

**DOCKETED**

<b>Docket Number:</b>	22-BUSMTG-01
<b>Project Title:</b>	Business Meeting Agendas, Transcripts, Minutes, and Public Comments
<b>TN #:</b>	241277
<b>Document Title:</b>	Presentation - January 26 Business Meeting
<b>Description:</b>	N/A
<b>Filer:</b>	Dorothy Murimi
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	1/25/2022 4:42:12 PM
<b>Docketed Date:</b>	1/25/2022



**California Energy Commission  
Business Meeting  
January 26, 2022  
10:00 a.m.**



# **Pledge of Allegiance**



**I pledge allegiance to the Flag  
of the United States of America,  
and to the Republic for which it stands,  
one Nation under God, indivisible,  
with liberty and justice for all.**



# Consent Calendar: a. – d.

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- a. Aspen Environmental Group. Contact: Hilarie Anderson
- b. University of California, Berkeley, Energy Institute at Haas School of Business. Contact: Lynn Marshall
- c. Allotrope Partners LLC. Contact: Kate Reid
- d. California State Pipe Trades Council (CSPTC) Amendment to Provider Application. Contact: Sam Cantrell



# **Item 2: California Energy Demand 2021-2035 Forecast**

January 26, 2022 Business Meeting

Nick Fugate, Forecaster  
Energy Assessments Division, Demand Analysis Office



# Benefits & Purpose of the Forecast

- Integrated Energy Policy Report (IEPR)



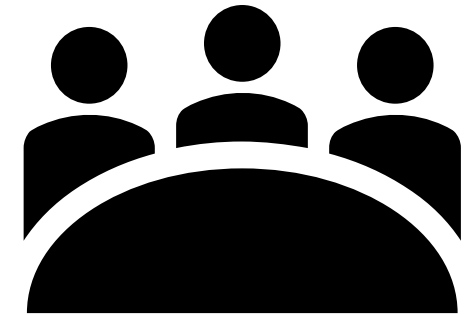
- Procurement and system planning at the CPUC and ISO
  - Integrated Resource Planning
  - Distributed Resource Planning
  - Resource Adequacy
  - Transmission Planning





# Stakeholder Process

- 5 IEPR workshops
- 6 Demand Analysis Working Group meetings
- Joint Agency Steering Committee discussion
- Final revisions made in response to stakeholder comments
  - Corrected EV charging profiles
  - Adjusted 2021 weather-normal peak estimate





# Analytic Improvements

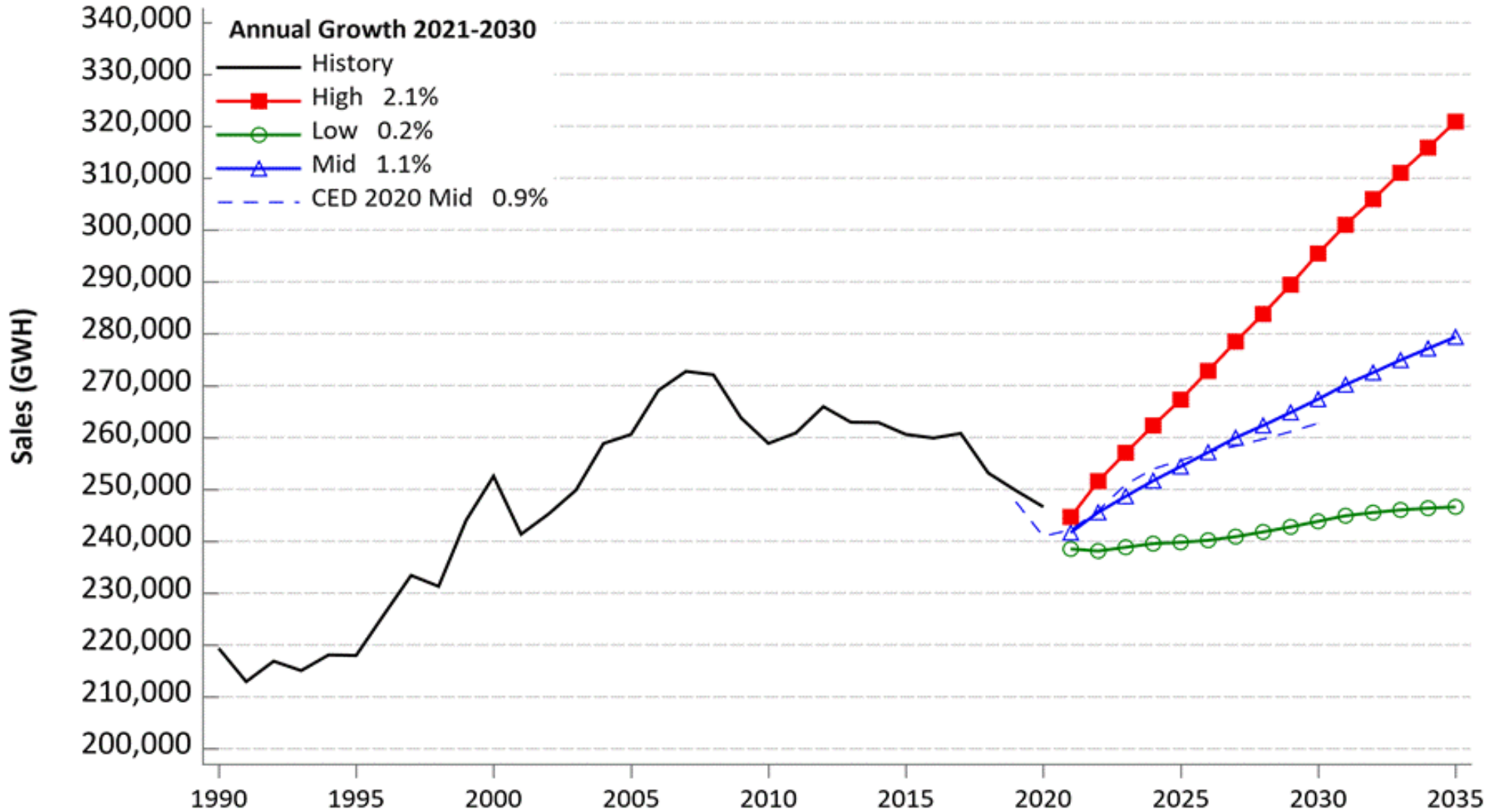
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- Forecast extended to 2035
- Climate change adjustment to peak forecasts
- Title 24 commercial PV & storage requirements
- Updated Additional Achievable Energy Efficiency
- New “Additional Achievable” scenarios for fuel substitution



