

**DOCKETED**

<b>Docket Number:</b>	21-BUSMTG-01
<b>Project Title:</b>	Business Meeting Agendas, Transcripts, Minutes, and Public Comments
<b>TN #:</b>	239614
<b>Document Title:</b>	September 8 2021 Business Meeting Presentation
<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>	9/8/2021 1:08:31 AM
<b>Docketed Date:</b>	9/8/2021



**California Energy Commission  
Business Meeting  
September 8, 2021  
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.**



# Get vaccinated. Wear a Mask.

**Your actions save lives**

**Keep California healthy**

**GET VACCINATED**





California ISO

# Sign up for #FlexAlert notifications



**FLEX  
ALERT**



# Remote Compliance

Business Meeting held remotely, consistent with **Executive Order N-08-21** to continue to help California respond to, recover from, and mitigate the impacts of the COVID-19 pandemic. The public can participate in the Business Meeting consistent with the direction in this Executive Order.

For remote participation instructions visit **CEC's Business Meetings webpage:**

<https://www.energy.ca.gov/proceedings/business-meetings>

If Zoom's toll-free phone numbers don't work:

- **Dial: (669) 900-6833**
- **Meeting ID: 938-6923-0237**



# Public Comment Instructions

- Pursuant to **California Code of Regulations Title 20 §1104(e)**, any person may make oral comment on any agenda item.
- Comments may be limited:
  - **to 3 minutes** or less
  - **1 representative** per organization
- Any person wishing to comment on information items or reports (non-voting items) shall reserve their comment for the general public comment portion of the meeting agenda.

## Zoom App/Online

Click “raise hand”

## Telephone

Dial (669) 900-6833 or (888) 475-4499 Enter Webinar ID: 938 6923 0237

- Press \*9 to raise hand
- Press \*6 to (un)mute

## When called upon

Public Advisor will open your line

Unmute, spell name and state affiliation, if any, for the record, then begin your comments



# Consent Calendar a. – e.

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- a. Center for Transportation and the Environment. Contact: Alex Wan
- b. National Association of State Energy Officials (NASEO). Contact: Christine Collopy
- c. Alliance to Save Energy. Contact: Brad Worster
- d. United States Fish and Wildlife Service. Contact: Andrea Stroud
- e. Western Interstate Energy Board. Contact: Christopher McLean



# **Item 2: Order on Process for Battery Storage Systems**

September 8, 2021, Business Meeting

Shawn Pittard, Deputy Director  
Siting, Transmission, and Environmental Protection Division



# Benefits to California

- Address climate change impacts
- Increase grid resiliency and reliability





# Emergency Proclamation Context



Climate change threatening CA's energy supply

- Up to 3,500 MW shortfall in 2021
- Up to 5,000 MW shortfall for summer 2022



# Emergency Proclamation Overview

Authorizes CEC to license new or expanded battery storage systems:

- 20 megawatts or more
- Discharge for at least 2 hours
- Deliver net peak energy by October 31, 2022





# Battery Storage System Licensing

- CEQA suspended
- CEC exclusive licensing authority
- Meet and consult with local and state agencies
- License conditions and monitoring requirements
- Decision delegated to Executive Director
- Decision final – not subject to appeal



# Staff Recommendation

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Adopt Order No. 21-0908-1.



# **Item 3: Procter and Gamble Cogeneration Project (93-AFC-02C)**

September 8, 2021, Business Meeting

Presented by Elizabeth Huber, CME Office Manager  
Mary Dyas, lead Compliance Project Manager  
Lisa DeCarlo, lead Counsel  
Siting, Transmission and Environmental Protection Division



# Project Benefits for California





# Project Overview

Date	Action
<b>11/16/1994</b>	CEC Approved License
<b>3/01/1997</b>	Units Came Online
<b>7/15/2021</b>	Ownership and Name Change Petition Docketed
<b>8/03/2021</b>	Staff Approval of Project Change Docketed
<b>8/05/2021</b>	One Objection Docketed



# Staff Recommendation

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- Approve order for ownership and project name change.



# Item 4: Campbell Cogeneration Project (93-AFC-03C)

September 8, 2021, Business Meeting

Presented by Elizabeth Huber, CME Office Manager  
Mary Dyas, lead Compliance Project Manager  
Lisa DeCarlo, lead Counsel  
Siting, Transmission and Environmental Protection Division



# Project Benefits for California





# Overview

Date	Action
11/20/1994	CEC Approved License
10/30/1997	Units Came Online
7/15/2021	Ownership and Name Change Petition Filed
8/03/2021	Staff Approval of Project Change Docketed
8/05/2021	One Objection Docketed



# Staff Recommendation

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- Approve order for ownership and project name change.



