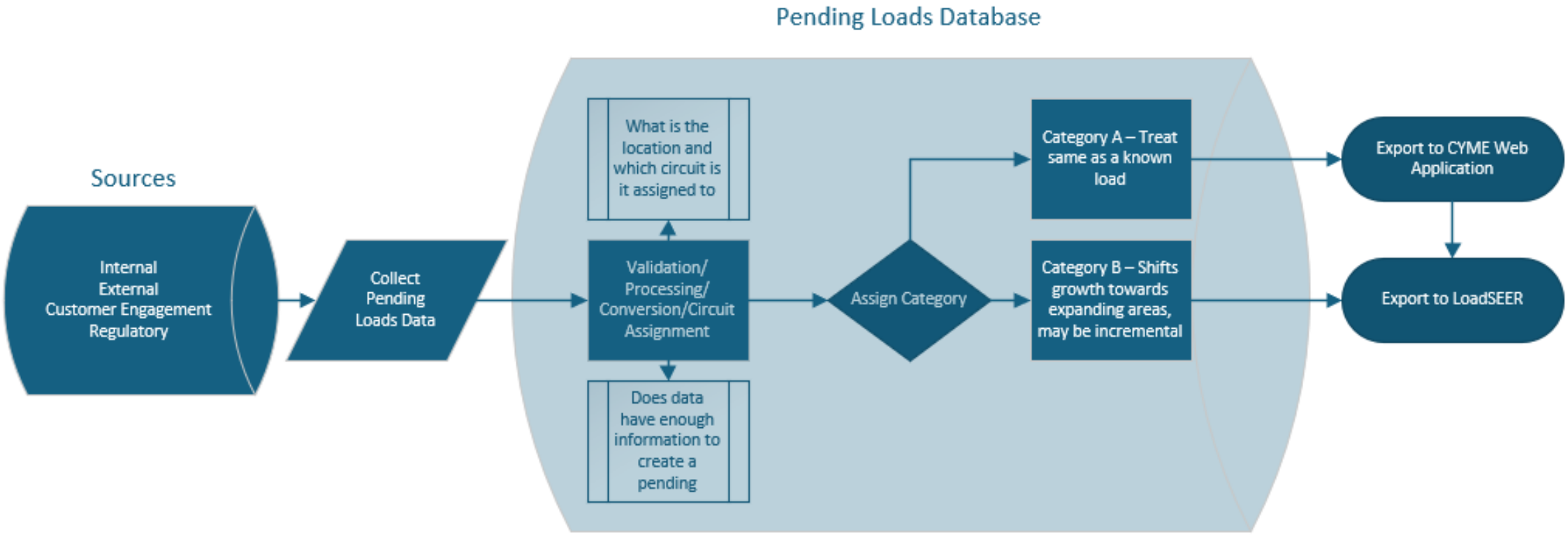
1) Collecting all existing sources of pending loads data
2) Assessing the data quality of existing pending load data
3) Evaluating how we use pending loads in our forecast in the current and previous cycles
4) Designing a data structure that automatically ingests pending load data from different sources
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?

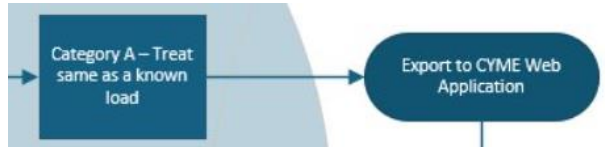
Pending loads data will come from multiple sources (Internal, External, Customer Survey, TEPP)

	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

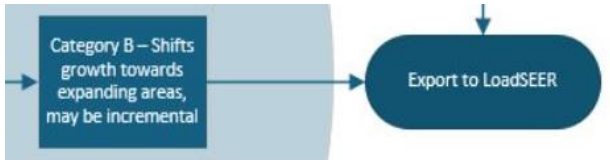


What happens to Category A Pending Loads that go into CYME?



- 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.

