DOCKETED	
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Project Title:	Business Meeting Agendas, Transcripts, Minutes, and Public Comments
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Document Title:	Presentation of February 16 2022 Business Meeting
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Filer:	Dorothy Murimi
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	2/16/2022 2:37:04 AM
Docketed Date:	2/16/2022

California Energy Commission
Business Meeting
February 16, 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. – e.

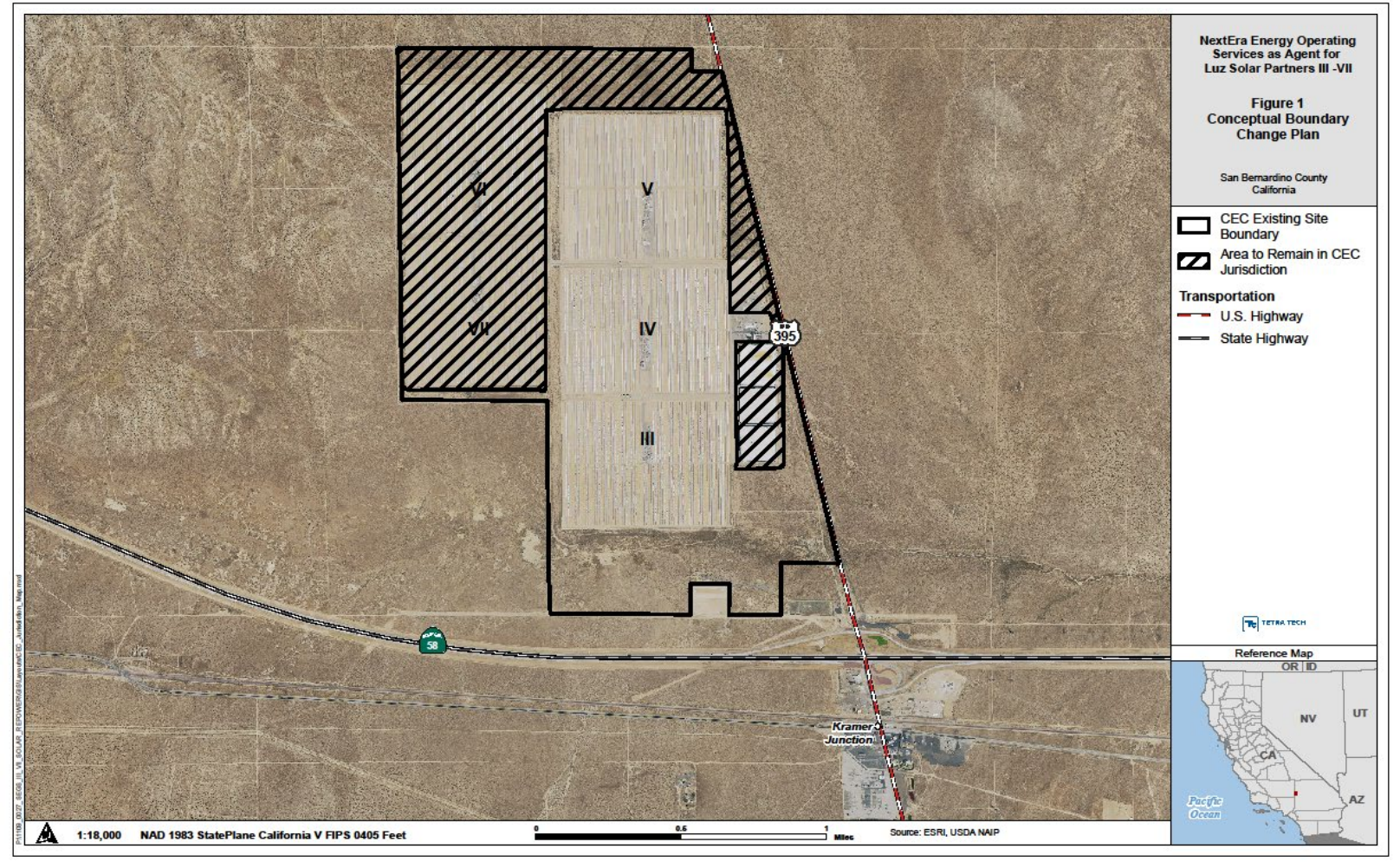
a. SSA Pacific, Inc. Contact: Kate Reid
b. Linde Inc. Contact: Kate Reid
c. Pilot Travel Centers LLC (DBA Pilot Flying J). Contact: Kate Reid
d. International Council on Clean Transportation Inc. Contact: Sharon Purewal
e. Rice Solar Energy, LLC. Contact: Keith Winstead

Item 2: Solar Energy Generating System Units (SEGS) III – VII Boundary Modification

February 16, 2022, Business Meeting

Presented by Elizabeth Huber, Compliance Monitoring and Enforcement Office Manager
John Heiser, Compliance Project Managers
Jared Babula, Legal Counsel
Siting, Transmission and Environmental Protection Division

Benefits to Californians



Supporting California's goals of a clean energy future.

Key Milestones

Date	Action
5/25/1988	SEGS III – VII Project Approved
2/01/1989	SEGS III - VII Came Online
10/15/2019	SEGS III – VII Ceased Operations
6/09/2021	Decommissioning and Closure Plan Approved

SEGS Units III – V Decommissioned

Staff Recommendation

- Approve SEGS III – VII boundary modification.

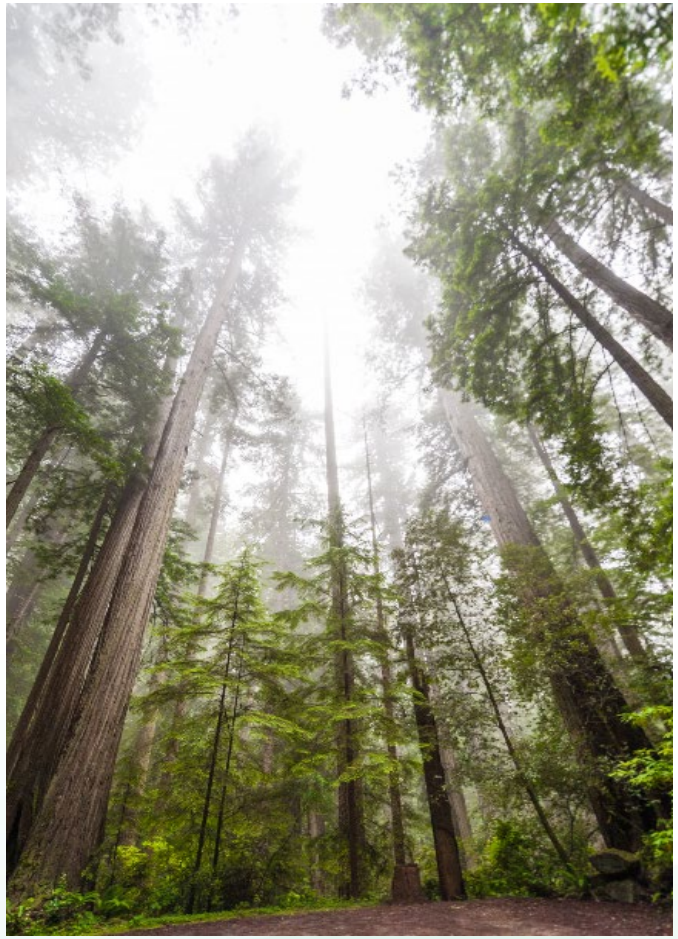
Item 3: 2021 Integrated Energy Policy Report (IEPR)

February 16, 2022 Business Meeting

Heather Raitt, IEPR
Heather Bird, Efficiency Division
David Erne, Energy Assessments Division
Nick Fugate, Energy Assessments Division
Charles Smith, Fuel and Transportation Division

Benefits to Californians

- Puts forward energy policies that:
  - Conserve resources
  - Protect environment
  - Ensure energy reliability
  - Enhance state's economy
  - Protect public health and safety
- Supports state’s clean energy future.