# Item 5: Lithium Valley

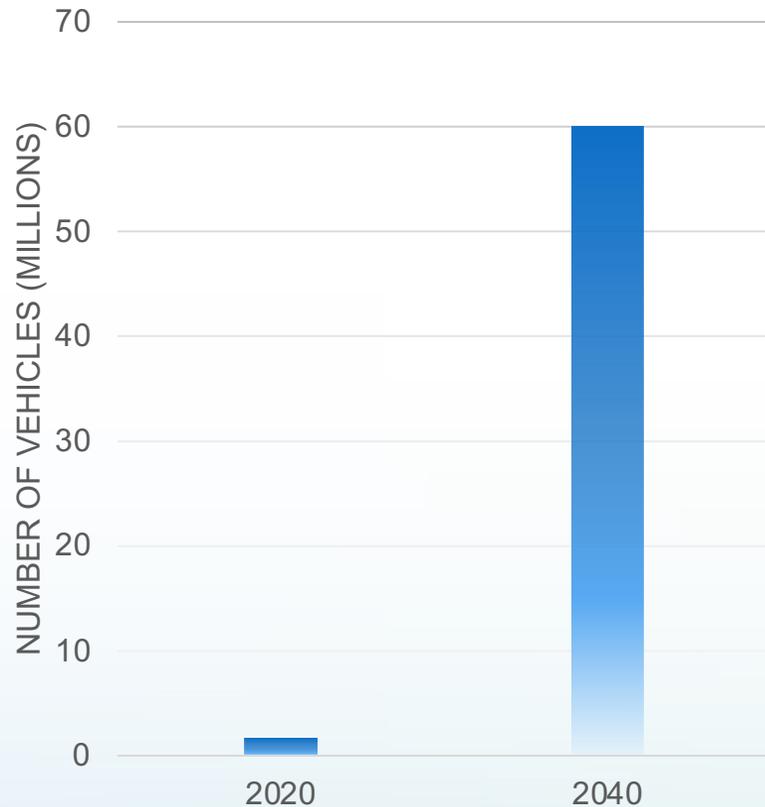
September 8, 2021 Business Meeting

Lauren Illa, Undergraduate Fellow  
Office of Chair Hochschild

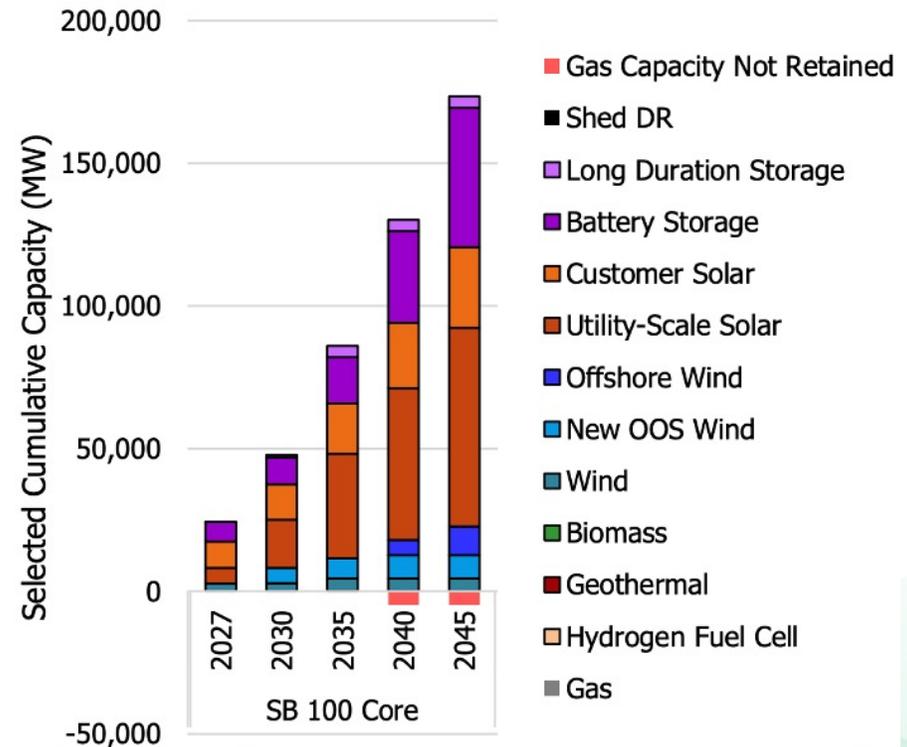


# EVs Are Driving Lithium Demand

## GLOBAL EV MARKET GROWTH

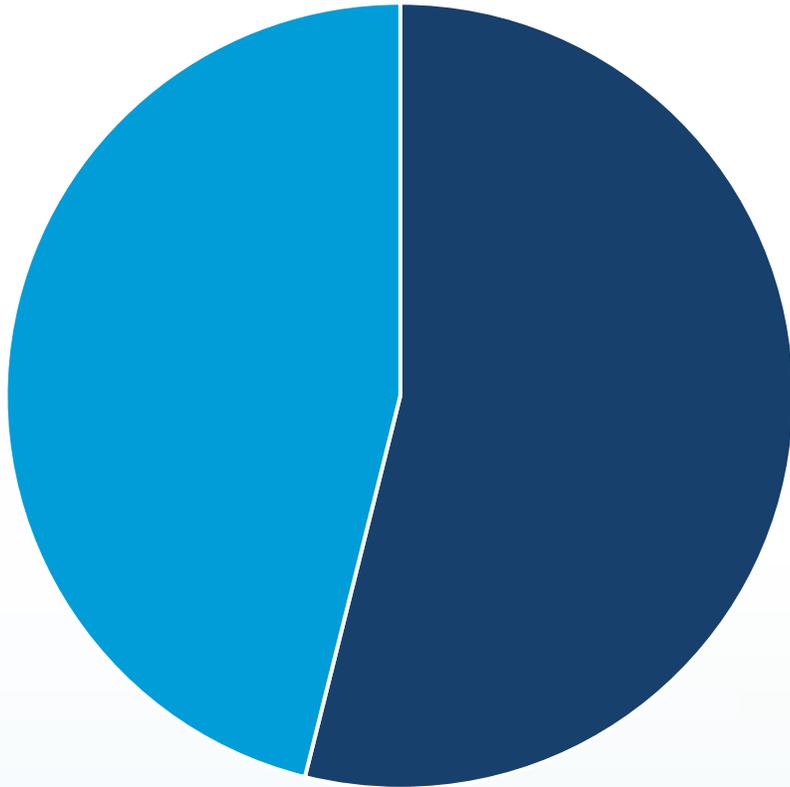


## Cumulative Capacity Additions for the SB 100 Core Scenario





# Current Lithium Extraction Methods

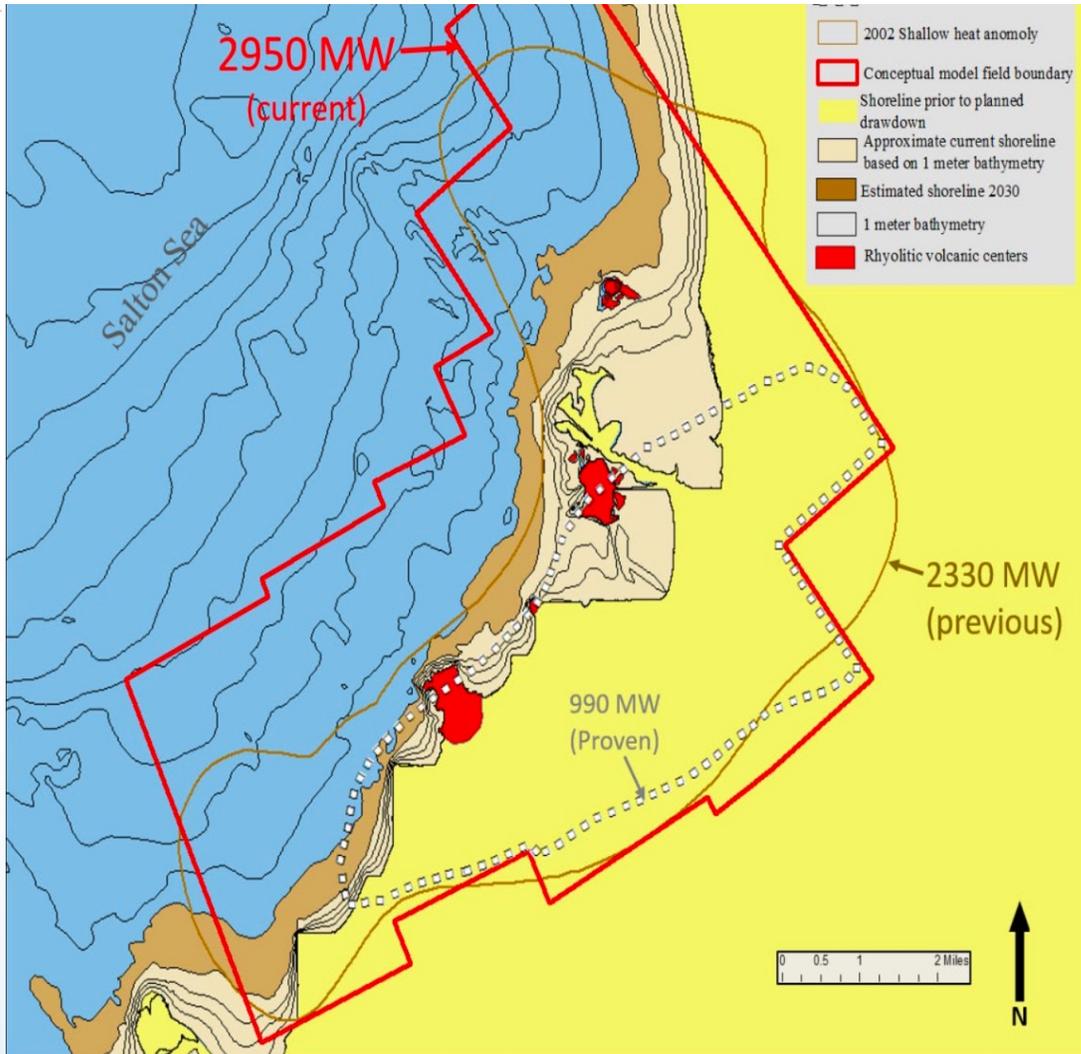


- Hardrock Mining
- Evaporative Brine Processing





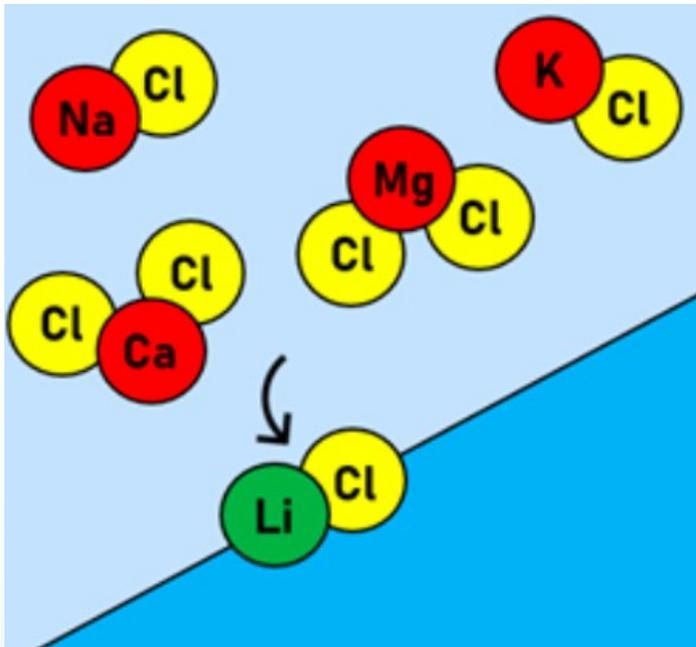
# Lithium Resource Under the Salton Sea



- Salton Sea Known Geothermal Resource Area (KGRA)
- Average lithium concentration: **200 mg/kg**
- Potential inferred lithium resource: **15 million metric tons**
  - Global production: 300,000 metric tons of lithium carbonate in 2018