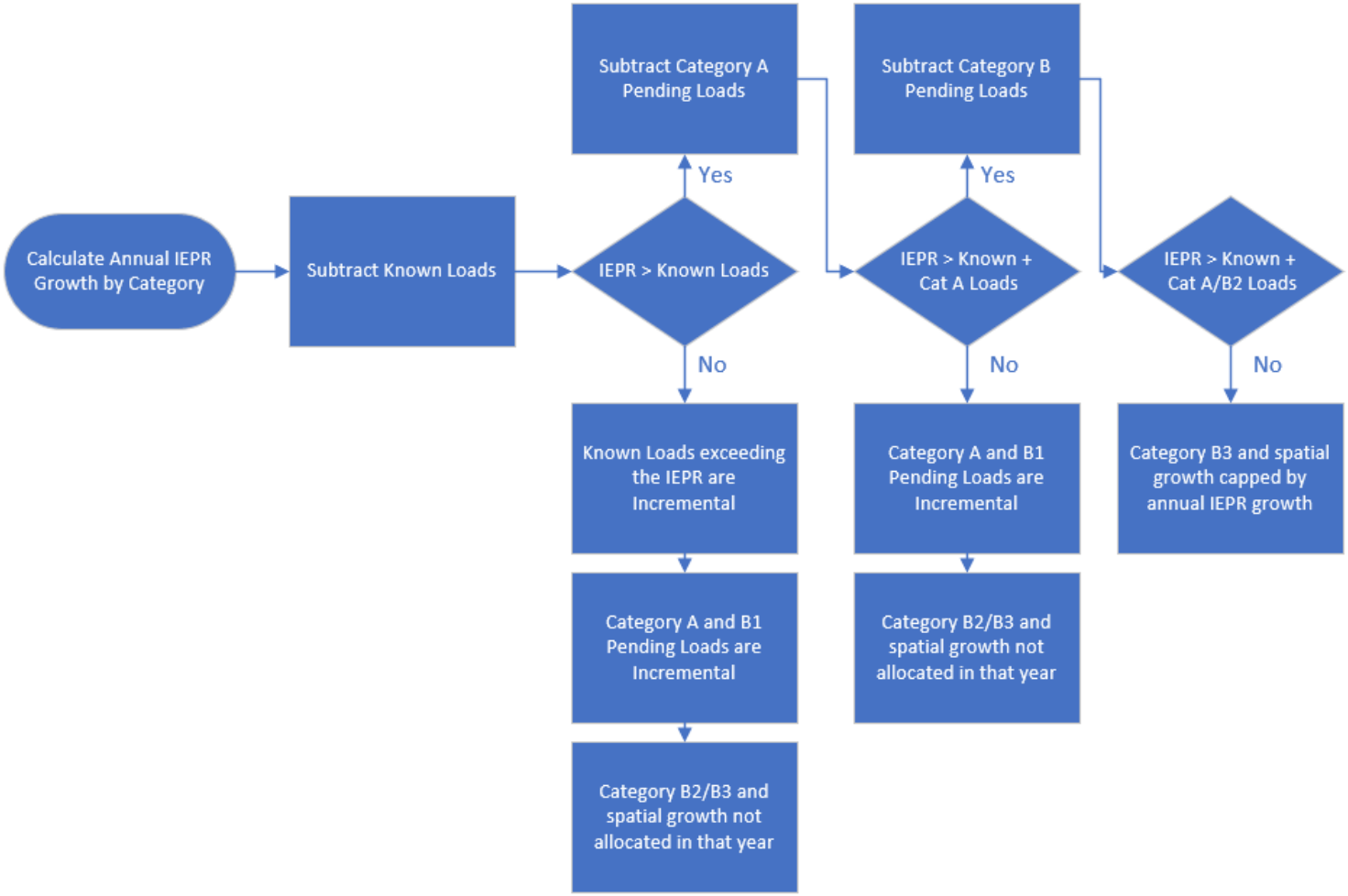
Applying Pending Loads categories in the base forecast

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

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.