Structure of 2021 IEPR

- Andrew McAllister, 2021 IEPR Lead Commissioner

Topic	Lead Commissioner
Volume I: Building Decarbonization	Commissioner McAllister
Volume II: Reliability	Vice Chair Gunda
Volume III: Gas – not presented today	*Vice Chair Gunda*
Volume IV: Forecast	Vice Chair Gunda
Appendix: Clean Transportation Program	Commissioner Monahan

Report Development

- Held 21 IEPR workshops

- December 2021
  - Posted Draft IEPR
  - All volumes except gas
  - 8 sets of comments

- February 2022
  - Posted Final IEPR

2021 IEPR
Volume I: Building Decarbonization

Heather Bird, Supervisor
Efficiency Division

California's Decarbonization Goals

- Reduce GHG emissions to 1990 levels by 2020 (AB 32)
- Reduce GHG emissions 40% below 1990 levels by 2030 (SB 32)
- Reduce emissions from highly potent GHG emissions – including methane and hydrofluorcarbon refrigerants – to 40% below 2013 levels by 2030 (SB 1383)
- 60% renewables by 2030 (SB 100)
- 100% clean electricity by 2045 (SB 100)
- Economy-wide carbon neutrality by 2045 (EO B-55-18)

Buildings, Industrial, and Agricultural Decarbonization

Buildings (24%)

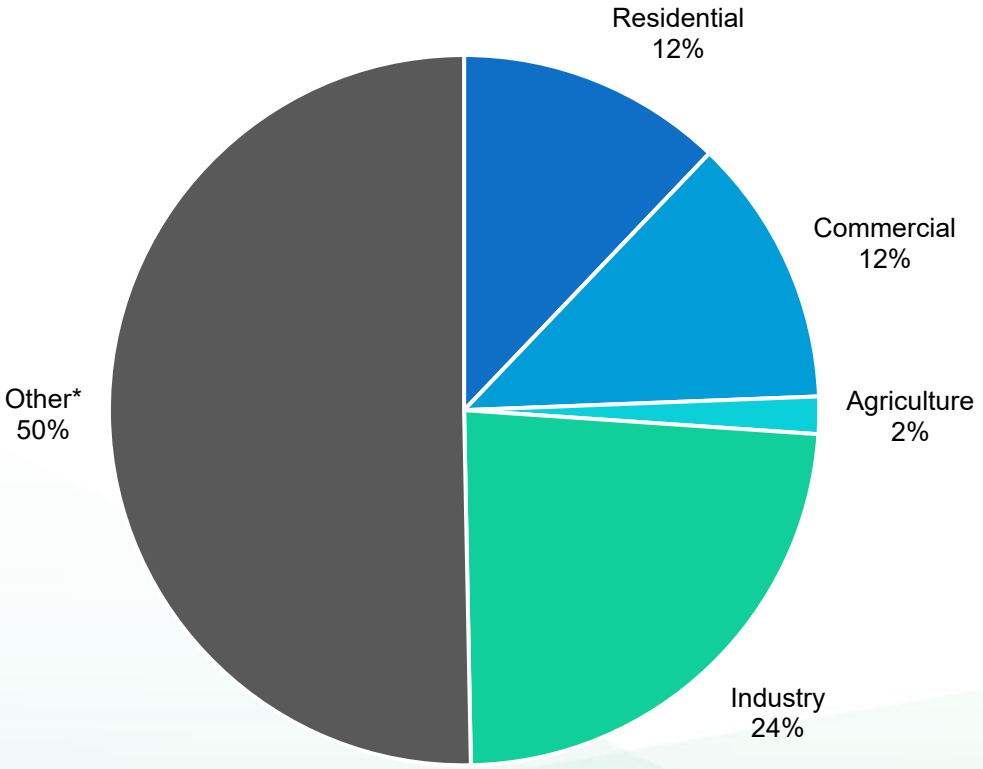
- Air Quality
- Building performance
- Existing Buildings

Industry and Agriculture (26%)

- Tailored solutions

Accounts for half of state's GHG emissions

GHG Emissions from Fuel, Refrigerant, and Electricity Use



Source: CEC using the California Air Resources Board's 2000-2019 GHG Inventory

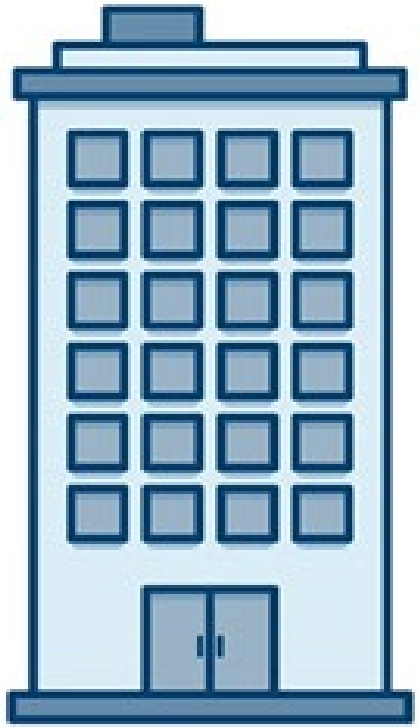
Recommendations - Top Line

- Focus on existing buildings
- New state goal: 6 million heat pumps by 2030 (new & existing)
- Prioritize equity and inclusion in program design

Residential Units
13.7 million

Annual Electricity Consumption
93,522 GWh

Annual Gas Consumption
4,562 MM therm



Commercial Space
7.4 billion sq.ft.

Annual Electricity Consumption
105,174 GWh

Annual Gas Consumption
2,130 MM therm

Source: CEC 2019 Energy Demand Forecast

Recommendations – Coordination

- California agencies
- Local & regional leadership and workforce
- Private market
- Federal efforts and funding
- Other states and countries