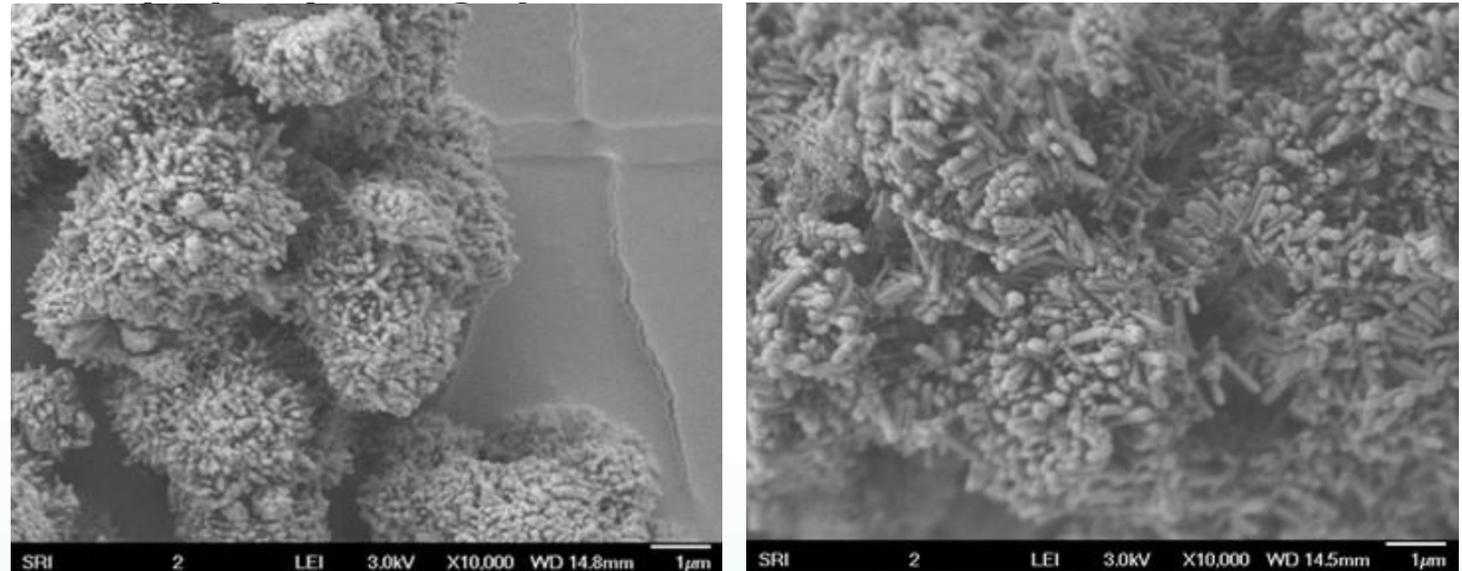
# Review of Research on Direct Lithium Extraction Technologies

## ADSORPTION



LiCl molecules physically adsorbing to a sorbent (Jade Cove Partners)

## ION EXCHANGE



Nanostructured HMO sorbent (Ventura et al., 2020)



# Average Lithium Production Costs

**Geothermal  
Brines  
\$4,000**

**Evaporation  
Ponds  
\$5,580**

**Hardrock Mining  
\$4,540 -  
\$5,040**

Source: [Techno-Economic Analysis of Lithium Extraction from Geothermal Brines \(Warren, 2021\)](#)



# CEC Demonstration Projects at Salton Sea

- Berkshire Hathaway Energy Renewables Minerals Demonstration Project
- Controlled Thermal Resources Hell's Pilot Plant
- Materials Research Pilot Plant



Elmore Geothermal Plant (Berkshire Hathaway Energy Renewables)



**Thank You!**



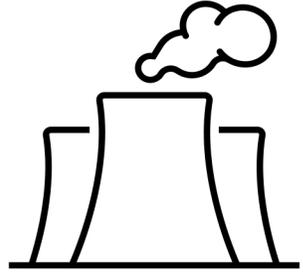
# Item 6: MIDAS Status Update

September 8, 2021 Business Meeting

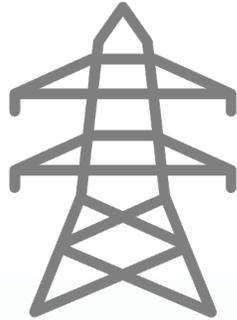
Morgan Shepherd, Energy Analyst  
Existing Buildings Office, Efficiency Division



# Benefits to Californians



**Decrease emissions**



**Increase grid reliability**

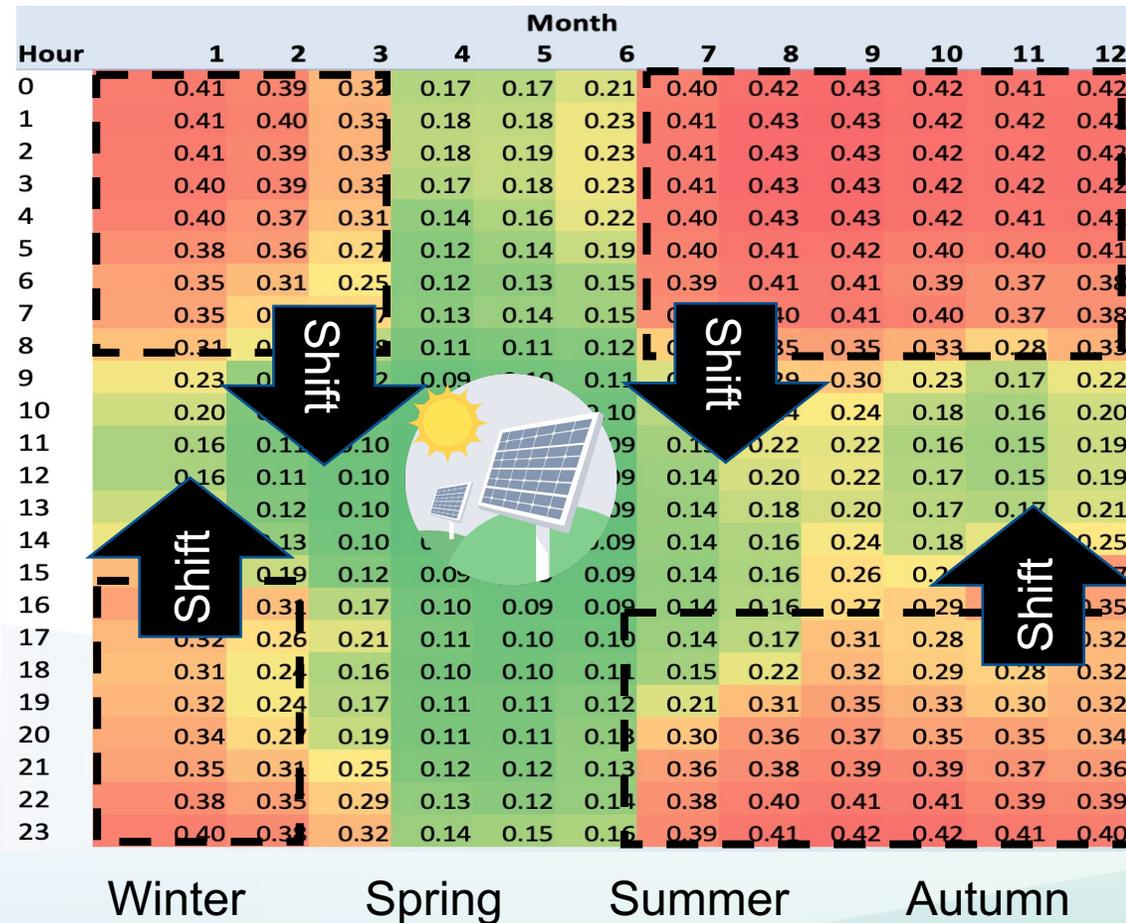


**Decrease customer bills**



# Background

2021 Hourly Marginal Emissions Intensity (MT CO<sub>2</sub>/MWh)



**Shift electricity use from carbon intensive hours...**

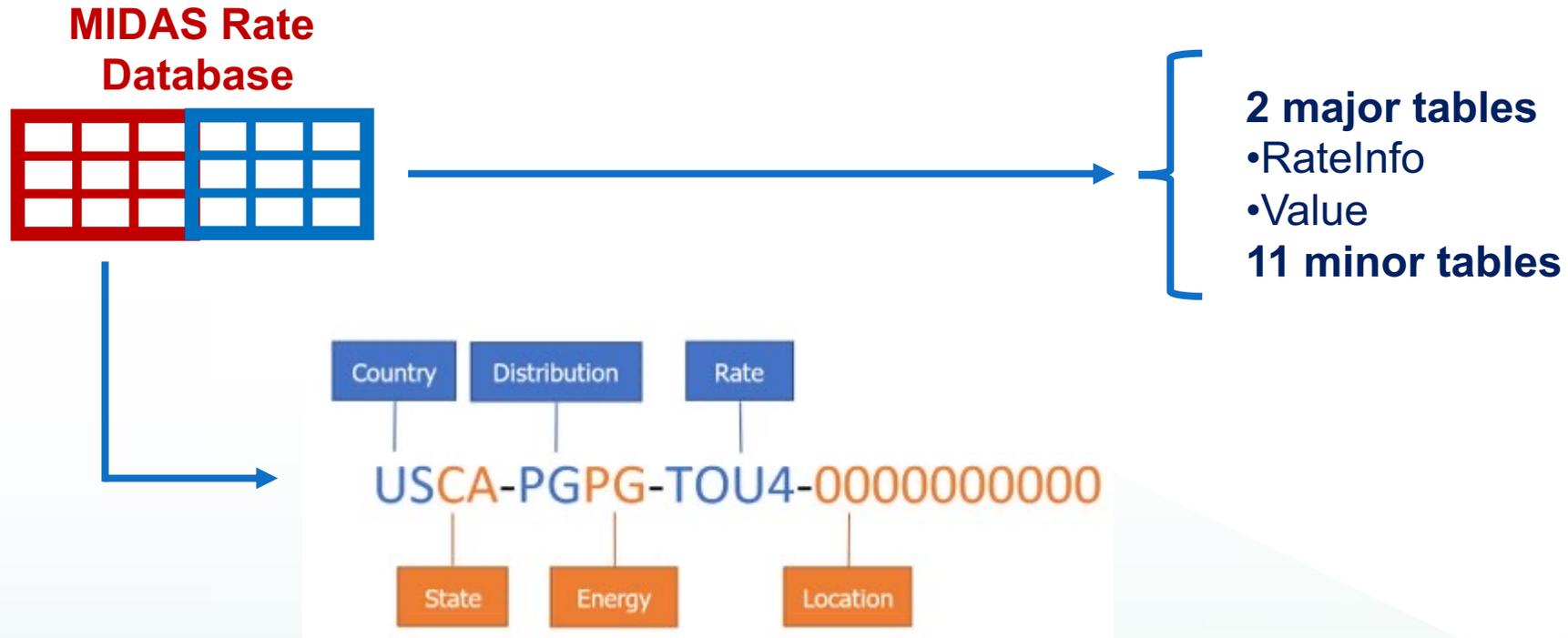
**...to low carbon hours (9 a.m. to 3 p.m.)**