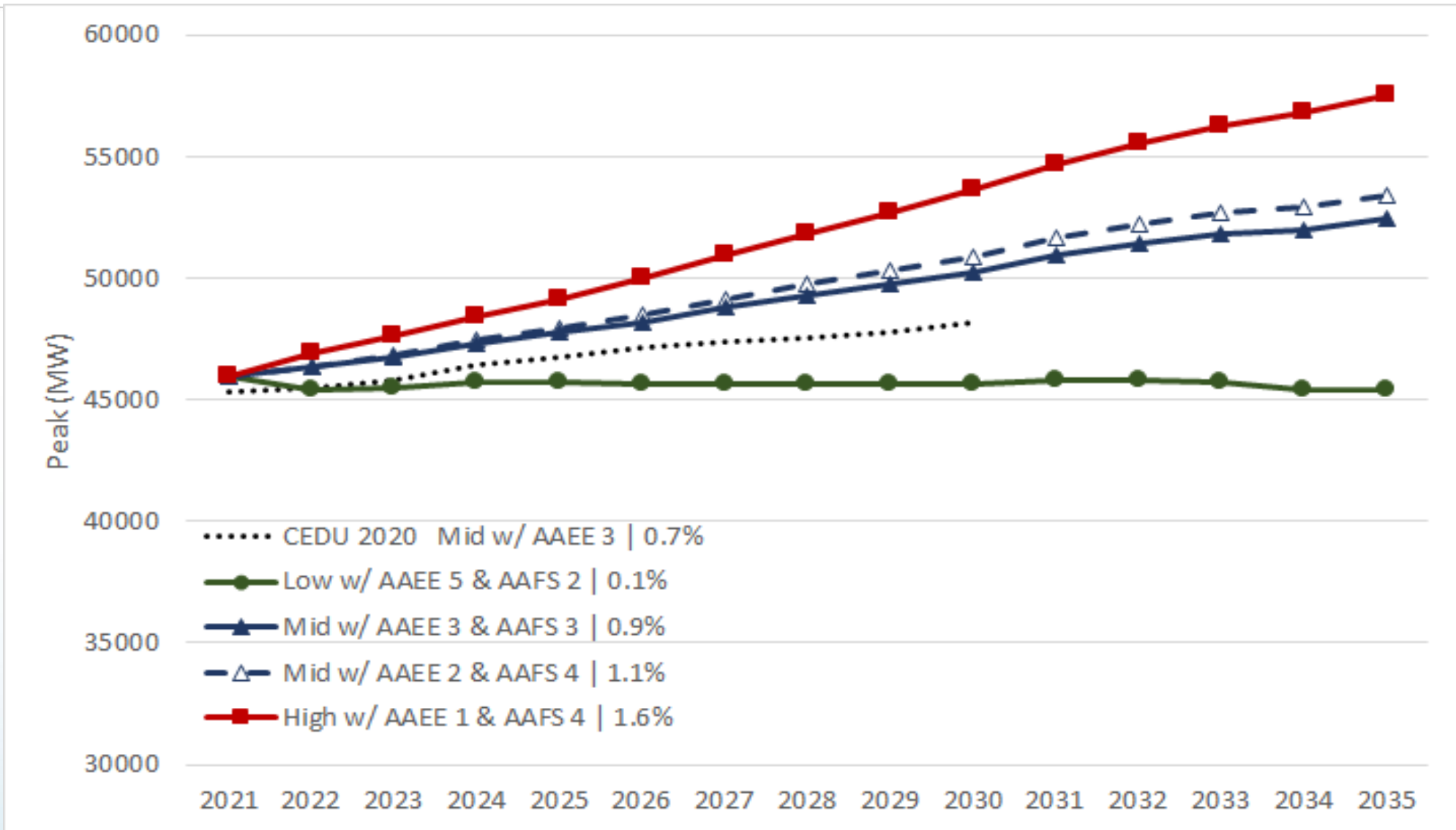


# Statewide Electricity Sales





# Managed Peak Demand (CAISO)





# Single Forecast Set

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- IEPR forecast has many components:
  - Baseline / AAEE / AAFS scenarios
  - Annual, hourly, and peak demand
  - Extreme weather variants
- Agreement between CEC, CPUC, and ISO identifies:
  - Specific planning uses
  - Components of forecast appropriate for each



# Staff Recommendation

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- Adopt California Energy Demand 2021-2035 Forecast



# Item 3: Update on Russell City Energy Center

January 26, 2022, Business Meeting

Presented by:

**Elizabeth Huber:** CME Office Manager, Siting, Transmission and Environmental Protection Division,

**Nika Kjensli:** ESRB Program Manager, California Public Utilities Commission, and  
**Kelly McAdoo,** Hayward City Manager, Hayward, California



# Requirements Under CEC-Approved Order





# Requirements Under CEC-Approved Order





# Joint Agency Investigation



**100 RCA and Documents Reviews**



**12 Witness/First Responder Interviews**



**9 Onsite inspections**



**3 Commissioner Tours**



**1 Weeklong Audit**





# CEC and CPUC Authorities

## CEC

## CPUC

**Statutory Authority**

25532

761.3

**Regulations/General Order**

CCR 1770

GO 167-B

**Oversight**

Inspects and enforces compliance activities through CEQA-equivalent process

Implements and enforces standards for the maintenance and operation of power plants

**California benefit**

Assures jurisdictional power plants operate in compliance with air and water quality, public health and safety, and specific conditions of certification

Ensures power plants are effectively and appropriately maintained and efficiently operating, and ensures electrical reliability and adequacy



# Electric Safety and Reliability Branch

Regulates power plants owned by generating asset owners (GAO), by enforcing General Order 167-B.