Recommendations – Focus Areas

- Load flexibility
- Industry and agriculture processes
- Embodied carbon

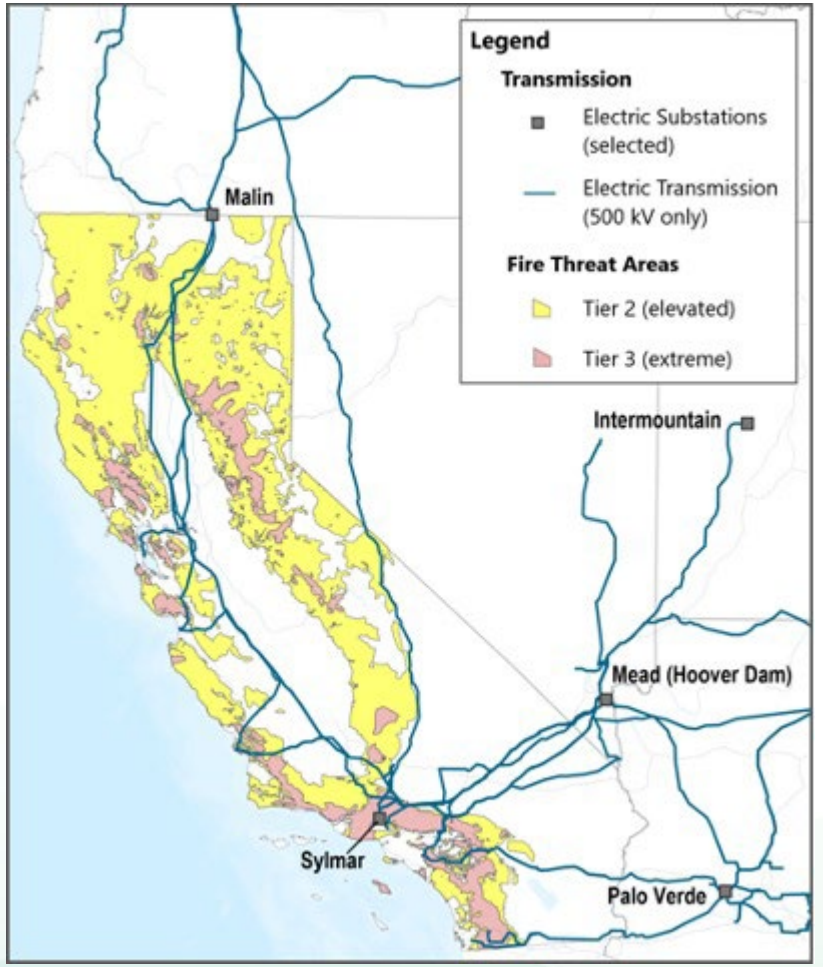
2021 IEPR

Volume II: Ensuring Reliability in a Changing Climate

David Erne, Manager
Energy Assessments Division

Reliability Volume

- **Scope**
  - Summer electric reliability
- **Situational awareness**
  - Growth in renewables and storage
  - Gas fleet retirements
  - Climate change
- **Reliability Analysis/Improvements**
  - Near-term - summer stack analysis
  - Midterm: 2022 – 2026
- **DR improvement to support reliability**
  - Work update



Recommendations

- **Situational Awareness**
  - Annual reliability outlook
  - Tracking new projects
- **Planning**
  - Climate change
  - Transmission and projects
  - Energy storage permitting & emergency response

Recommendations Cont.

- **Implementation**
  - Restructure demand response
  - Dynamic rate plans and automated devices
- **R&D**
  - Zero-carbon technologies
  - Load flexibility solutions
  - Energy storage

2021 IEPR
Volume IV: California Energy Demand Forecast

Nick Fugate, Lead Analyst
Energy Assessments Division

How the Forecast is Used

Helps keep California's electricity supply clean, affordable, and reliable

Ensures electricity resource and system reliability studies begin with reasonable assumptions

- Economic and demographic growth
- Climate change impacts
- Programs and standards
- Distributed resource adoption
- Transportation electrification

What the Forecast Covers

Includes:

- Annual end-user electricity and gas consumption
- Peak and hourly electricity demand
- Self-generation, electric vehicles, and other load modifiers
- Baseline and additional achievable scenarios

Key Updates:

- Forecast period extended to 2035
- New Title 24 commercial PV & storage requirements
- Updated additional achievable efficiency scenarios
- New additional achievable fuel substitution scenarios

Summary of Results

Baseline Consumption

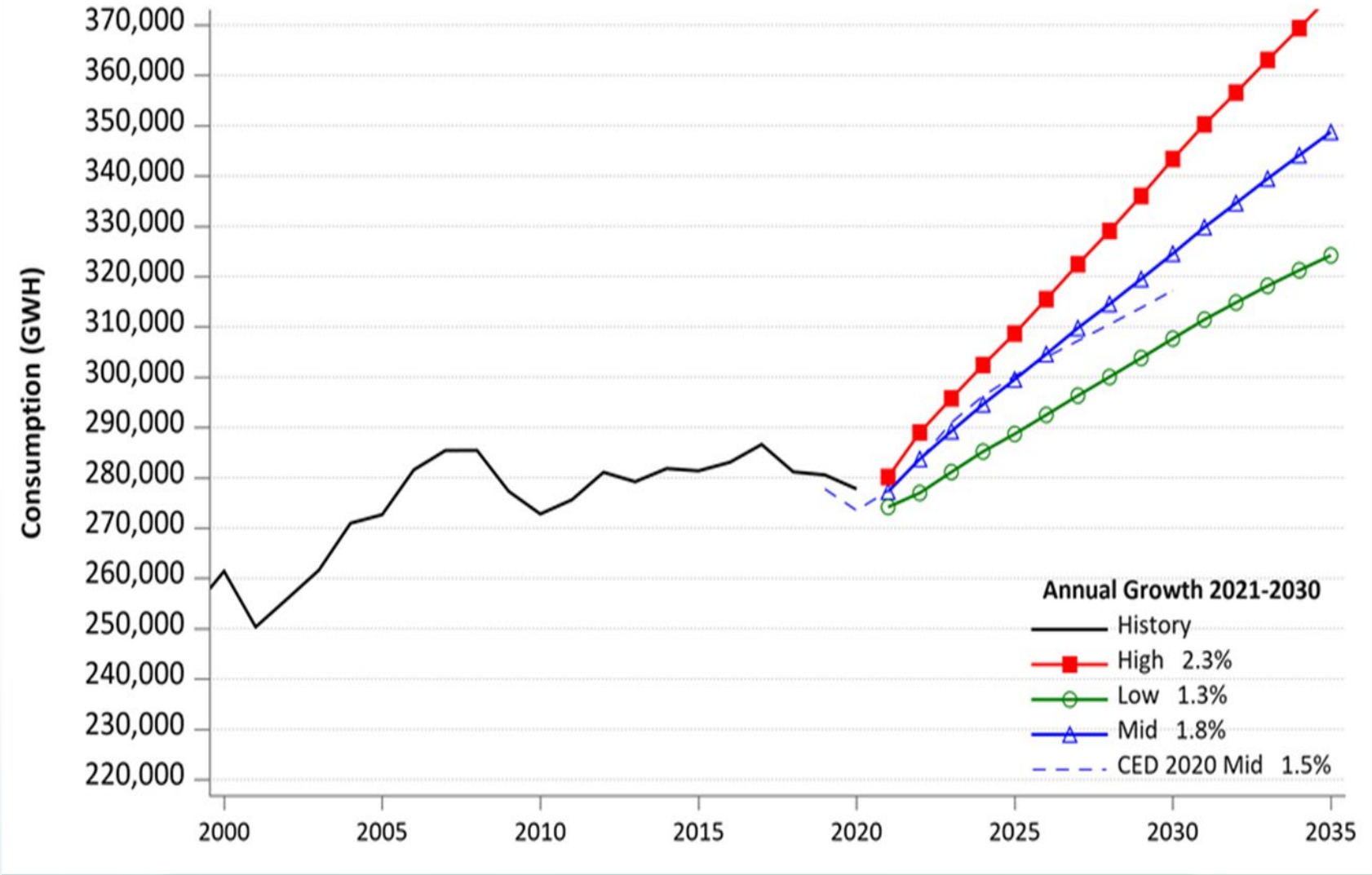
- 1.8% annual growth
- 340,000 GWh by 2035

Managed Sales

- 0.7% annual growth
- 269,000 GWh by 2035

Managed Peak

- 0.9% annual growth
- 52,400 MW by 2035 (CAISO only)



2021 IEPR Appendix: Assessing the Benefits of the Clean Transportation Program

Charles Smith, Office Manager
Fuels and Transportation Division, Transportation Integration and Production Office