## HOW?

Publish price and emissions signals for automation devices to reschedule default run-times



# MIDAS Overview





# Progress to date

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- ✓ Preliminary Testing
- ✓ TOU Rates Uploaded
- ✓ FlexAlerts Signal
- ✓ GHG Signals from SGIP
- ✓ Limited Release for Public and Stakeholder Evaluation
- ✓ Public workshop on 8/27/21



# Next Steps



Review Public Comments

**September 2021**



Load Management Standards &  
Flexible Demand Appliance Standards

**2022 / 2024**



MIDAS Locational Hourly Pricing

**TBD (proposed)**



Public Broadcast

**TBD (under study)**

<https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=19-OIR-01>



# **Item 7: 2019 Public Domain Residential and Nonresidential Compliance Software and Residential and Nonresidential Alternative Calculation Method Reference Manual Updates**

September 8, 2021 Business Meeting

RJ Wichert, Mechanical Engineer  
Efficiency Division, Building Standards Office



# Benefits to Californians

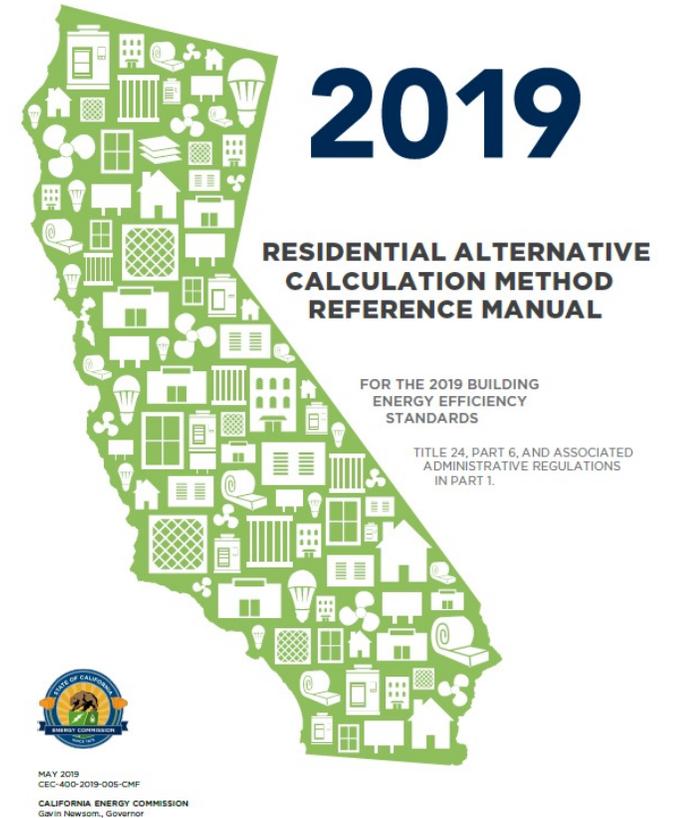
- Expands compliance modeling tools to account for building decarbonization
- Improves modeling accuracy





# Overview

- Corrects indoor air quality baselines
- Updates nonresidential HVAC baseline
- Expands HPWH options
- Updates CBECC-Com EnergyPlus version





# Proposed Action

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- Approve CBECC-Res and CBECC-Com 2019.2.0
- Approve Residential and Nonresidential ACM Reference Manuals



# **Item 8: Revised 2022 Summer Stack Analysis**

September 8, 2021 Business Meeting

Angela Tanghetti  
Energy Assessments Division



# Midterm Reliability Analysis vs Stack Analysis

## LOLE Analysis

**Purpose:** Inform procurement need

**Uses distributions of conditions**

- Demand profiles
- Wind and solar profiles
- Randomized outages

**Challenge:**

- Dependent on historic weather patterns which may not fully reflect climate change

## Stack Analysis

**Purpose:** Inform need for contingencies

**Provides potential of average and extreme:**

- High demand days like summer 2020
- Drought impacts on hydro
- Capped imports

**Challenge:**

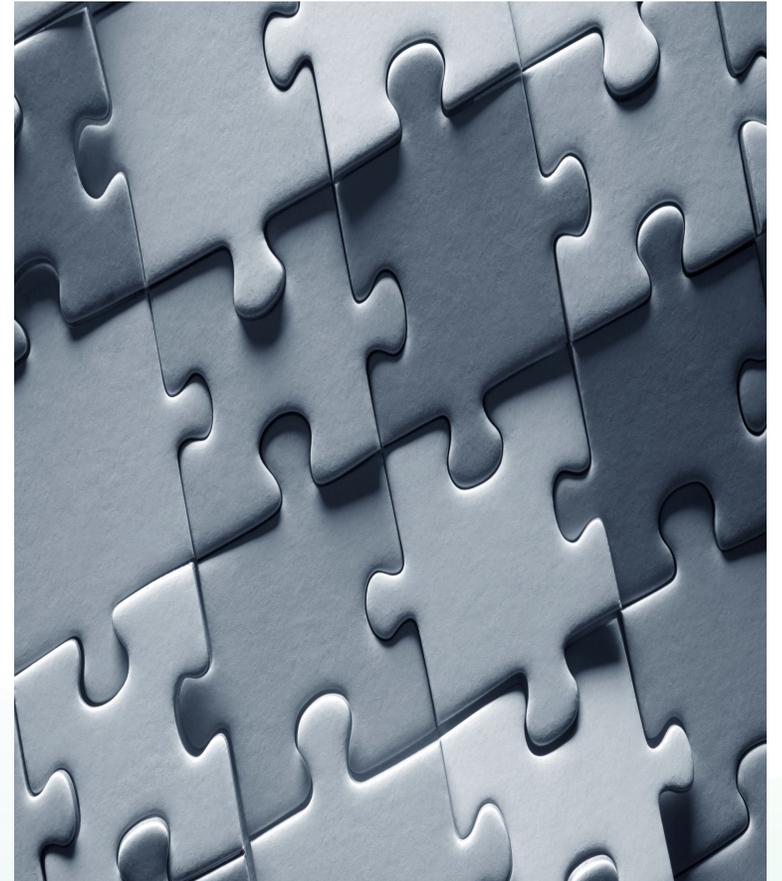
- Assumptions designed to capture extreme weather events



# Stakeholder Comments

## Why develop 2022 stack analysis and probability analysis?

- Provides situational awareness in the event of west-wide extreme weather and prolonged drought
- Provides point of reference for consideration in other energy related proceedings
- Provides insight as to amount and duration of need for contingency resource options