Purpose of this order is to implement and enforce operation and maintenance standards to ensure reliable electric generation.



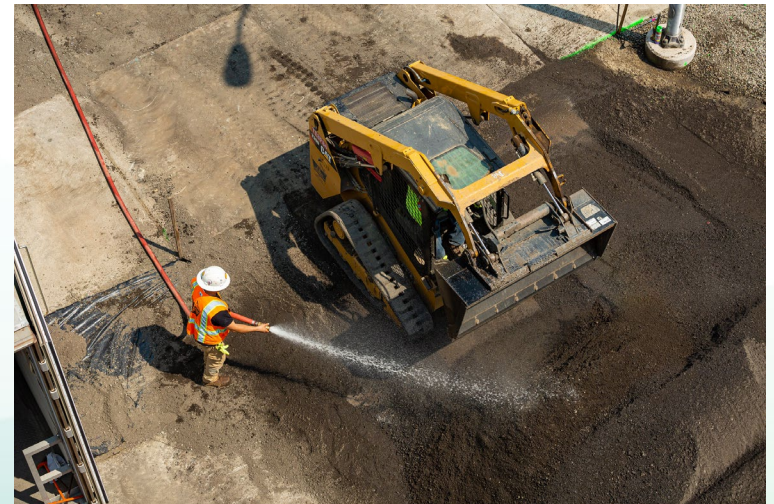


# Joint Agency Working Group





# Plan Review and Project Restart





# **Item 4: Draft Report to the CPUC on Supply-Side Demand Response**

January 26, 2022 Business Meeting

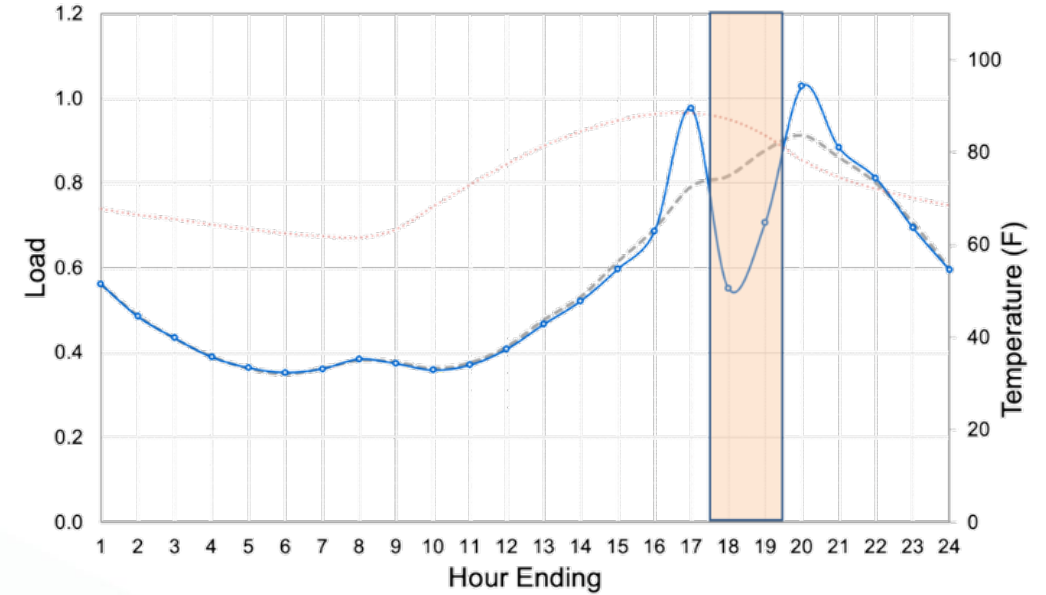
Erik Lyon, Advisor  
Office of Vice Chair Gunda



# Benefits to Californians

## Demand Response (DR):

- Provides greater reliability to the grid
- Reduces costs
- Reduces fossil fuel consumption
- Aligns electric demand with renewable energy generation
- Reduces the need for new power plants and transmission lines



Source: Grounded Analytics



# Overview

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## What is the best way to measure DR's contribution to reliability?



CPUC requested CEC to take a fresh look



CEC established stakeholder working group

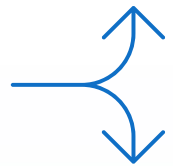


CEC staff developed recommendations for the CPUC



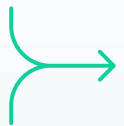
# CEC Working Group Approach

**Robust stakeholder process** with weekly meetings including utilities, DR and storage providers, customers, energy consultants, agencies, and the ISO



## Phase 1

1. Principles Working Group
2. Methodologies Working Group



## Phase 2: Combined Working Group

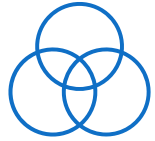
Recent focus on interim solutions for 2023



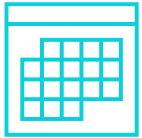


# Findings Overview

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Interrelated challenges for DR need to be addressed holistically



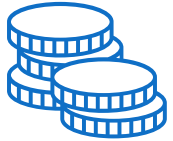
Planned timeline incompatible with developing a permanent solution by 2023



Two proposals are viable to temporarily address key challenges



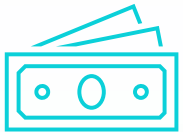
# Key DR Challenges



**Crediting:** Most utility DR resources not subject to ISO's rules for ensuring reliability



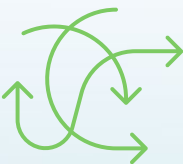
**QC Methodology:** Current approach does not accurately value contribution to reliability



**Incentive Mechanisms:** Penalties for underperformance not designed for DR



**Settlements:** Baseline methods do not accurately account for weather-sensitive resources



**Process:** Onerous, expensive, opaque, and inflexible

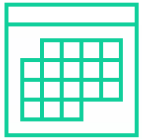


# Timeline Issues



## 2023 Compliance Year

- QC process already underway by December 2021
- Insufficient time to develop permanent methodology by 2023



## 2024 Compliance Year (and beyond)

- RA reform working group proposing significant changes
- Slice-of-Day framework likely to be recommended and adopted
- CEC Working Group must wait for recommendations to ensure compatibility



# Interim Proposals



## **LIP-Informed Effective Load Carrying Capability (ELCC)**

What is the amount of ‘perfect capacity’ a DR resource can replace without impacting reliability?