Benefits of the Clean Transportation Program

- Provides funding to projects that:
  - Reduce GHG emissions in transportation
  - Improve health by eliminating tailpipe emissions
  - Reduce petroleum reliance
  - Increase zero-emission vehicle (ZEV) mobility
  - Support grid reliability

- Benefits Assessment
  - Fulfills requirement in statute
  - Improves transparency and oversight of program's portfolio

Program Highlights

51%
Funding located in disadvantaged or low-income communities

$734M
Matched funding

20,000
Trainees

15,154
EV Chargers

3,152
Natural gas trucks

70
Natural gas fueling stations

83
Hydrogen fueling stations

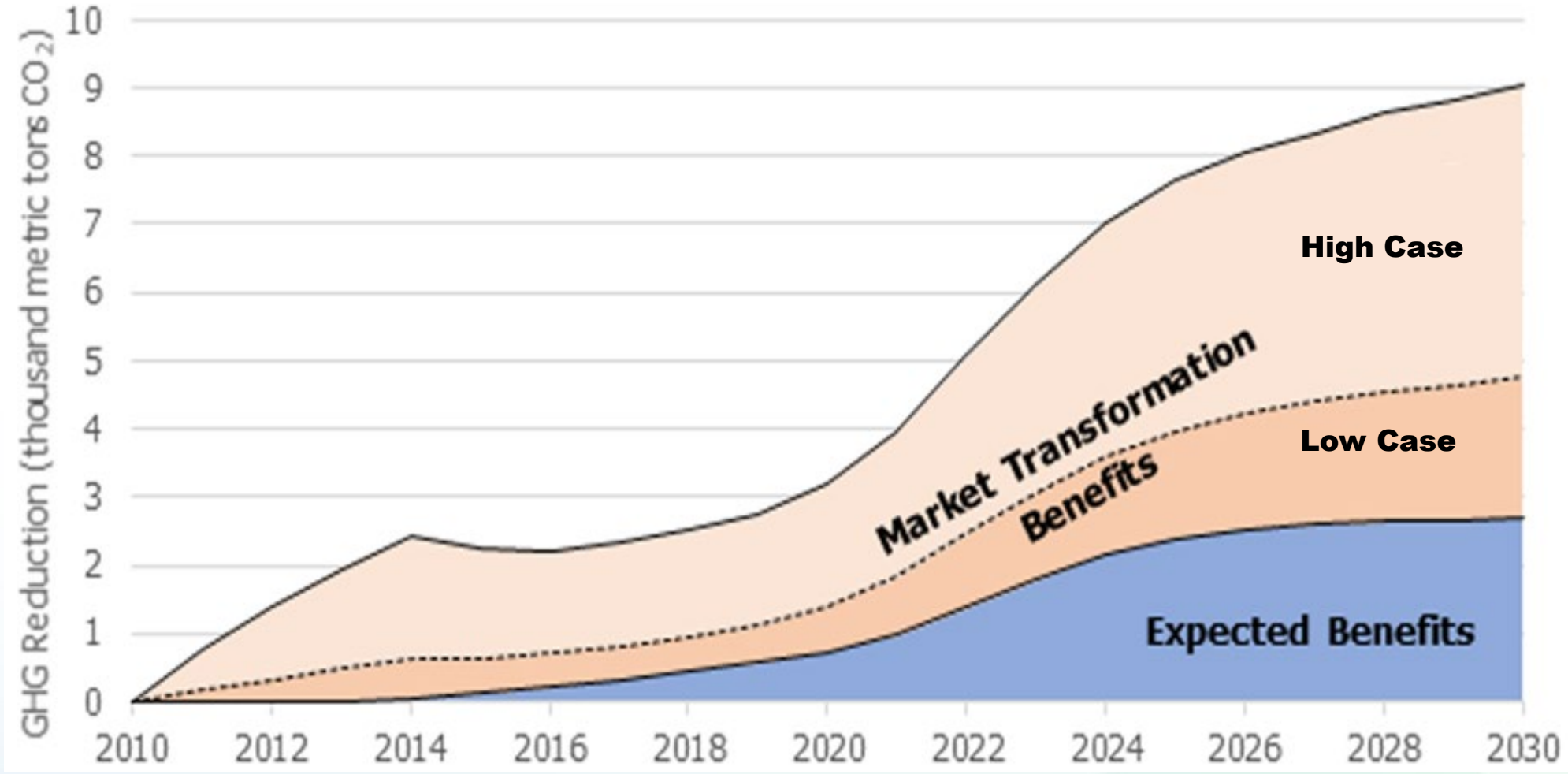
27
Manufacturing facilities

Source: CEC. Totals as of August 2021.

Quantifying Benefits

- Analytical support from National Renewable Energy Laboratory
- 3 key metrics: GHG reductions, air quality benefits, petroleum displacement
- Expected Benefits
  - Directly proportional to alternative fuel produced, dispensed, or consumed in the project
- Market Transformation Benefits
  - Tougher to quantify, but no less real
  - Range of potential benefits, due to greater uncertainty

Annual GHG Reductions



Source: National Renewable Energy Laboratory, CEC

Staff Recommendation

Adopt 2021 IEPR with Errata:

- Volume I: Building Decarbonization
- Volume II: Ensuring Reliability in a Changing Climate
- Volume IV: California Energy Demand Forecast
- Appendix: Assessing the Benefits and Contributions of the Clean Transportation Program

Thank you!

Item 4: Building Initiative for Low-Emissions Development (BUILD) Program Guidelines

February 16, 2022 Business Meeting

Deana Carrillo, Manager
Renewable Energy Division, Local Assistance and Financing Office

Benefits to California

- Green Jobs Creation
- GHG Reduction
- New Affordable Housing
- Health & Non-Energy Benefits

BUILD Program: Governance

SB 1477 (Stern, Ch. 378)	CPUC Decision 20-03-027
Authorized 2 building decarbonization programs: • BUILD • Technology and Equipment for Clean Heating (TECH) Initiative	• Established additional program requirements • CEC identified as BUILD Program administrator
Develop and deploy near-zero-emission building technologies to reduce greenhouse gas (GHG) emissions	Incent new low-income all electric residential housing to reduce GHG emissions

BUILD Budget

Budget Item	Amount
Program Costs: Incentives for Low-Income Housing Developments	$60 Million (no less than)
Program Costs Other • Technical assistance Provider - up $8 Million over 6 years • New Adopter Award –up to $ 2 Million	$10 Million
Administrative Costs	$8 Million (no more than)
Joint Evaluation Cost Share	$2 Million (no more than)
Total	**$80 Million**

Incentives must be proportional to each gas corporation's contribution:

Gas Territory	Percentages
SCG	49.26%
PG&E	42.34%
SDG&E	6.77%
SWG	1.63%

Project Eligibility

❖New all-electric low-income housing

- Single-family and Multifamily
- Targets
  - Disadvantaged communities
  - Low-income communities
  - Tribal communities

- Designed to ensure projects do not result in higher utility bills for residents

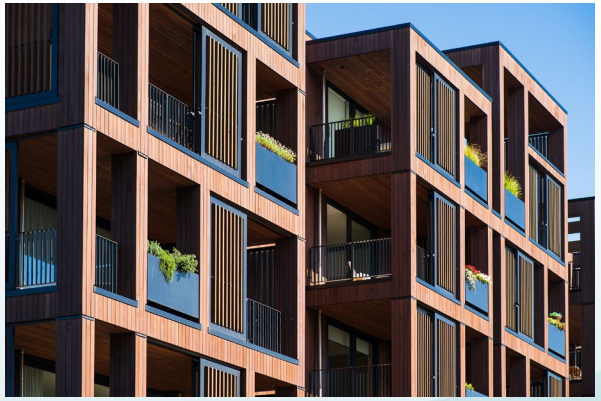
Program Designed to Address Barriers and Low-Income Market Needs