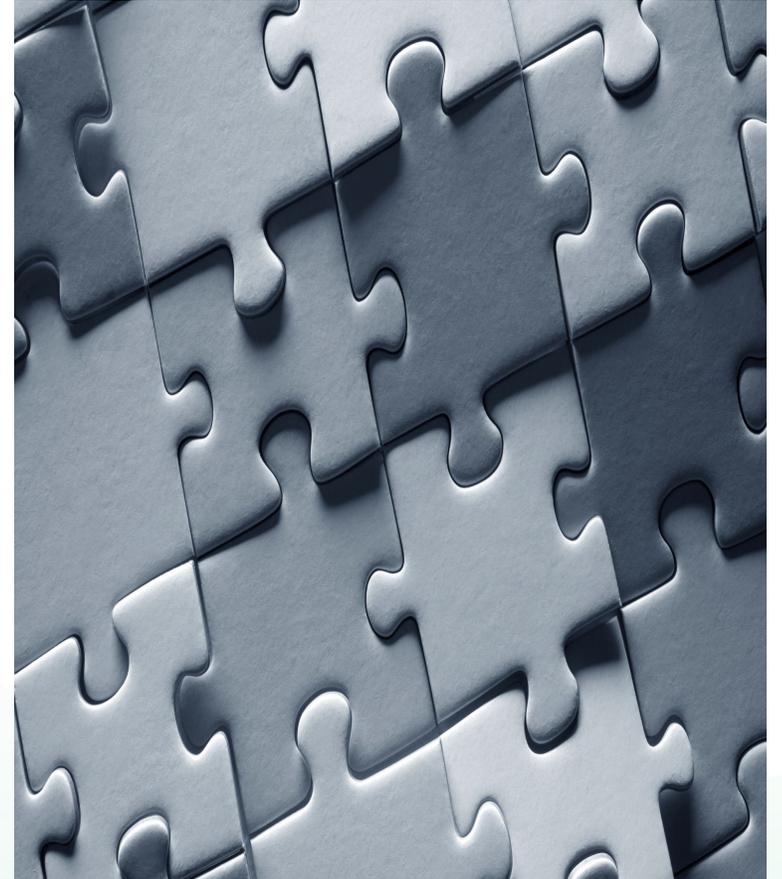


# Stakeholder Comments

## Assumptions are overly conservative

- Hydro derate too high
  - Considers specific drought year conditions
- 7.5% forced outages may be high
  - Extreme weather, fire and smoke can adversely impact supply
- No economic imports is too conservative
  - Assumes west-wide extreme weather event

Requests for more specific data and assumptions



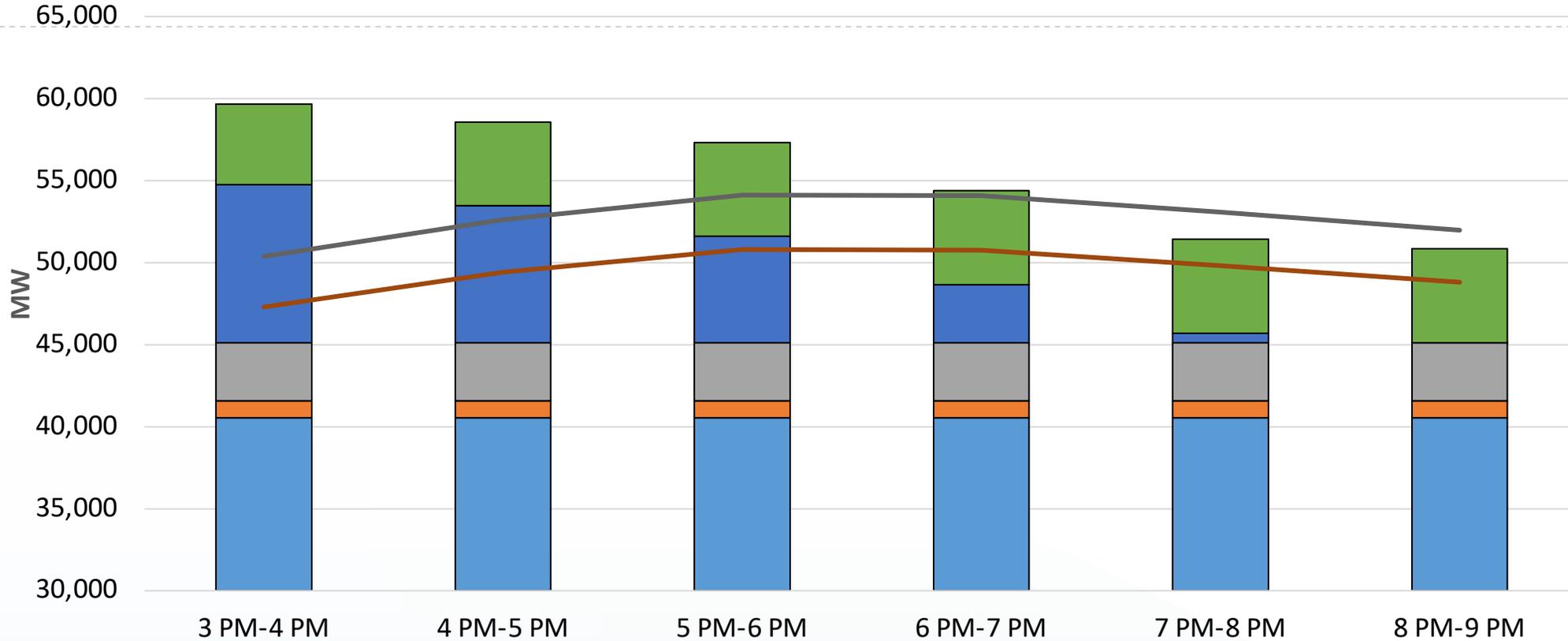


# Summer 2022 Stack Analysis Updates

- Incorporates additional CPUC Procurement and Retirements
  - + 878 MW (up from 556 MW) CPUC emergency procurement July 2022
  - + 1,270 MW (up from 840 MW) CPUC ordered procurement August 2022
  - + 363 MW (up from 0 MW) CPUC ordered procurement September 2022
  - 834 MW (unchanged from draft) Redondo Beach Retirement
- Incorporates additional Demand Response and Imports for Publicly Owned Utilities
  - + 478 MW July 2022
  - + 398 MW August 2022
  - + 385 MW September 2022



# July 2022



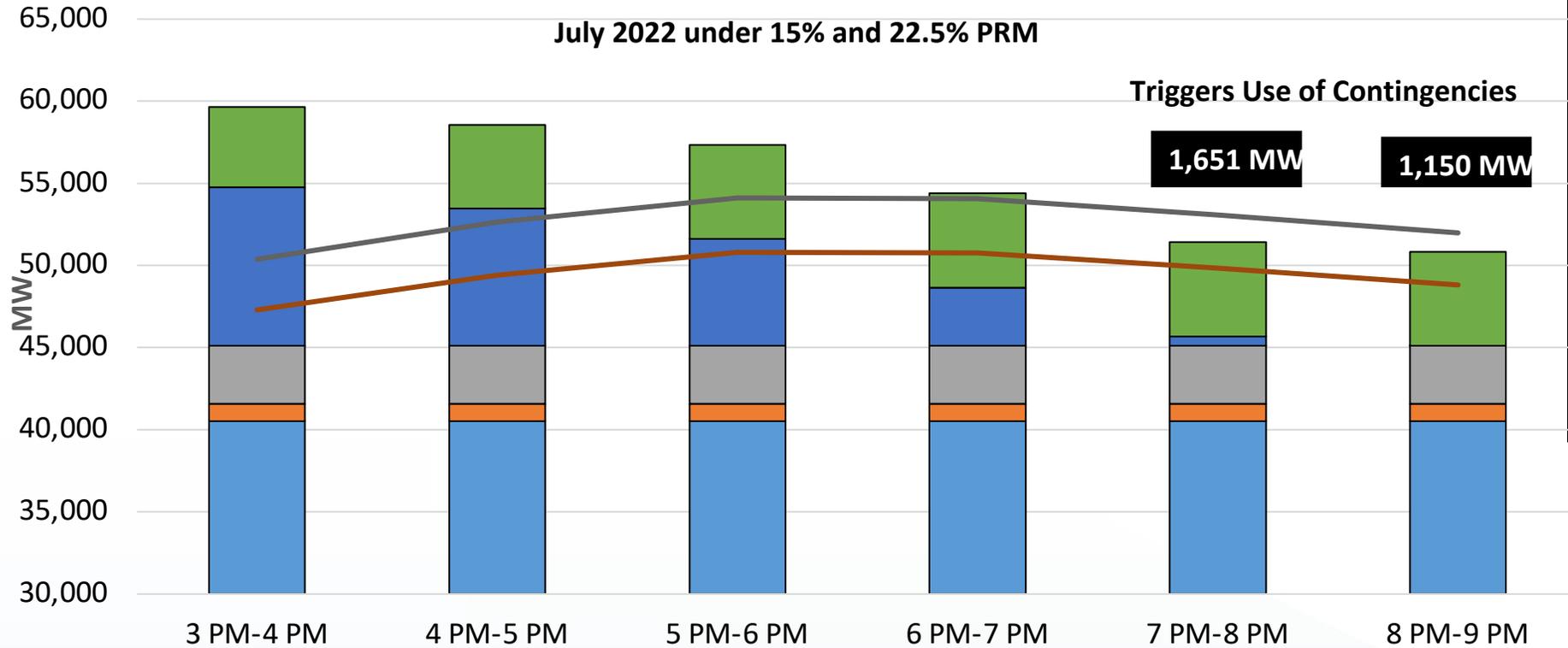
- Avg. Imports, RA Contracts
- Solar (Plexos Shapes)
- New Resources & CPUC Expedited Procurement (exc. Solar)
- Existing DR
- Drought Adj Existing Resources (exc. Solar, DR)
- Drought Adj 1-in-2 peak demand + 15% PRM
- Drought Adj. 1-in-2 peak demand + 22.5% PRM



# July 2022

Revised Stack Analysis compared to Draft

- Eliminated contingencies in the 6PM-7PM hour for the 22.5% PRM
- Reduced contingencies in all other hours by ~885 MW