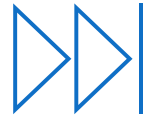


## **Incentive-based “PJM/NYISO” Approach**

How much capacity will DR providers offer if they will be penalized for failing to deliver?



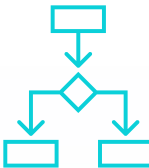
# Interim Recommendations



Status quo DR counting methodology to continue for another year



Two new methodologies for 2023



DR providers can choose between status quo and new methodologies



California ISO provide exemptions for new methodologies



Direct investor-owned utilities to move DR onto supply plans



# Long-term Recommendations



Extend CEC stakeholder working group process



Develop a comprehensive, permanent solution for subsequent years



Ensure alignment with changes to resource adequacy framework



# Next Steps

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Public comment period through February 4



CEC staff consider revisions to report



Request CEC adoption at February 16 business meeting



Submit report to CPUC



# Item 5: Pecho Energy Storage Center

January 26, 2022, Business Meeting

Eric Knight, Manager  
STEP, Siting & Environmental Office





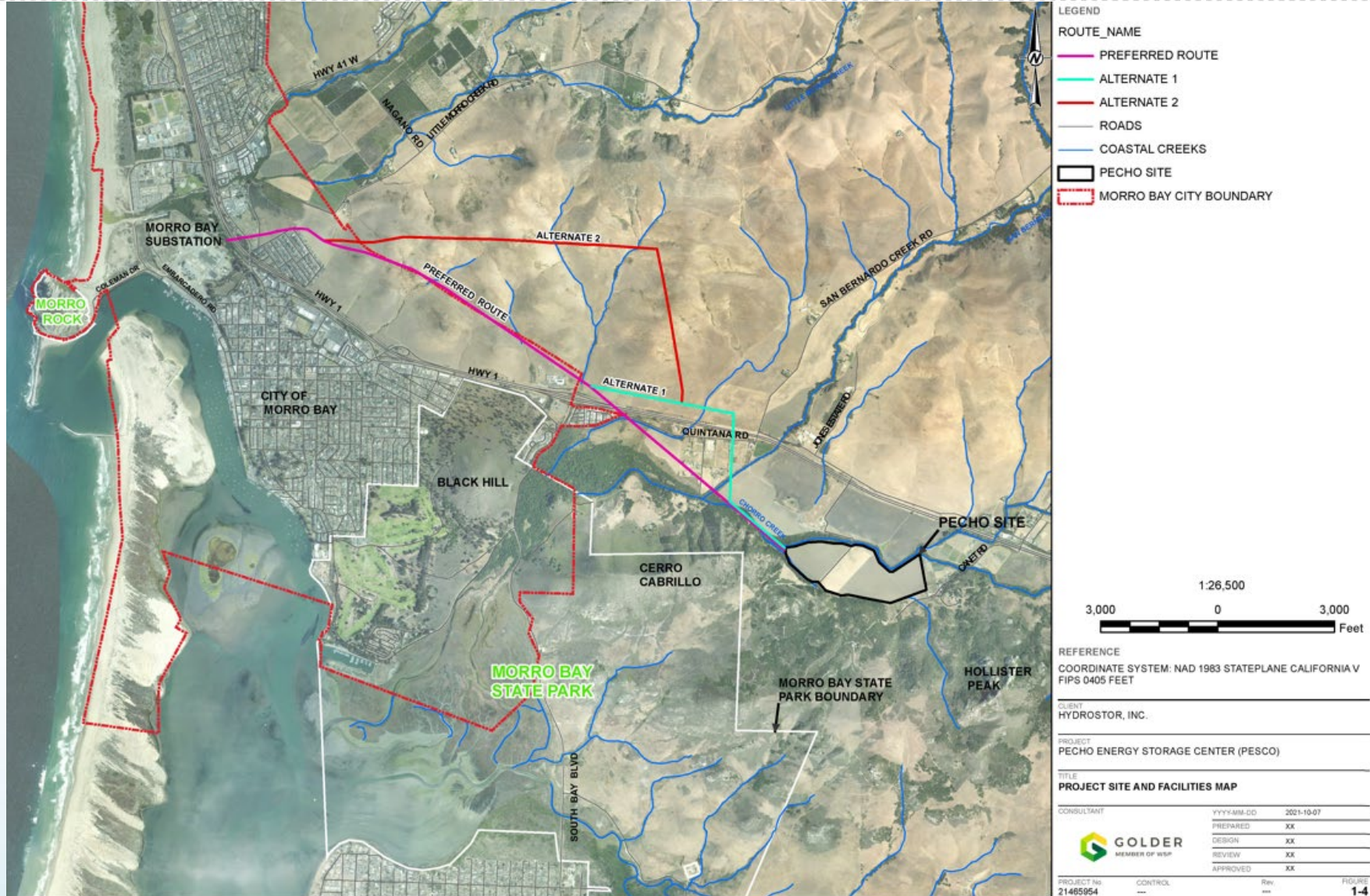
# Proposed Order No. 22-0126-5

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- Find Pecho application for certification (21-AFC-01) incomplete
- Adopt list of deficiencies
- Direct applicant and staff to file Notice of Intention exemption information
- Appoint a committee