- ✓ Technical assistance in development phase impacts early design decisions and supports the education of contractors
- ✓ New Adopter design award supports new entrants into market, reducing upfront barriers
- ✓ Streamlined application requirements and staged funding awards support an applicant's development timetables and aligns with other financing, incentive and rebate programs
- ✓ Addresses split incentive between resident and owner costs and portions of projects paid by residents versus project owner/manager

Program Overview

Technical Assistance

- Near Zero Emission Building Design support
- Application Assistance
- Education & Outreach

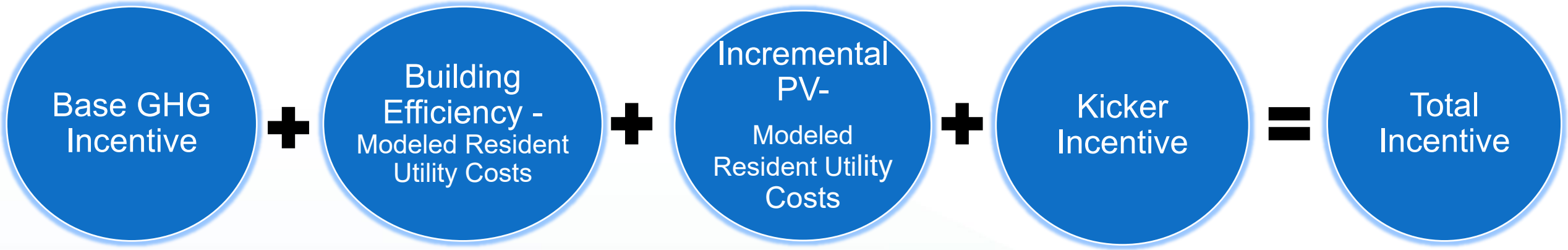


Incentives & Awards

- New Adopter Design Award
- BUILD Incentive
  - GHG Incentive Calculator
  - Modeled resident utility costs savings
- Reservation Process Available
- Progress Payments

Incentive Types

Program Cap: $2 Million Per Applicant



Based on GHG emissions avoided

Based on % above Code

Based on flat rate for PV above Code

Incentive for additional GHG reduction technologies

Kicker Incentives

Grid Flexibility

Lower-GWP Refrigerants

Induction Cooktop

Heat Pump Clothes Dryer

On-Site Energy Storage

Basic, Smart, and Bi-Directional EV Chargers

Stakeholder Engagement

Opportunities for Public Input

- Early Interagency workshops with CPUC
- Focus groups
- Public workshops on BUILD design and guidelines
- Public comment periods

BUILD Implementation Plan and Guidelines

- Apr 2021: CPUC Approved Implementation Plan
- Sep 2021: Preliminary Program Design
- Dec 2021: Initial Draft Guidelines
- Jan 2022: Proposed Final Guidelines
- Feb 2022: Final Guidelines to CEC

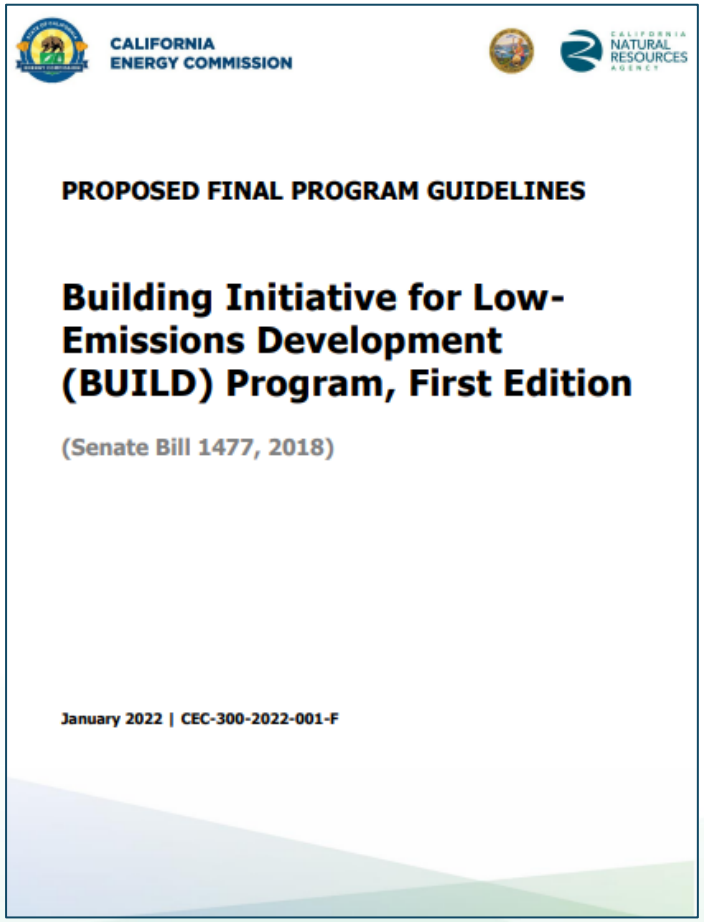
Program Launch

- Consideration by CEC
- Guidelines submitted to CPUC for enactment
- Technical assistance and outreach
- March 1 – Target to accept incentive applications

BUILD
Building Initiative for Low-Emissions Development Program

Staff Recommendation

- Approve BUILD Program Guidelines
- Adopt staff's determination that action is exempt from CEQA