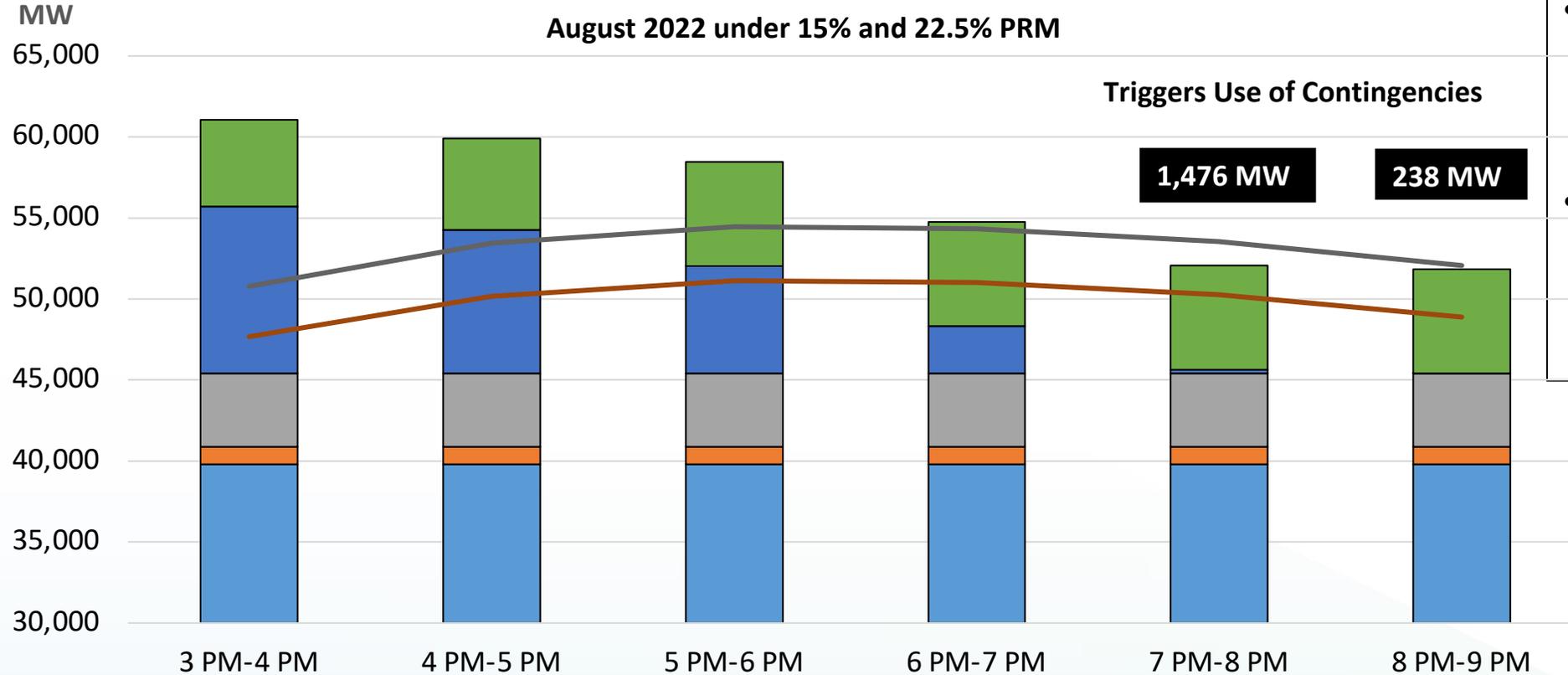


- Hour PDT**
- Avg. Imports, RA Contracts
  - Solar (Plexos Shapes)
  - New Resources & CPUC Expedited Procurement (exc. Solar)
  - Existing DR
  - Drought Adj Existing Resources (exc. Solar, DR)
  - Drought Adj 1-in-2 peak demand + 15% PRM
  - Drought Adj. 1-in-2 peak demand + 22.5% PRM



# August 2022

## Revised Stack Analysis compared to Draft



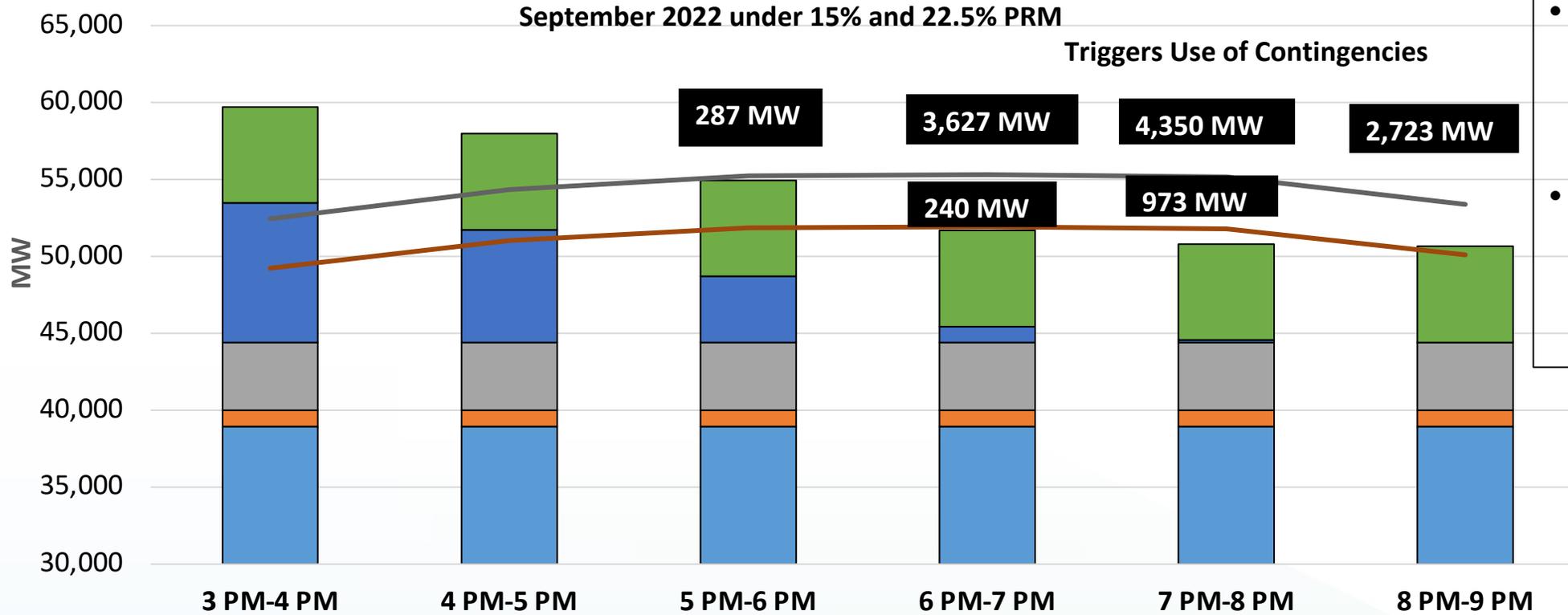
- Avg. Imports, RA Contracts
- Solar (Plexos Shapes)
- New Resources & CPUC Expedited Procurement (exc. Solar)
- Existing DR
- Drought Adj Existing Resources (exc. Solar, DR)
- Drought Adj. 1-in-2 peak demand + 15% PRM
- Drought Adj. 1-in-2 peak demand + 22.5% PRM

- Eliminated contingencies in the 6PM-7PM hour for the 22.5% PRM
- Reduced contingencies in all other hours by ~1,004 MW

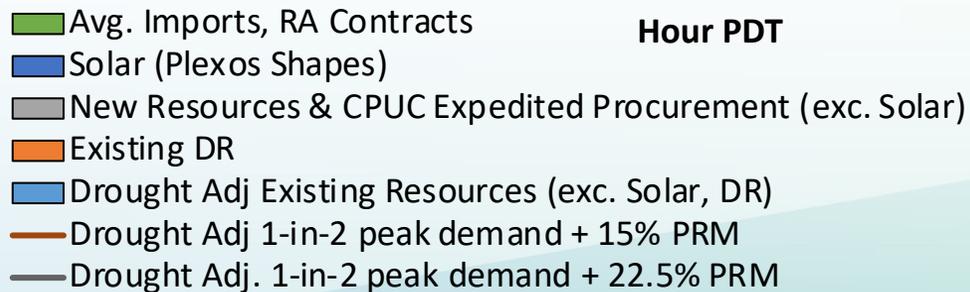


# September 2022

## Revised Stack Analysis compared to Draft



- Eliminated contingencies in the 8PM-9PM hour for the 15% PRM
- Reduced contingencies in all other hours by ~924 MW





# Recommendation

**Adopt 2022 Summer Stack Analysis.**

**Docketed presentations  
and revised white paper:  
Docket #: 21-ESR-01**





# **Item 9: Association for Energy Affordability, Inc. Building Initiative for Low-Emissions Development Program Technical Assistance Provider Contract (500-21-001)**