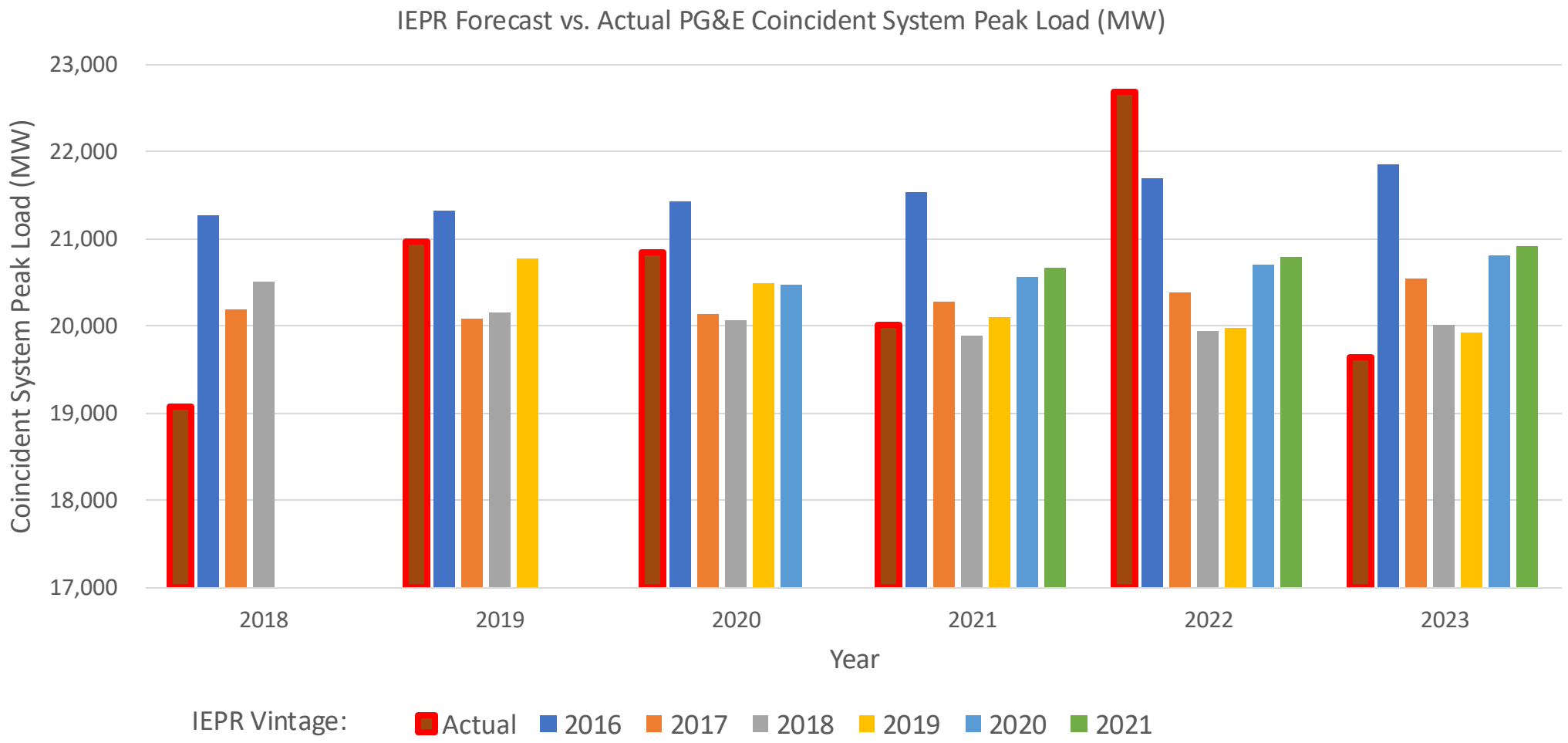
What we're thinking about

- 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.