# Pecho Project Location





# Pecho Project Simulation





# Staff Recommendation

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Adopt Order No. 22-0126-5



# Item 6: Gem Energy Storage Center

January 26, 2022, Business Meeting

Eric Knight, Manager  
STEP, Siting & Environmental Office



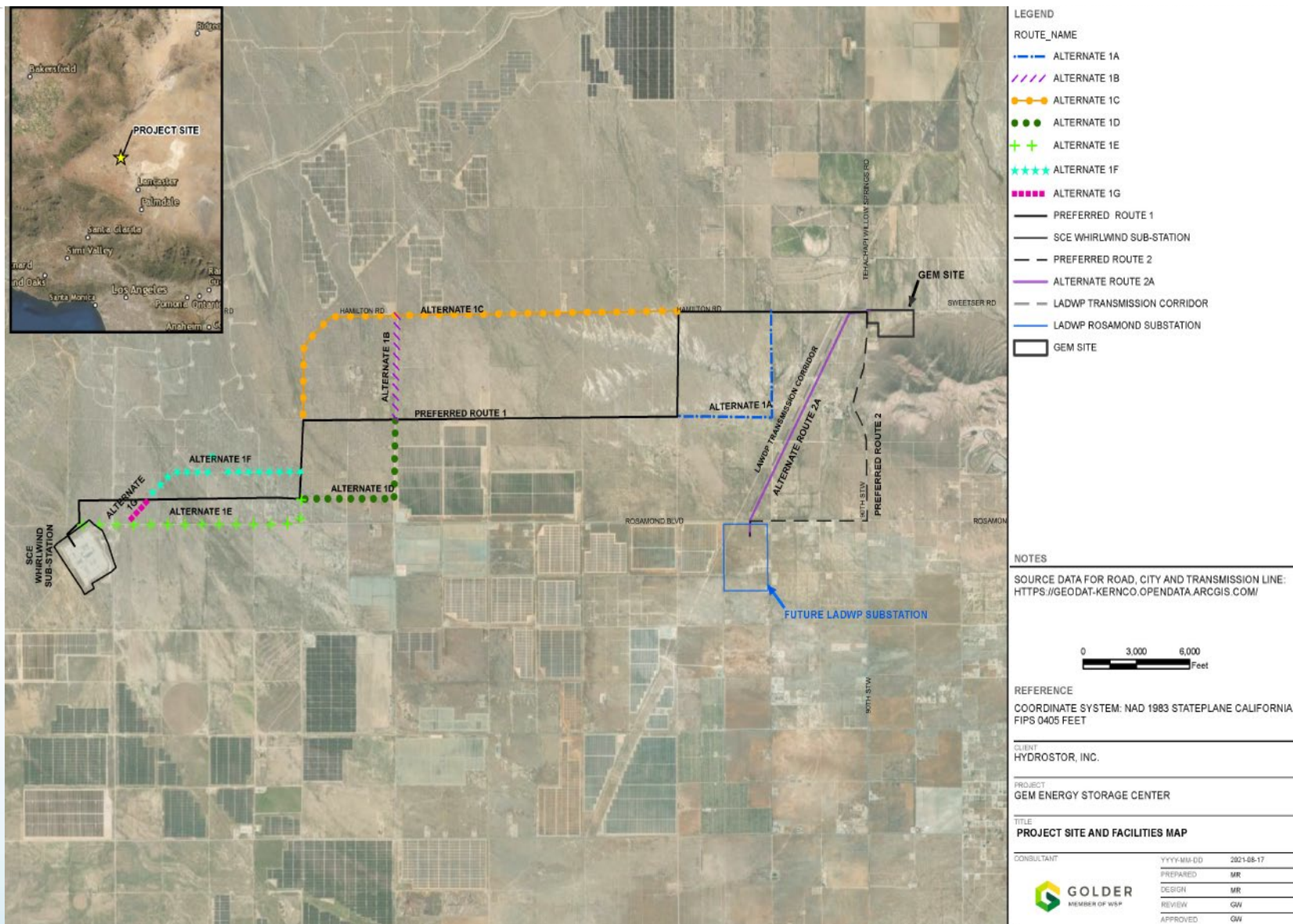
# Proposed Order No. 22-0126-6

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- Find Gem application for certification (21-AFC-02) incomplete
- Adopt list of deficiencies
- Direct applicant and staff to file Notice of Intention exemption information
- Appoint a committee



# Gem Project Location





# Gem Project Simulation







# Staff Recommendation

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Adopt Order No. 22-0126-6



# **Item 7: Electric Vehicle (EV) Ready Communities Phase II - Implementation**

January 26, 2022 Business Meeting

Patrick Brecht, Energy Commission Specialist II  
Fuels and Transportation Division, Transportation Integration and  
Production Office



# Benefits to Californians

- **Improve** access to EV charging infrastructure
- **Reduce** barriers to zero emission transportation
- **Increase** mobility options in disadvantaged communities (DAC)
- **Support** green job creation