September 8, 2021 Business Meeting

Myoung-Ae Jones  
Renewable Energy Division



# Benefits to California

Decarbonization &  
GHG Emission  
Reduction

Clean Energy  
New Housing  
for  
Low-Income Californians

Market Transformation  
& Adoption of  
Near-Zero Emission  
Technologies



Almond Court, Wasco, CA Low-rise Affordable MFH  
Heat pump water heater, high efficiency ducted heat pumps



Coliseum Place, Oakland, CA All-electric affordable mid-rise  
Decentralized heat pump hot water system



# Technical Assistance Agreement

Agreement	Detail
Terms	<ul style="list-style-type: none"><li>• \$6 million</li><li>• 6 years</li><li>• Option to add \$2 million</li></ul>
Purpose	<ul style="list-style-type: none"><li>• Absorb building developer's soft cost</li><li>• Transfer knowledge</li><li>• Advance access and equity</li></ul>



# Contractor Team

Prime Contractor	Subcontractors	Secondary Subcontractor
Association for Energy Affordability, Inc.	TRC Engineers, Inc.	
	California Housing Partnership Corporation	
	Highlands Diversified Inc.	The Ortiz Group, LLC
	Celery Design Collaborative LLC	
	David Baker Architects	
	Mithun, Inc.	
	SmithGroup Architects and Engineers	
	Integral Group, Inc.	



# Staff Recommendation

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- Approve agreement with Association for Energy Affordability, Inc.
- Adopt determination that Agreement is exempt from CEQA



# Item 10: California Department of Food and Agriculture

September 8, 2021 Business Meeting

Sharon Purewal, Associate Energy Specialist  
Advanced Vehicle Infrastructure Office, Fuels and Transportation Division



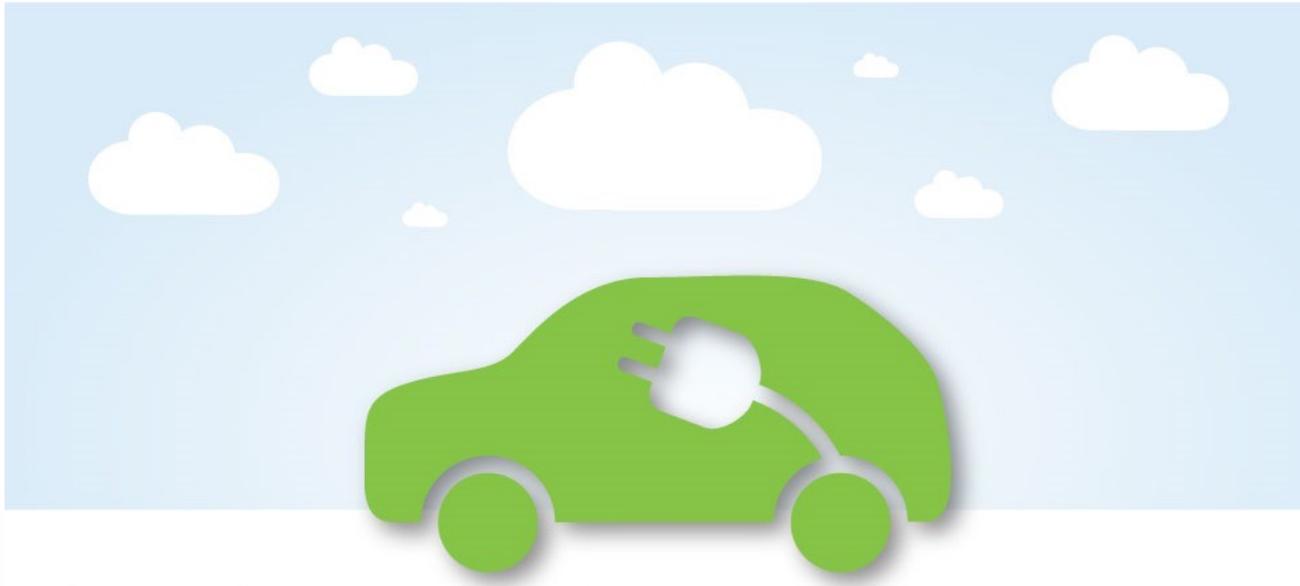
# Benefits to Californians.

- **Standardize** ZEV fueling infrastructure
- **Support** counties without field testing access
- **Assure** equity





# Overview



- California Department of Food and Agriculture will procure certified field standards to:
  - Test and verify commercial electric vehicle supply equipment
  - Test and verify commercial hydrogen fueling systems



# Staff Recommendation

- Approve \$401,580 to enter interagency contract with California Department of Food and Agriculture
- Approve staff's determination that this action is exempt from CEQA





# **Item 11: Blueprints for MD/HD ZEV Infrastructure (GFO-20-601)**

Kate Reid, Air Resources Engineer  
Fuels and Transportation Division  
Advanced Fuels & Vehicle Technologies Office, Freight & Transit Unit



# Benefits to California

## Will Enable:

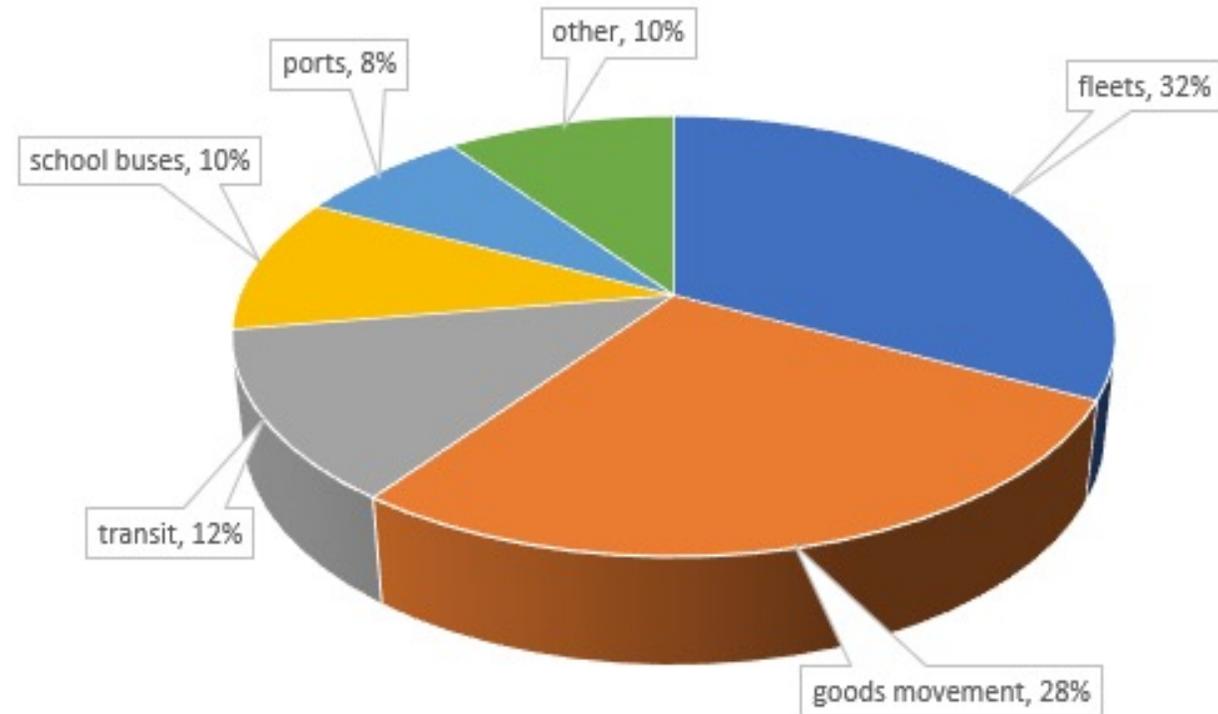
- Roadmaps
- Resiliency
- Replicability
- Compliance





# Market Potential

## Vehicle Sectors Addressed:





# Project Overview

## Sacramento Municipal Utility District (SMUD) (ARV-21-032)

MD/HD electric charging and hydrogen refueling  
infrastructure for SMUD service territory





# Project Overview

## City of Culver City (ARV-21-033)

MD/HD electric charging infrastructure for Culver City's transit fleet

*Culver* **CITY**  
Transportation Department

Mobility Planning • CityBus • CityShare • CityRide • CityFleet





# Project Overview.

## CALSTART (ARV-21-034)

- MD/HD electric charging infrastructure in and around the City of Porterville
- Private fleet use of public charging infrastructure





# Project Overview.

## The Redwood Coast Energy Authority (ARV-21-035)

- MD/HD electric charging and hydrogen refueling infrastructure for Humboldt County
- Will benefit low-income and DACs