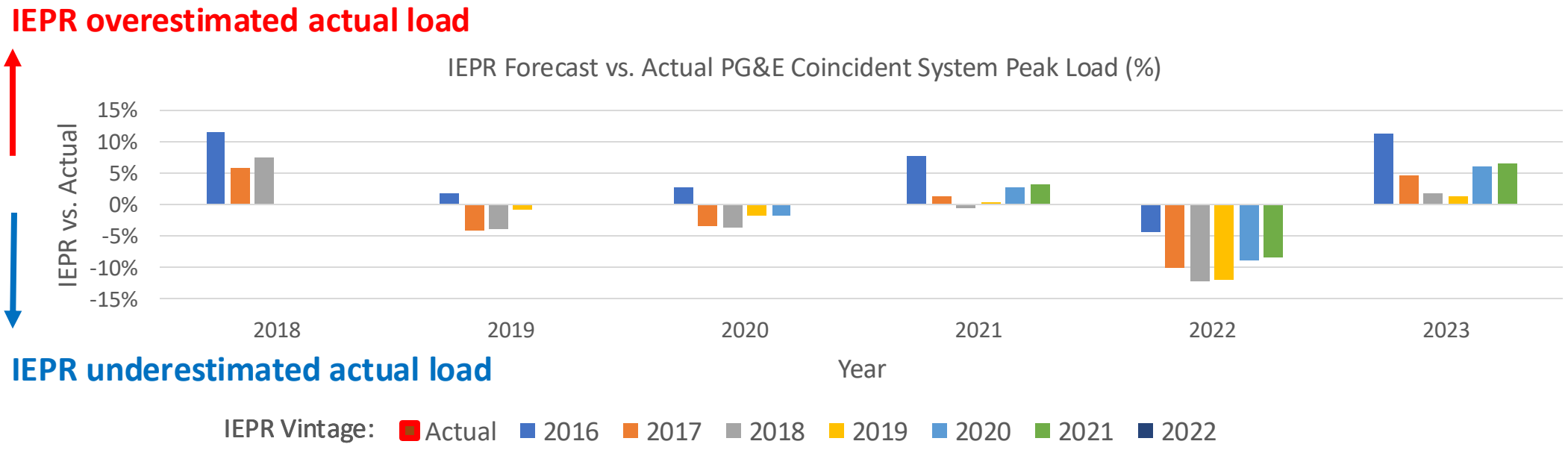
PG&E Comparison



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

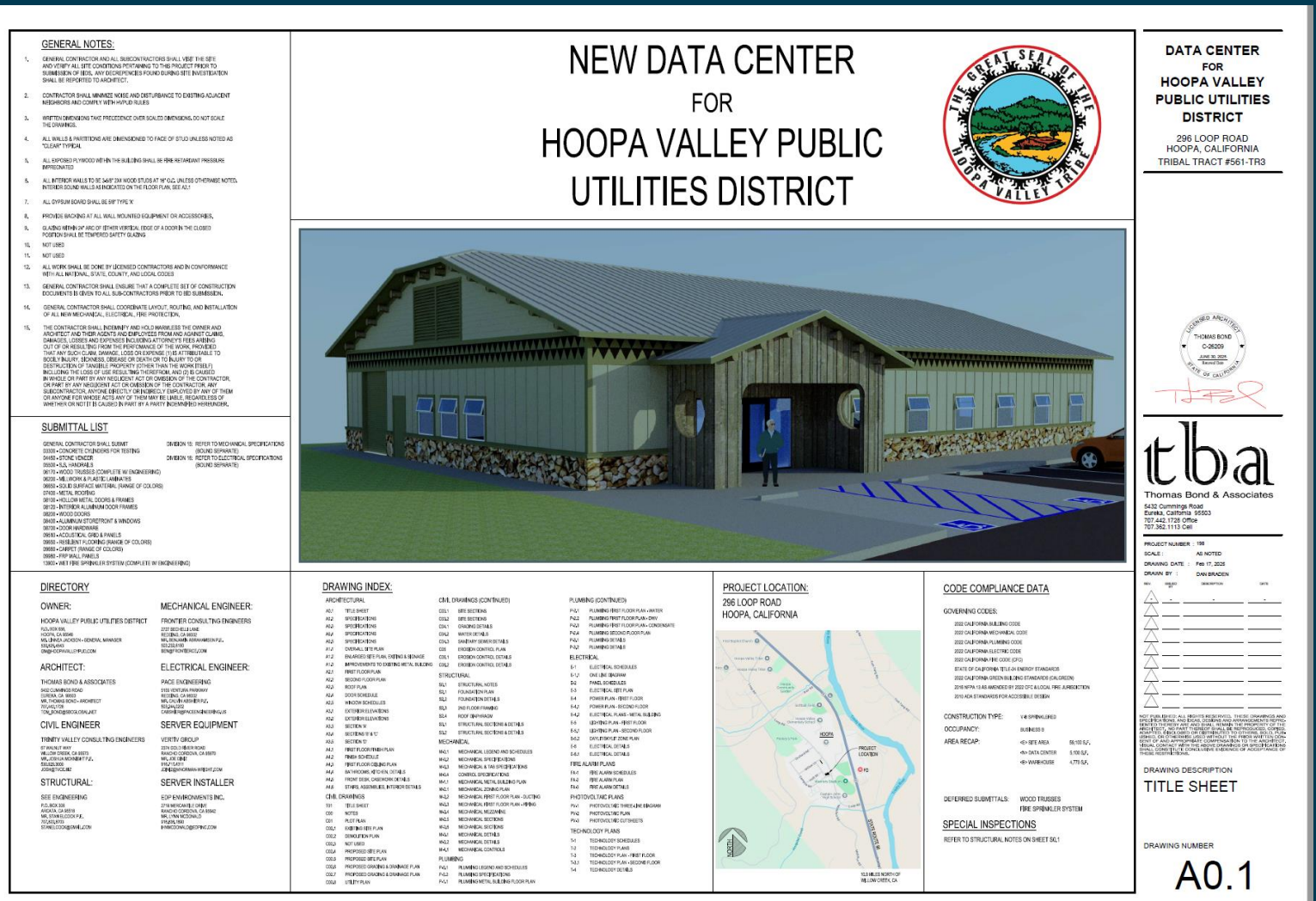
MARCH 14, 2025

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" 20# 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
09510 • 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)

NEW DATA CENTER
FOR
HOOPA VALLEY PUBLIC UTILITIES DISTRICT

DIRECTORY

OWNER:
HOOPA VALLEY PUBLIC UTILITIES DISTRICT
P.O. BOX 306
HOOPA, CA 95546
MS. LENEA JACKSON - GENERAL MANAGER
530.625.4383
GM@HOOPAVALLEYPUC.COM

ARCHITECT:
THOMAS BOND & ASSOCIATES
5432 CUMMINGS ROAD
EUREKA, CA 95503
MR. THOMAS BOND - ARCHITECT
707.442.1728
TOM_BOND@SBCGLOBAL.NET

CIVIL ENGINEER
TRINITY VALLEY CONSULTING ENGINEERS
67 WALNUT WAY
WILLOW CREEK, CA 95573
MR. JOSHUA MCKNIGHT P.E.
530.629.3005
JOSH@TVCE.NET

STRUCTURAL:
SEE ENGINEERING

MECHANICAL ENGINEER:
FRONTIER CONSULTING ENGINEERS
2727 SECO HILL LANE
REDDING, CA 96002
MR. BENJAMIN ABRAHAMSEN P.E.
530.226.0183
BEN@FRONTIERCC.COM

ELECTRICAL ENGINEER:
PACE ENGINEERING
5155 VENTURA PARKWAY
REDDING, CA 96002
MR. CALVIN ASHNER P.E.
530.241.2202
CASHNER@PACEENGINEERING.US

SERVER EQUIPMENT
VERITIV GROUP
2370 COLD SPRING ROAD
RANCHO CORDOVA, CA 95670
MS. JOE GINE
916.712.4777
JGINE@SHORMAN-WRIGHT.COM