Item 5: Interim Report to the CPUC on Supply-Side Demand Response

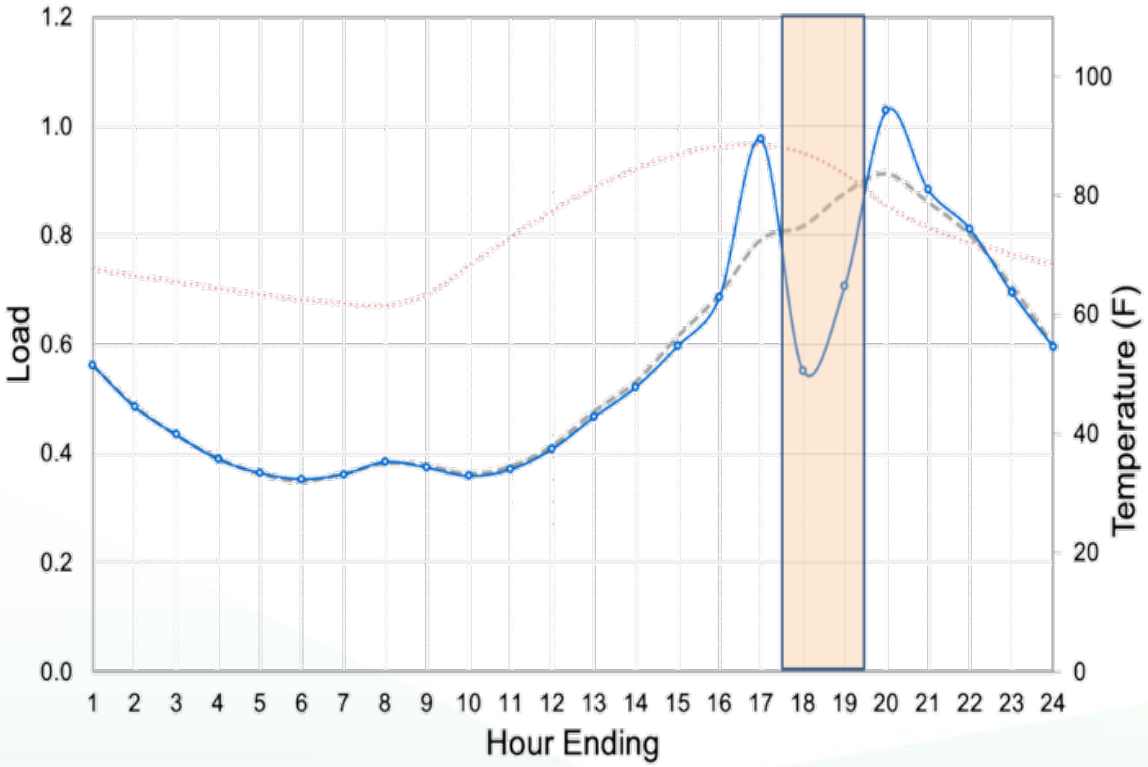
February 16, 2022 Business Meeting

Erik Lyon, Special Advisor
Office of Vice Chair Gunda

Benefits to Californians

Demand Response (DR):

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



Source: Grounded Analytics

Overview

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 CPUC

CEC Working Group Approach

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

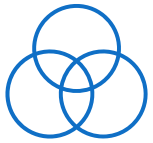
Phase 1

1. Principles Working Group
2. Methodologies Working Group

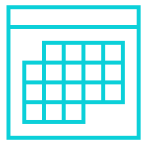
Phase 2: Combined Working Group

Refocused on interim solutions for 2023

Findings Overview



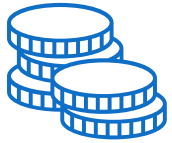
Interrelated challenges for DR need to be addressed holistically



Planned timeline incompatible with developing permanent solution by 2023

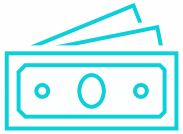
Three proposals are viable to temporarily address key challenges

Key DR Challenges



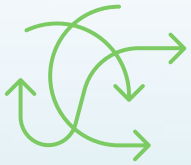
Crediting: Most utility DR resources not subject to ISO's rules for ensuring reliability

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



Incentive Mechanisms: Penalties for underperformance not designed for DR

Settlement Baselines: Baseline methods do not accurately account for weather-sensitive resources

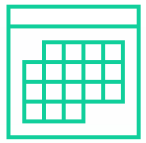


Process: Onerous, expensive, opaque, and inflexible

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 (Utilities)

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

Incentive-based Approach (Third-party Providers)

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

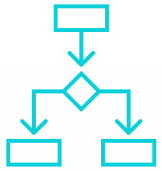
Loss of Load Probability-Weighted LIP (Backup)

How do LIP results changed when hourly results are weighted by relative probability of an outage?

Interim Recommendations

Status quo DR counting methodology to continue for another year

LIP-informed ELCC for utilities and incentive-based approach for third-party providers, with LOLP-weighted LIP as backup for both



Utilities and third-party providers choose between above methodologies

California ISO provide exemptions for LIP-informed ELCC

Direct investor-owned utilities to move DR onto supply plans

Long-term Recommendations

Extend CEC stakeholder working group process

Develop comprehensive, permanent solution for subsequent years

Ensure alignment with changes to resource adequacy framework

Collaborate with CEC staff on QC counting implementation

Item 6: DEKRA Certification, Inc.

February 16, 2022 Business Meeting

Jeffrey Lu, Air Pollution Specialist
Fuels and Transportation Division

Benefits to Californians

Advances vision for easy and grid-integrated charging:

- Improved charger interoperability
- Better-than-gas charging experience
- Electric vehicles as distributed energy resources
- Platform for innovative charging services

charger-vehicle
communication

charger-network
communication

Overview of Vehicle Grid Innovation Lab (ViGIL)

- $1,970,459 grant
- DEKRA will repurpose existing facility in Concord
- ViGIL will:
  - Provide conformance testing for industry standards and protocols
  - Serve as local resource for charging providers and manufacturers
  - Seek to begin operating this fall

Staff Recommendation

- Approve grant agreement
- Adopt staff determination that project is CEQA exempt

Item 7: Agreement with ChargePoint, Inc. for Depot Charging Pantograph Solution (ZVI-21-014)

February 16, 2022 Business Meeting

Esther Odufuwa
Fuels and Transportation Division, Freight & Transit Unit

Benefits to California

- Innovative MD/HD electric charging options
- Accelerated conversion of all MD/HD vehicles to ZEVs
- Reduced CO_2 emissions by ~139,000 MT