REDWOOD COAST  
**Energy Authority**



# Staff Recommendation.

## Approve

- 4 grant agreements

## Adopt

- Staff's determination that projects are exempt from CEQA



# **Item 12: Agreement with WattEV, Inc. for Public MD/HD Electric Truck Stop (ARV-21-025)**

September 8, 2021 Business Meeting

Matthew Kozuch, Air Pollution Specialist  
Fuels and Transportation Division, Freight & Transit Unit



# Benefits to California

## Enables:

- accessible MD/HD public electric charging options
- progress converting all MD/HD vehicles to ZE
- targeted emission reductions in Bakersfield area

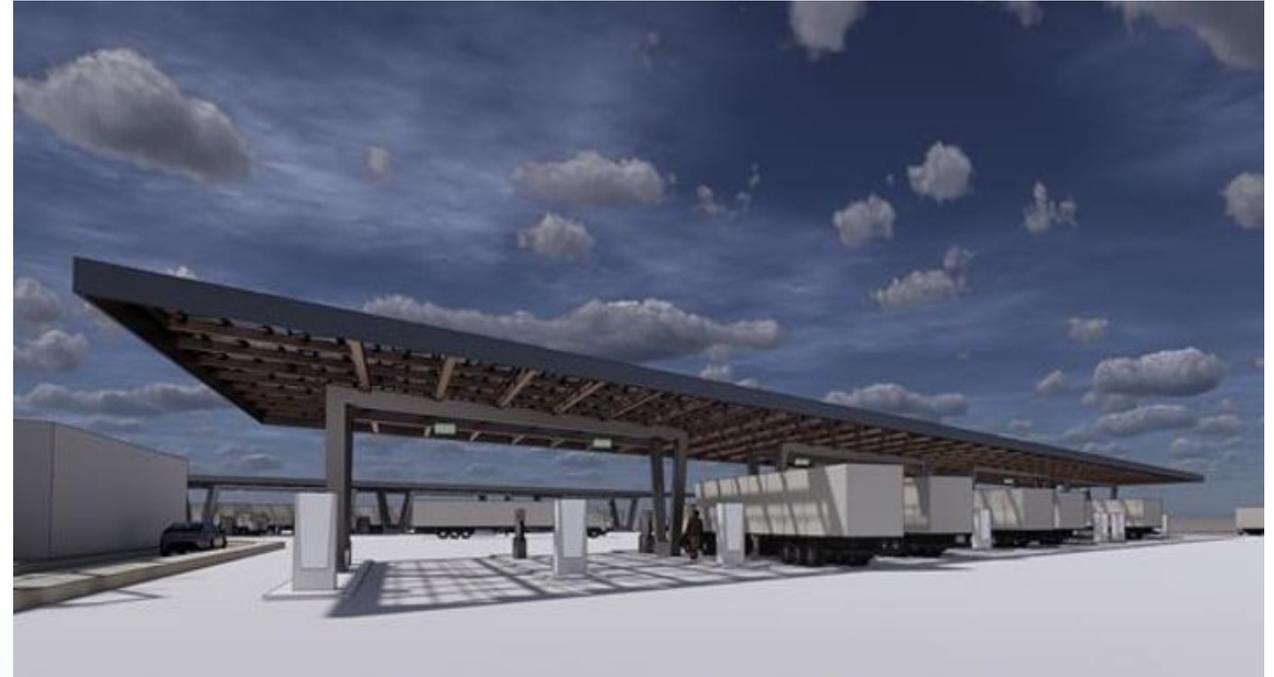




# Project Overview

## WattEV, Inc. will:

- develop public charging facility for MD/HD BEVs
- demonstrate business model for continued operation
- deploy at least 10 trucks making daily use of facility



**WattEV**

**POWER ELECTRONICS**

**JTI**  
ELECTRICAL ENGINEERING SERVICES & CONTROLS  
Providing Innovative Engineered Solutions

**CCAC**  
CENTRAL CALIFORNIA  
ASTHMA COLLABORATIVE

**San Joaquin Valley**  
AIR POLLUTION CONTROL DISTRICT

**DAIMLER**

**gna** CLEAN TRANSPORTATION  
& ENERGY CONSULTANTS



**greenlots**



# Market Potential

## Public Charging Stations

**Provides sustainable model for new electric truck stops**

## MD/HD Infrastructure

**Demonstrates higher capacity charging options**

## MD/HD Vehicles

**Establishes reliable charging for nearby fleet operators**



# Staff Recommendation

## Approve

- Agreement for \$1,000,000 with WattEV, Inc.

## Adopt

- Determination that this action is exempt from CEQA



# **Item 13: Evaluating Bi-Directional Energy Transfers and Distributed Energy Resource Integration for Medium- and Heavy-Duty Fleet Electrification**

September 08, 2021, Business Meeting

**Elise Ersoy**

Electric Generation System Program Specialist  
*Energy Research and Development Division*



# Benefits to Californians

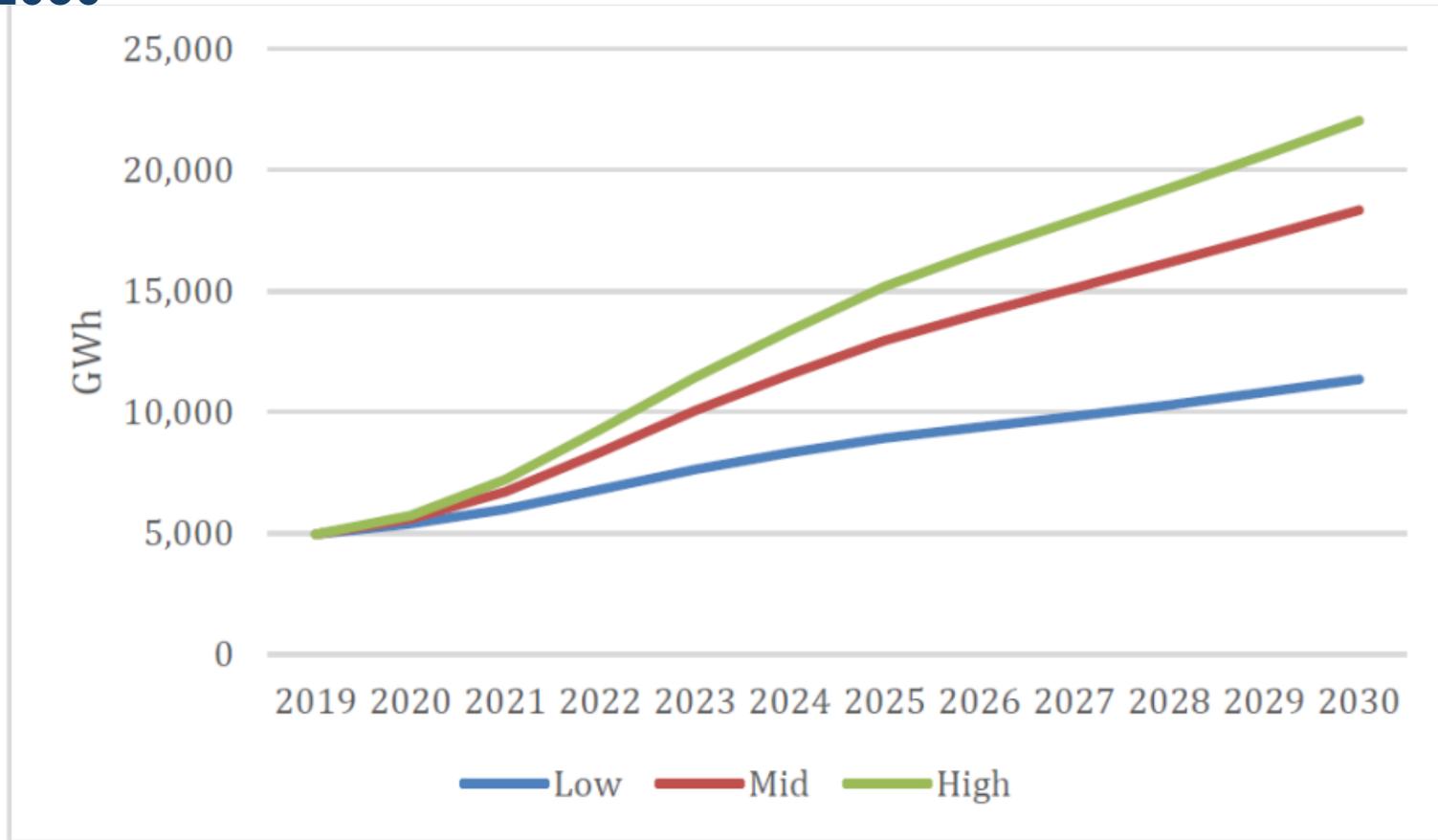
- Reduce stress on grid
- Increase use of distributed energy resources
- Reduce charging costs
- Provide site and community resilience
- Maximize emissions reductions





# Purpose of Solicitation

## Three Scenarios of Transportation Energy Demand Through 2030





# Watt EV



## WattEV

**21<sup>st</sup> Century Truck Stop**  
**1st MD/HD eTruckStop in CA**





# Staff Recommendation.

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