SERVER INSTALLER
EDP ENVIRONMENTS INC.
2716 MERCANTILE DRIVE
RANCHO CORDOVA, CA 95742
MR. LYNN MCDONALD
916.635.1190
LYNNMCDONALD@EDPINC.COM

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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:
<e> SITE AREA 58,100 S.F.
<n> DATA CENTER 5,100 S.F.
<e> 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

MARK	ISSUED BY	DESCRIPTION	DATE
1	—	—	—
2	—	—	—
3	—	—	—
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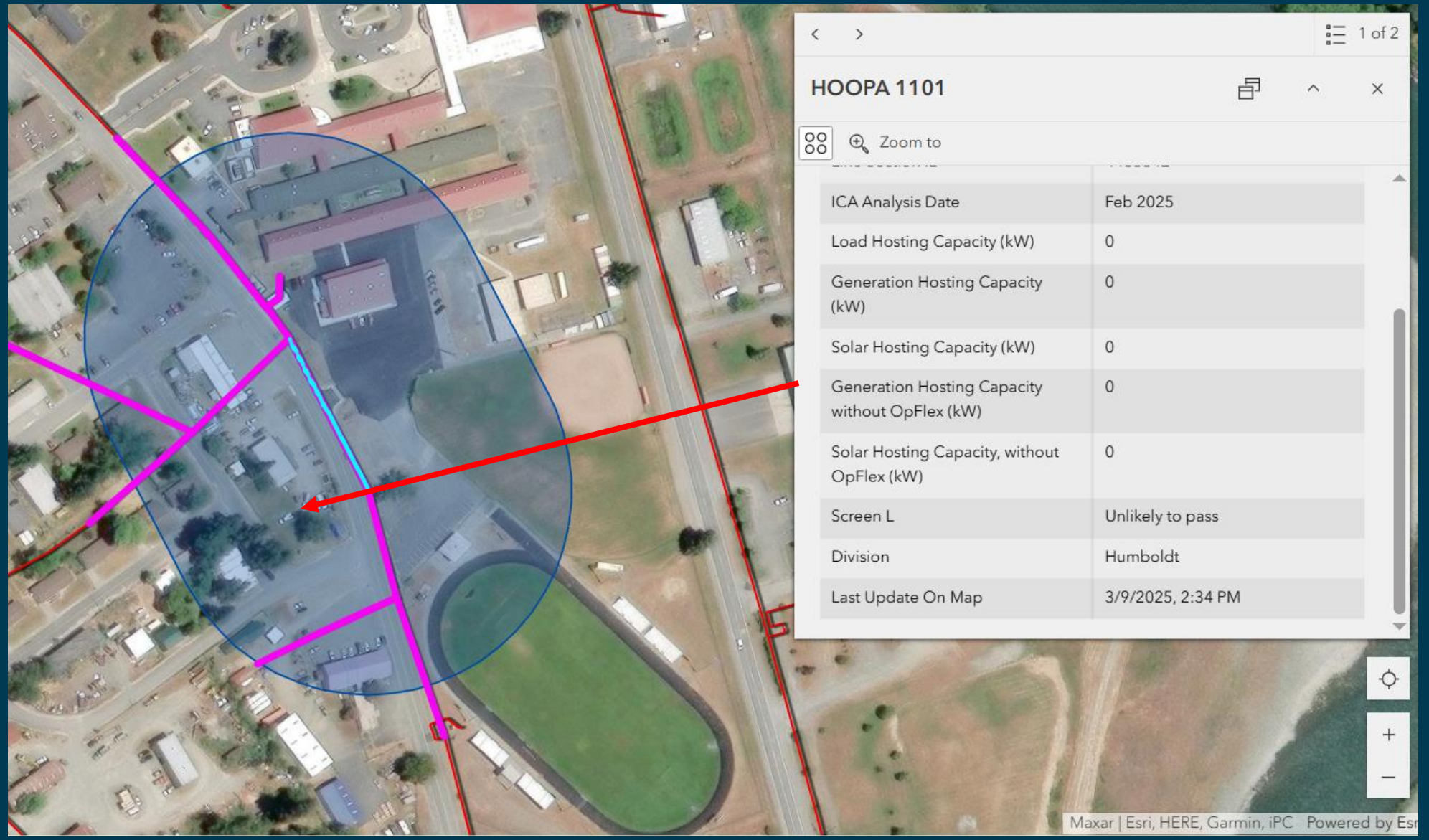
DRAWING DESCRIPTION
TITLE SHEET