Project Overview

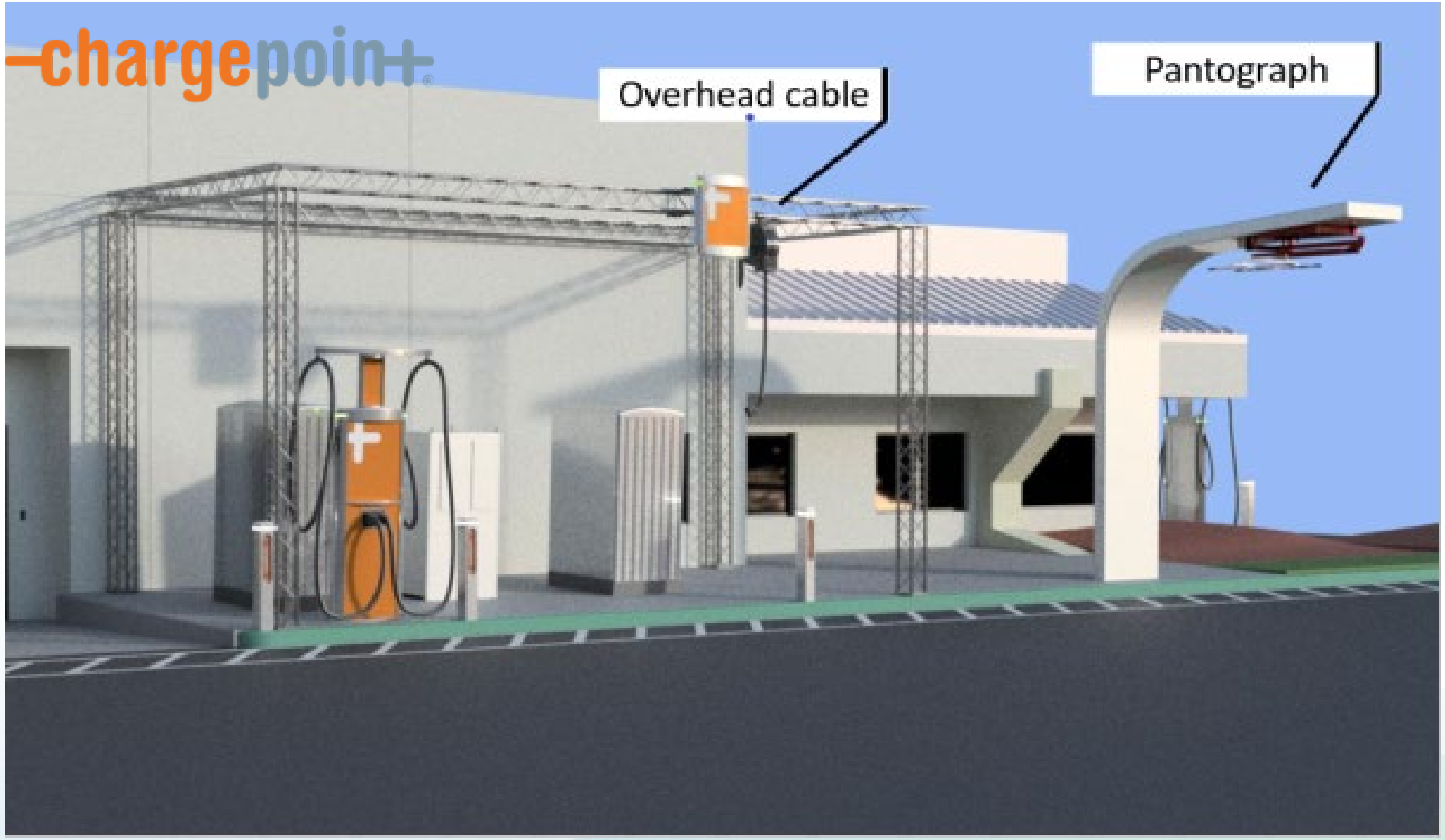


Photo credit: ChargePoint, Inc.

Market Potential

MD/HD Charging Infrastructure

Demonstrates high capacity and quick charging option

MD/HD Electric Vehicles

Increases rate of ZEV deployments, specifically for electric buses and port vehicles

Staff Recommendation

Approve

- Agreement for $1,999,154 with ChargePoint, Inc.

Adopt

- Determination that this action is exempt from CEQA

Item 8: Bringing Rapid Innovation Development to Green Energy (BRIDGE) 2020 (GFO-20-301)

February 16, 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
- **Improve grid resilience and reliability**
- **Increased renewable energy production**

Yotta Energy

Demonstrating Distributed Solar + Storage with Battery Backup Capability for Grid Resilience and Reliability

- Passive thermal maintains batteries at preferred working temperature
- Panel-level storage reduces footprint, is scalable, easy to install
- Reduces soft costs of designing, installing and maintaining energy storage

GreenFire Energy

Steam Dominated GreenLoop: Proof of Concept at The Geysers, CA.

- Geothermal power production without consuming subsurface water
- Allows for revitalization of declining or idle wells
- Enables cost competitive, continuous and flexible power generation

Staff Recommendation

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

Item 9: RockeTruck, Inc.

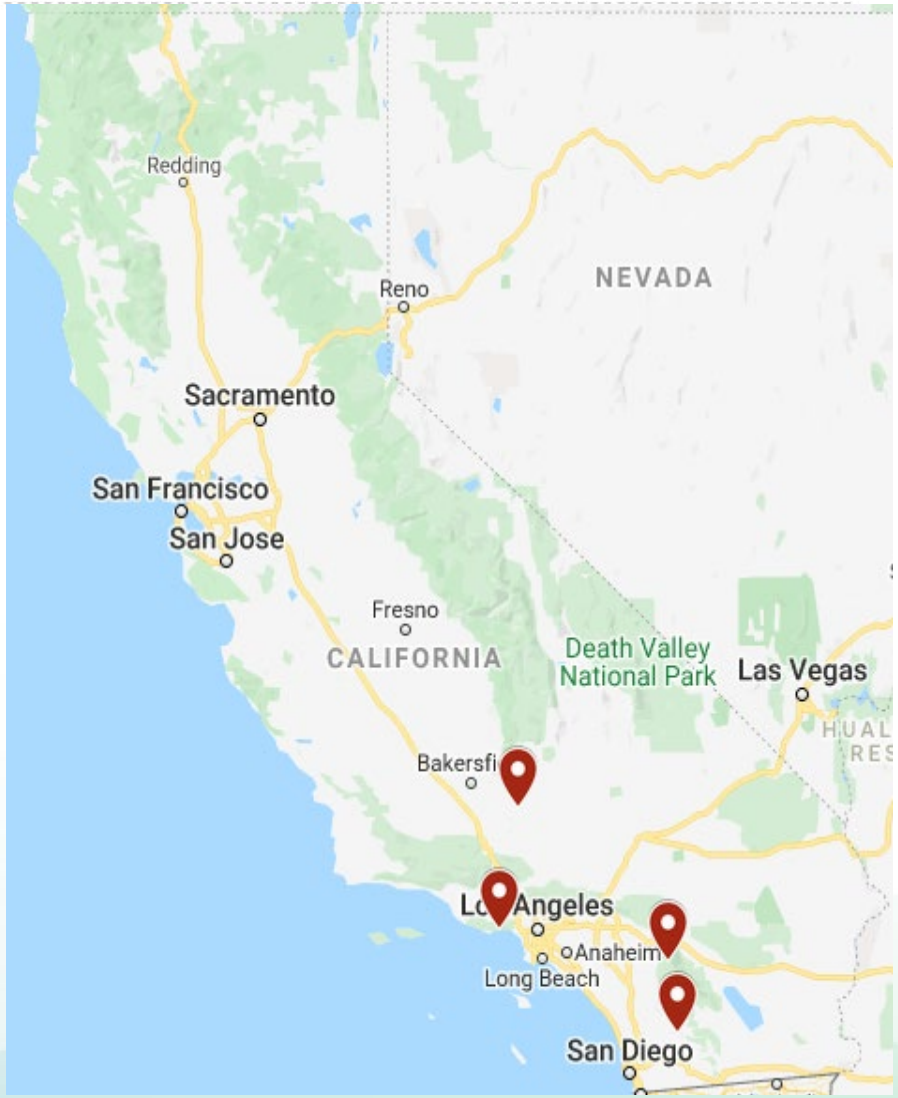
February 16, 2022 Business Meeting

Quenby Lum, Associate Energy Specialist
Energy Research and Development Division
Energy Systems Research Office