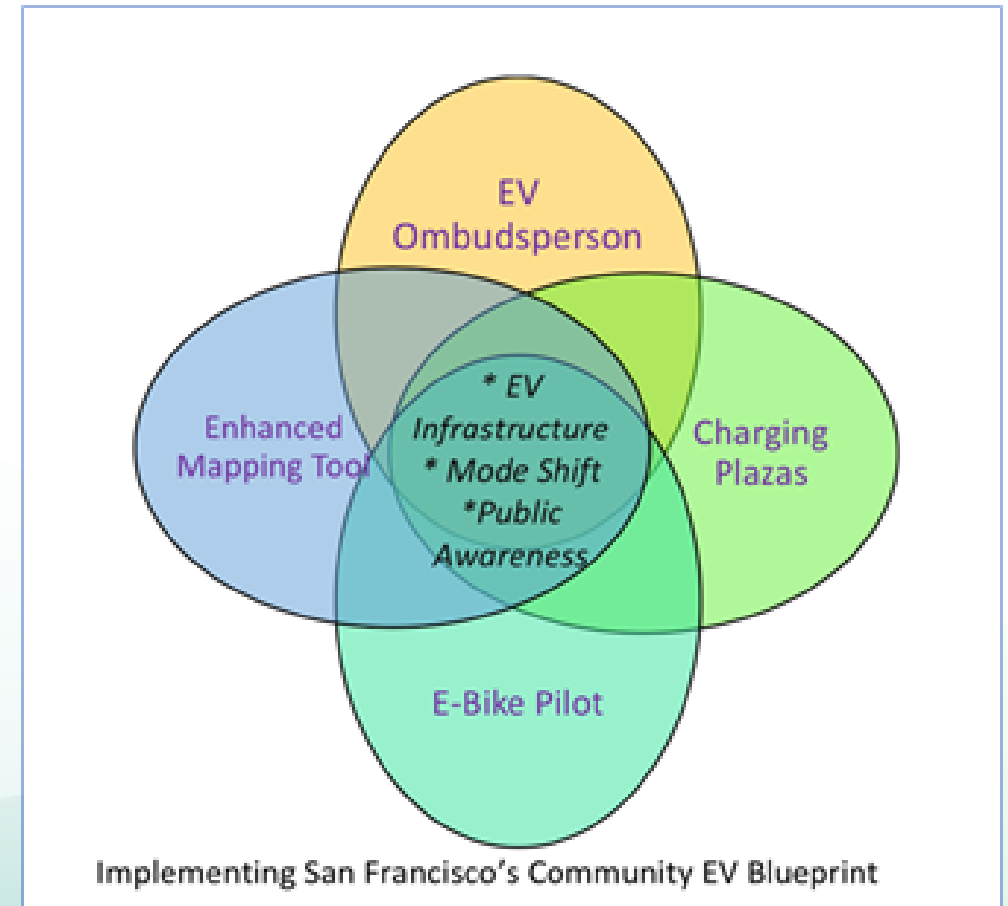




# San Francisco Department of the Environment \$2,384,797



- Increase Public Awareness
  - Establish EV Ombudsperson
- Expand Charging Infrastructure
  - 100 Level 2 and 25 DCFCs
  - 3 public fast-charging plazas
- Accelerate Mode Shift
  - Delivery-app workers to use e-bikes





# County of Los Angeles Internal Services

## \$2,500,000

- Will deploy light-duty EV infrastructure through DAC EV infrastructure project
- Expand Charging Infrastructure
  - 130 Level 2 chargers for Public Agency DAC Program
  - 60 Level 2 chargers for Multi-Family Program
- Provide holistic approach to regional transportation electrification issues





# Kern Council of Governments

## \$1,799,485

- Install 32 minimum Level 2 and DCFCs at 10 sites minimum throughout Kern County
- Expand and support MioCar electric carsharing business
- Install additional EVSE to support workforce development
- Conduct outreach and education activities





# Staff Recommendation

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- Approve agreements/amendments
- Adopt determination that projects are exempt from CEQA



# **Item 8: Santa Clara Valley Transportation Authority – (VTA) ZVI-21-012**

January 26, 2022 Business Meeting

Esther Odufuwa, Energy Commission Specialist I

Fuels and Transportation Division

Medium and Heavy Duty Zero Emission Technologies Office, Freight & Transit Unit





# Benefits to California

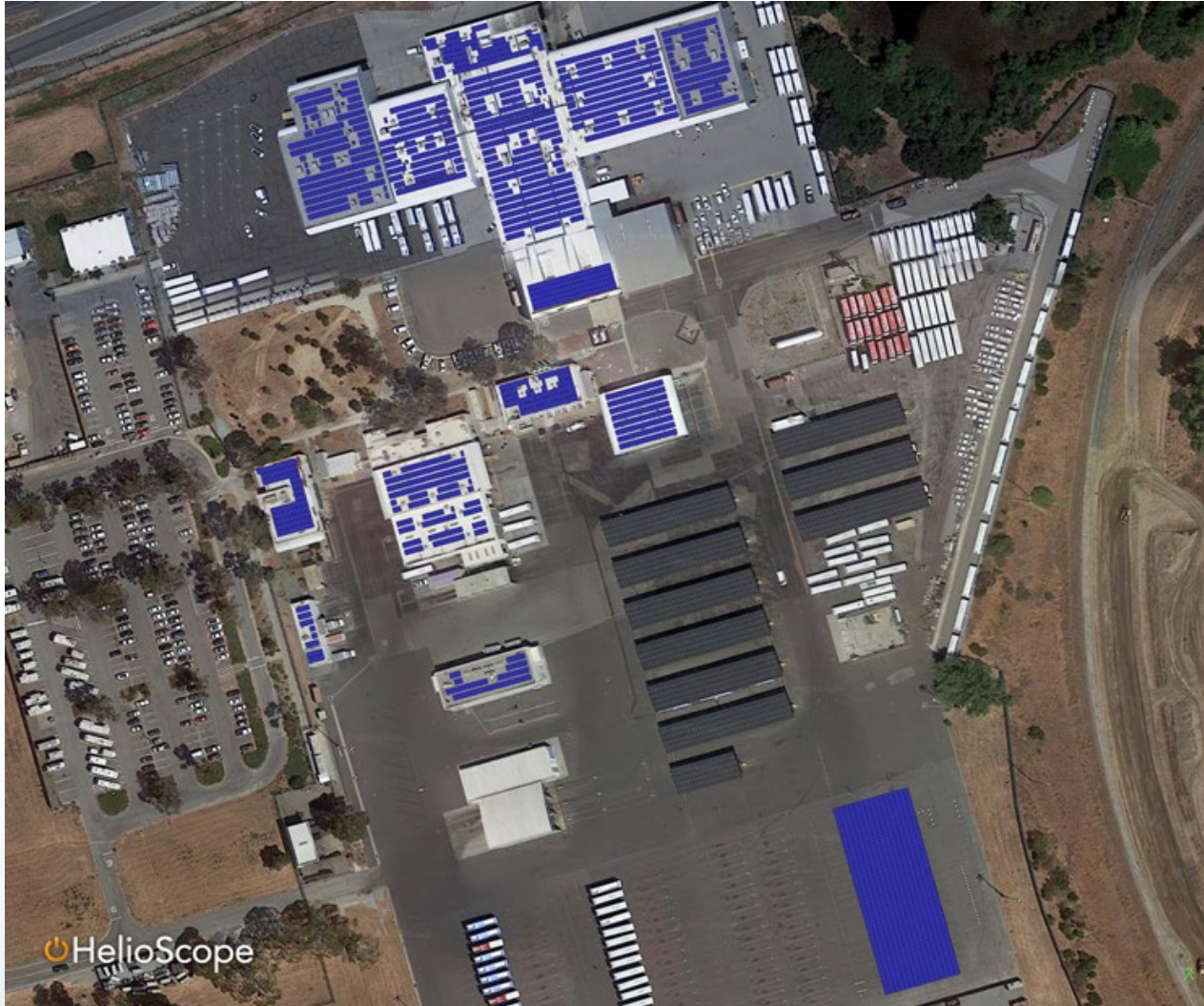
- Replicable solutions
- Reduced emissions
- Increased resiliency