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

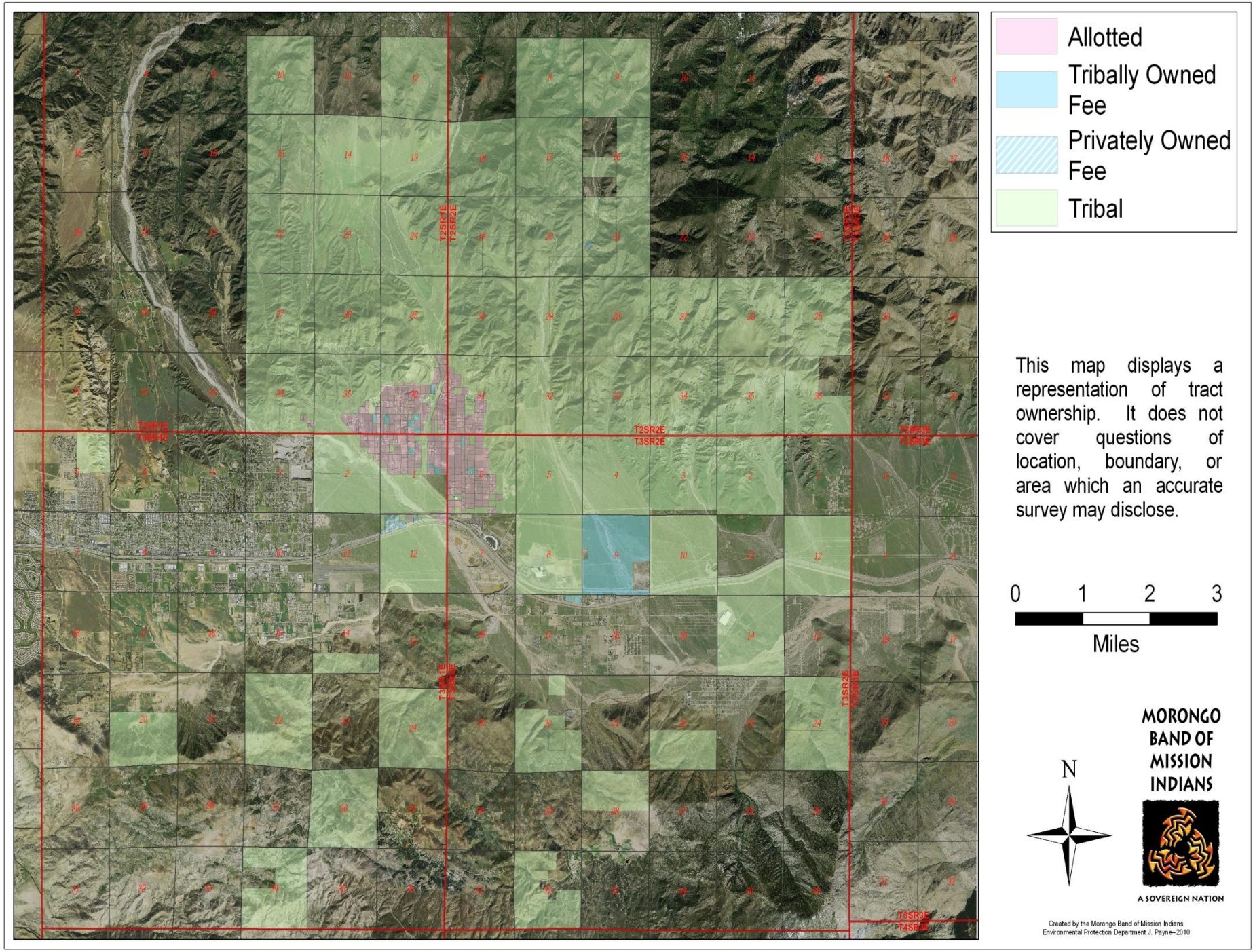
- The Reservation is comprised of 35,000 acres, a land area of approximately 54 square miles
- Includes tribal trust, allotments (individually owned in trust) individually owned fee and tribally owned fee.
- We are located in Southern CA, 90 mins east of LA and 20 mins west of Palm Springs.
- The Interstate 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