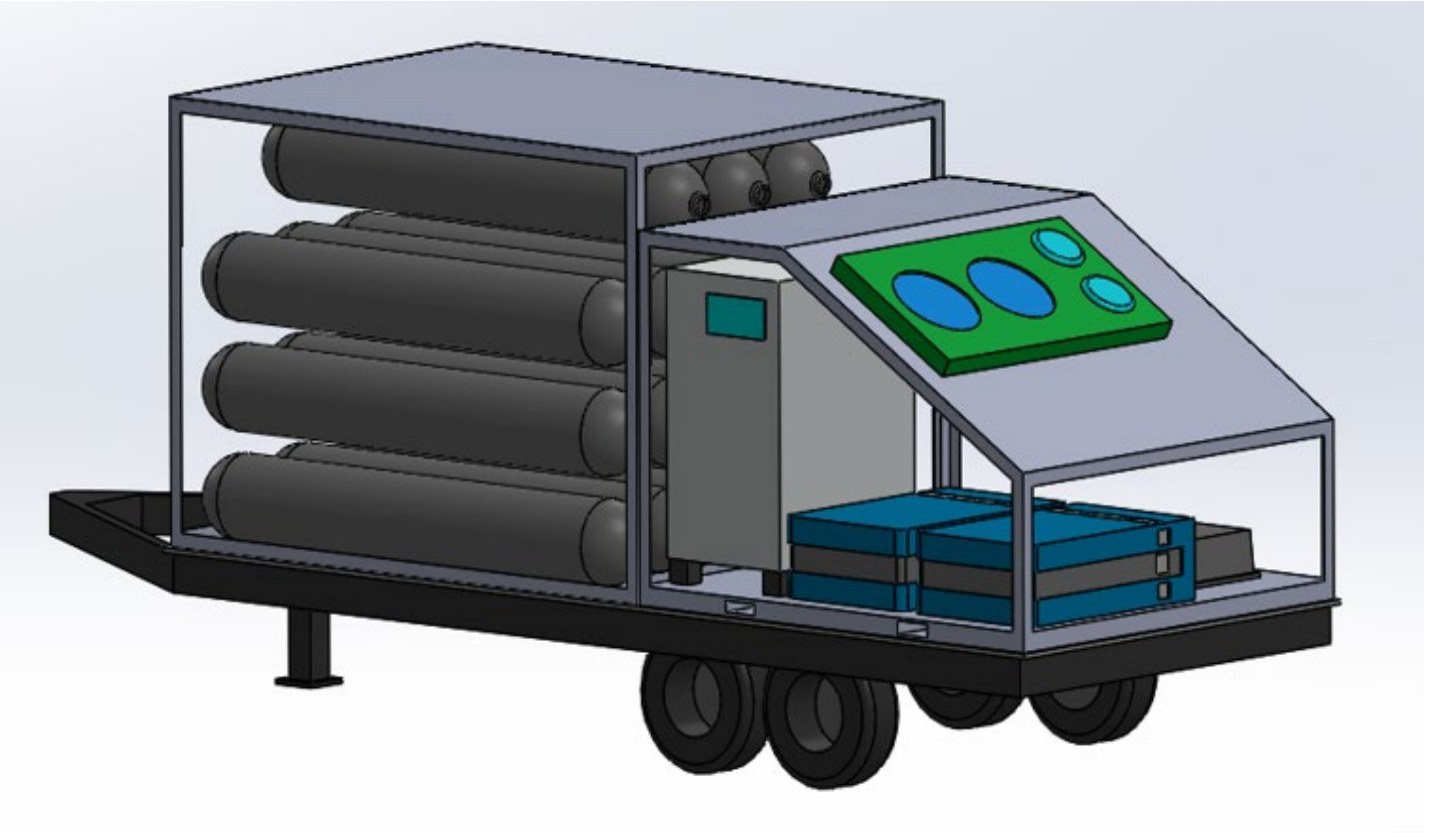
Benefits to Californians

Advances:

- Reliability
- Resiliency
- Safety
- Reduced Emissions
- Equity



Project Overview



Mobile fuel cell generator - concept diagram

RocketTruck

Staff Recommendation

- Approve grant agreement
- Adopt staff's determination that project is exempt from CEQA

Item 10: Proposed Resolutions Approving Two ECAA Loans; City of Eureka and City of San Leandro

February 16, 2022 Business Meeting

Sean Lockwood, Associate Energy Specialist
Renewable Energy Division, Local Assistance and Finance Office

Benefits of ECAA Loans to Californians

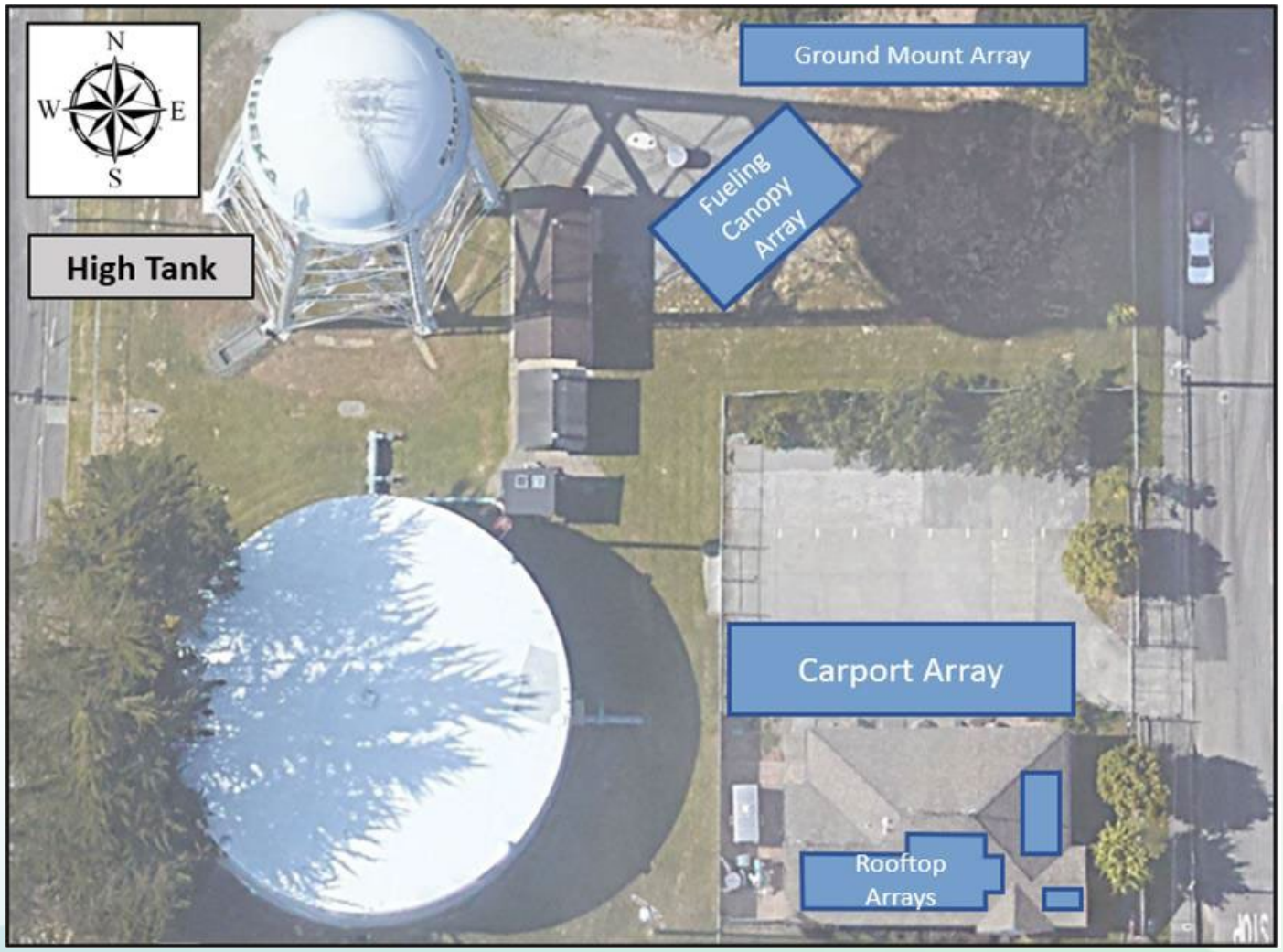
Improves Health Outcomes

Lowers Utility Costs

Creates Green Jobs - Building a Clean Energy Economy

Project Overview – City of Eureka

- $1,392,677 loan at 1%
- LED lighting upgrades and Solar PV installations at City's Water Treatment Plant
- Solar PV installation at City's High Tank site



Project Overview – City of San Leandro

- $1,284,140 loan at 1%
- LED lighting upgrades at 14 city sites
- HVAC upgrades at 4 city sites
- Installation of variable frequency drive for pool pump at City's aquatic center

Project Energy Analysis Summary

Loan Recipient	Loan Amount	Annual Energy Use Savings	Annual Energy Cost Savings
City of Eureka	$1,392,677	525,646 kWh	$94,970
City of San Leandro	$1,284,140	550,871 kWh	$112,402

Staff Recommendation

- Approve loan agreements
- Adopt staff's determination that projects are exempt from CEQA