Photo credit: Santa Clara Valley Transportation Authority



# VTA Microgrid Project Overview



Infrastructure &  
Microgrid  
Development for  
VTA's Transition  
to Zero  
Emission Bus  
Fleet

Rendering of solar canopy at VTA Cerone Bus yard



# Overview of Route Services

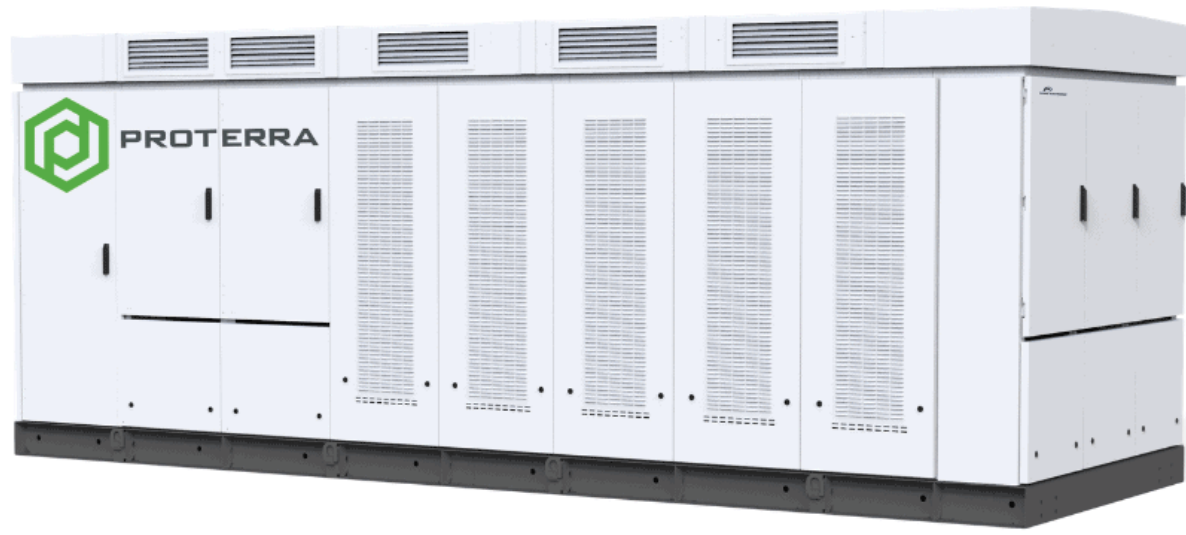


Santa Clara Valley Transportation Authority Service Map



# Overview of Equipment

## Proterra 1.5 MW Chargers



## Proterra Charging Dispensers



Photo credit: Santa Clara Valley Transportation Authority



# Overview of Equipment contd.

4 MWh / 1MW  
Battery Energy  
Storage System



Photo credit: Santa Clara Valley Transportation Authority

Overhead  
Inverted  
Pantograph



Photo credit: Santa Clara Valley Transportation Authority



# California Market Potential



Aerial View of Santa Clara Valley Transportation Authority Site

≈ **11,500**

transit buses in California

≈ **700 MW**

flexible capacity

≈ **700,000**

homes could be powered



# Staff Recommendation

## Approve

- 1 grant agreement for \$4,676,000

## Adopt

- Staff's determination that action is exempt from CEQA



# **Item 9: Bringing Rapid Innovation Development to Green Energy (BRIDGE) 2020 (GFO-20-301)**

January 2022 Business Meeting

Michael Ferreira  
Energy Deployment & Market Facilitation Office  
Energy Research & Development Division





# Benefits to CA Ratepayers

- **Advances clean energy economy**
  - Supports clean energy entrepreneurs
  - Quicker transition from fossil fuels
- **Improves grid resilience and reliability**
- **Increases renewable energy production**





# Swift Solar, Inc.

## High Efficiency Perovskite Tandems for Solar EVs

- More solar power from same surface area.
- Could add 17-21 miles/day, meeting 50-100% typical charging needs.
- Target markets: aerospace, electronics and solar roofing.
- Would provide peak load reduction, avoided infrastructure upgrades.