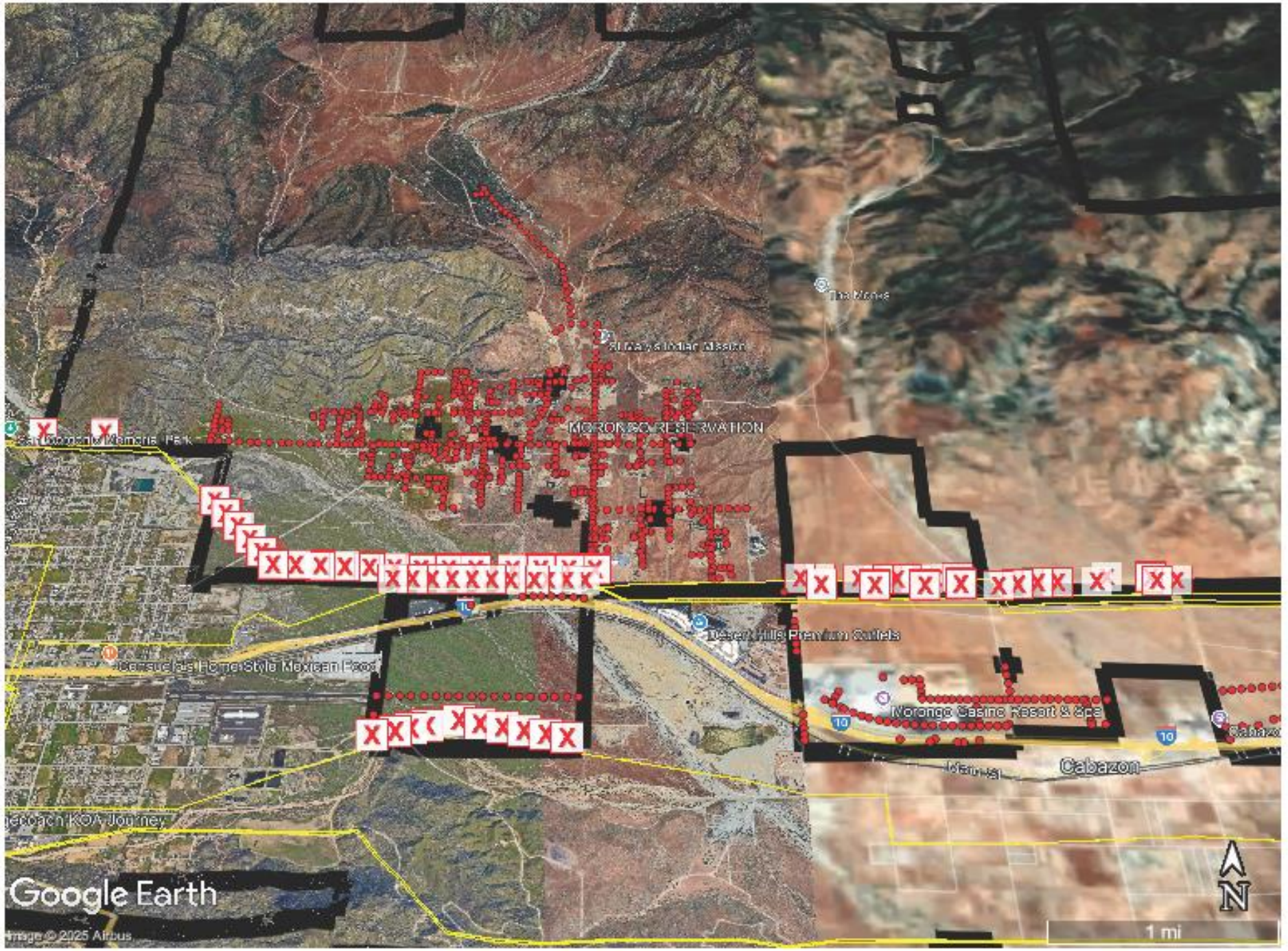
- Morongo is working on several strategies:
  - Master Energy Plan
  - Microgrid
  - Expanding Cogeneration
  - Special Utility Districts/tribally owned utility
  - Renewable Energy

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:

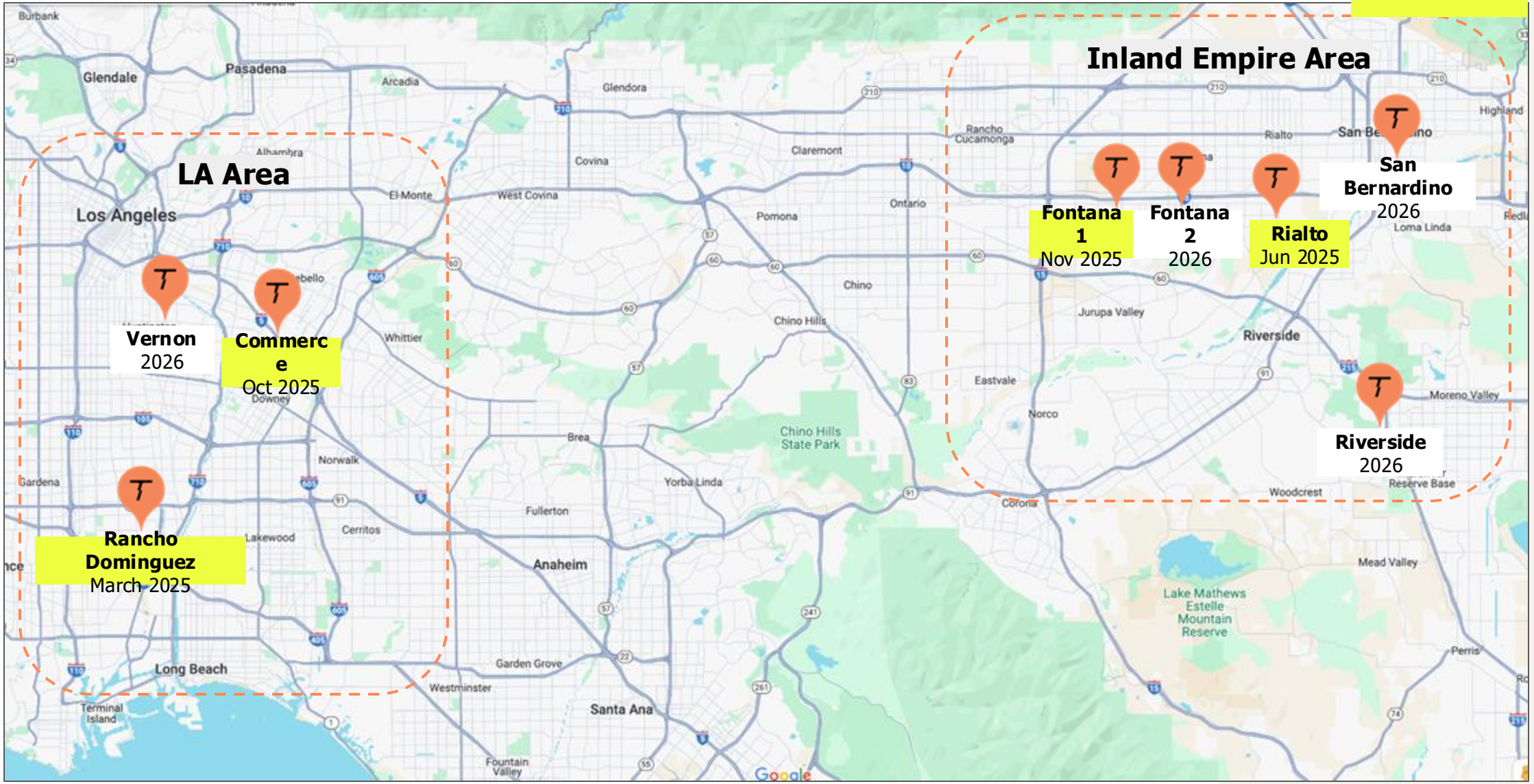
Locations:

- 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

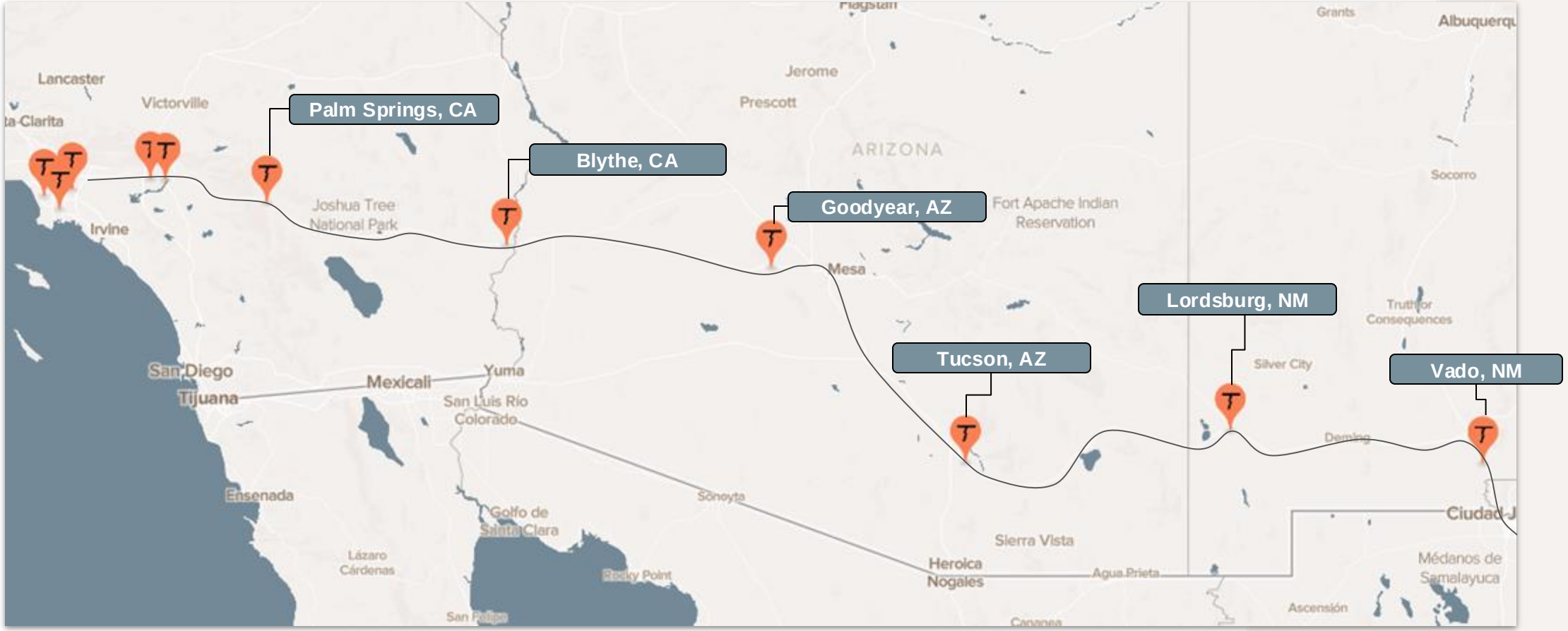
Terawatt Heavy-Duty Charging Sites in the LA Basin



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.