# Intertie, Inc.

## Advanced Power Electronics to Enable Fast Charging while Avoiding Grid Upgrades

- Fast charging capability using 100A circuit (175 fast chargers typically require 350A)
- Capable of providing peak shaving, demand charge reduction
- Underground battery housing improves safety, reduces operating costs, saves space, and removes siting issues
- 10% market penetration = 4,790 installations resulting in 750 MW peak load reduction

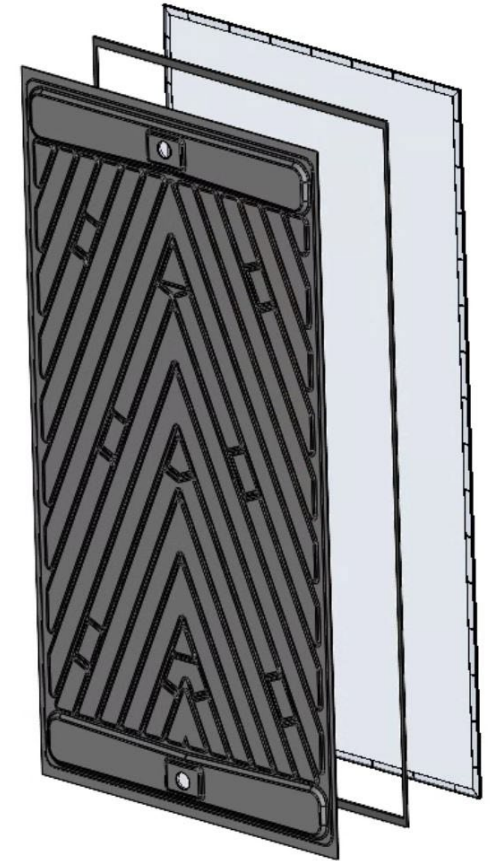




# Icarus RT

## Hybrid PV/Thermal Solar Storage Cogeneration System

- Attaches to rear of solar panel installation
- Heat extractors reduce panel temp up to 18 °C = 12% increase in efficiency
- 280kW hybrid system demo:
  - 50,000 kWh/year more from improved efficiency (\$15,000 value)
- Target markets: multifamily, commercial and industrial, represents \$5 b in CA as of 2020

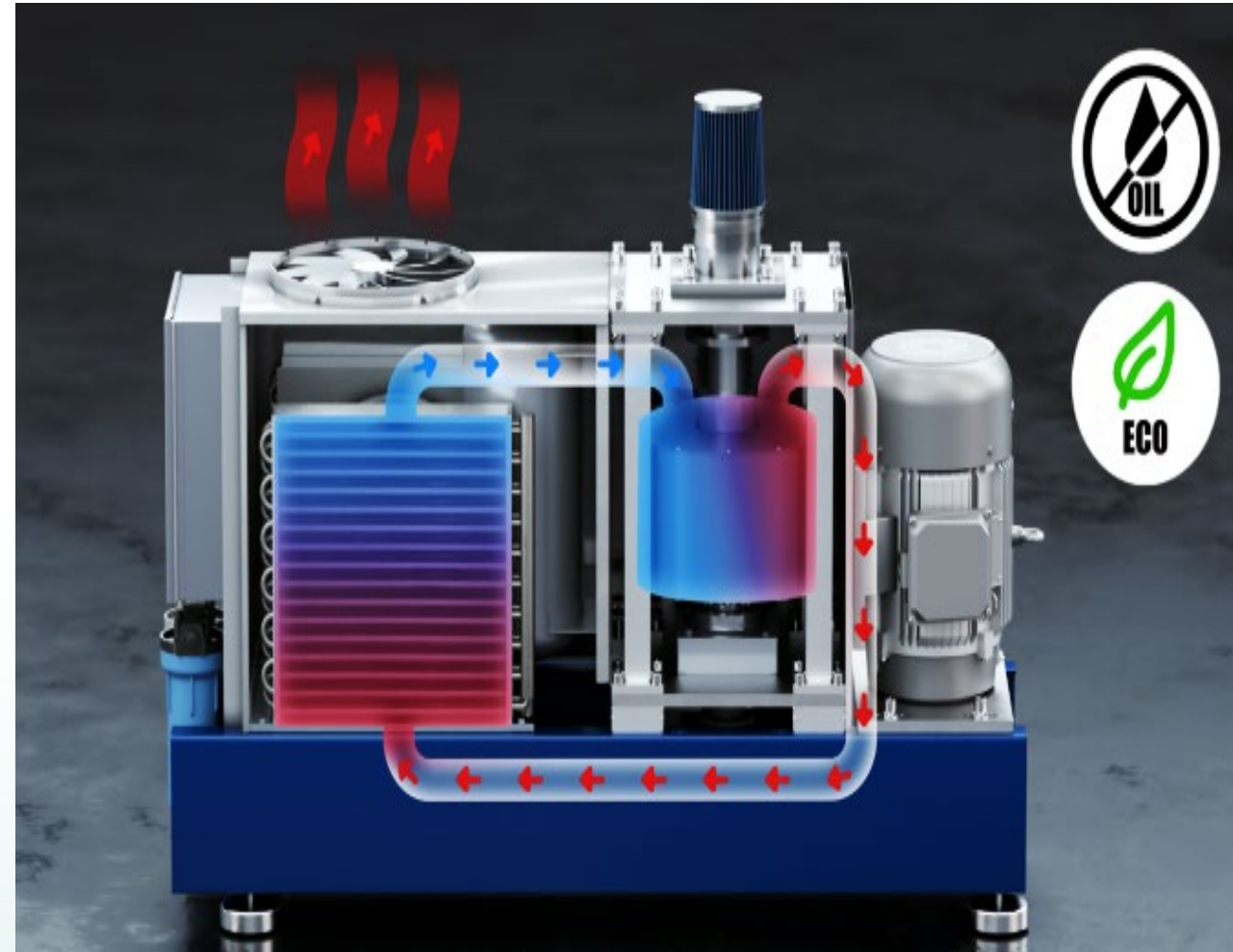




# Carnot

## Carnot Compressor Field Testing

- 20% reduction in power consumption
- No oil/filter change and disposal
- Reduced maintenance needs
- \$40 billion/year global air compressor market by 2025





# Staff Recommendation

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Approve and adopt staff's findings that these projects are exempt from CEQA.