

DOCKETED

Docket Number:	21-BUSMTG-01
Project Title:	Business Meeting Agendas, Transcripts, Minutes, and Public Comments
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Document Title:	Presentation - August 11 2021 Business Meeting
Description:	N/A
Filer:	Dorothy Murimi
Organization:	California Energy Commission
Submitter Role:	Public Advisor
Submission Date:	8/11/2021 8:20:36 AM
Docketed Date:	8/11/2021



**California Energy Commission
Business Meeting
August 11, 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.**



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



Item 1 a. - c.: Consent Calendar

- a. California Clean Energy Fund dba CalCEF Ventures. Contact: Joshua Croft
- b. Huntington Beach Energy Project (12-AFC-02C). Contact: Joseph Douglas
- c. California Schools Healthy Air, Plumbing, and Efficiency Program (CalSHAPE) (20-RENEW-01). Contact: Jonathan Fong



Item 2: Update on Russell City Energy Center

August 11, 2021, Business Meeting

Presented by Elizabeth Huber, CME Office Manager, Siting, Transmission and Environmental Protection Division, and
Kelly McAdoo, Hayward City Manager, Hayward, California



Requirements Under the CEC-Approved Order





Joint Agency Working Group Activities

Date	Action
7/15/2021	CEC approves temporary modification with specific conditions
7/16/2021	Establish Joint Agency Working Group with City of Hayward
7/22/2021	Launch Joint Agency Weekly Meetings
8/03/2021	CEC/CPUC/CUPA Inspection Team Meeting
8/05/2021	CPUC/Calpine presentations on 2019 Audit



Outcomes and Opportunities



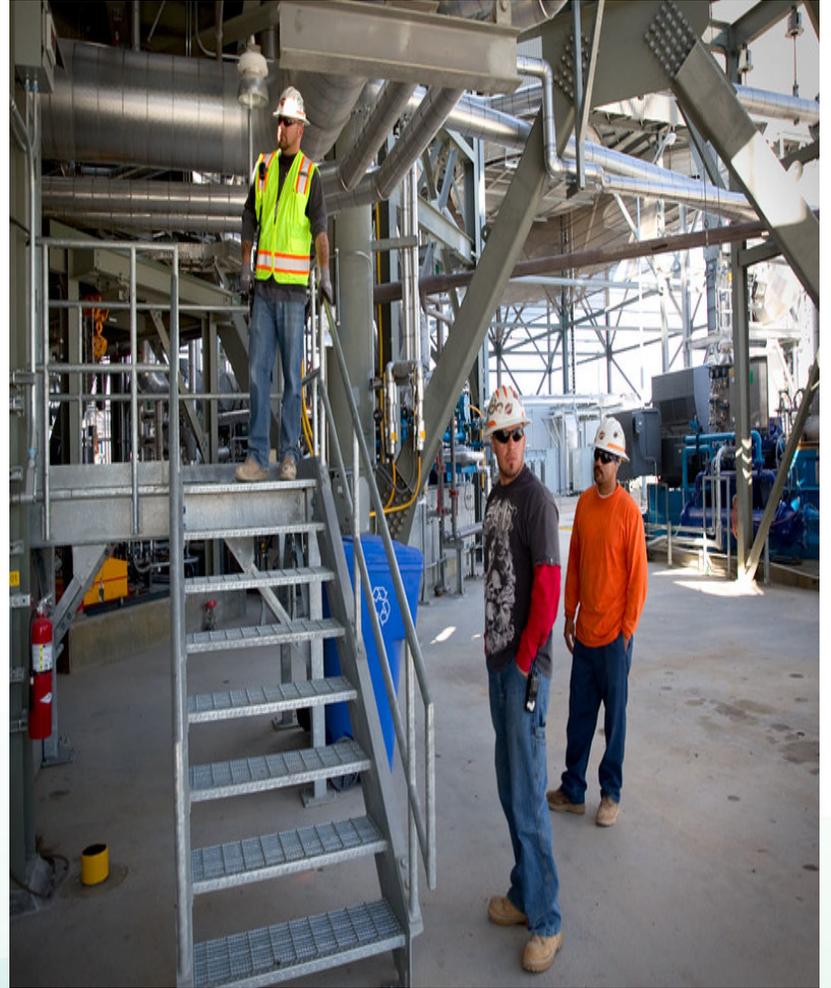
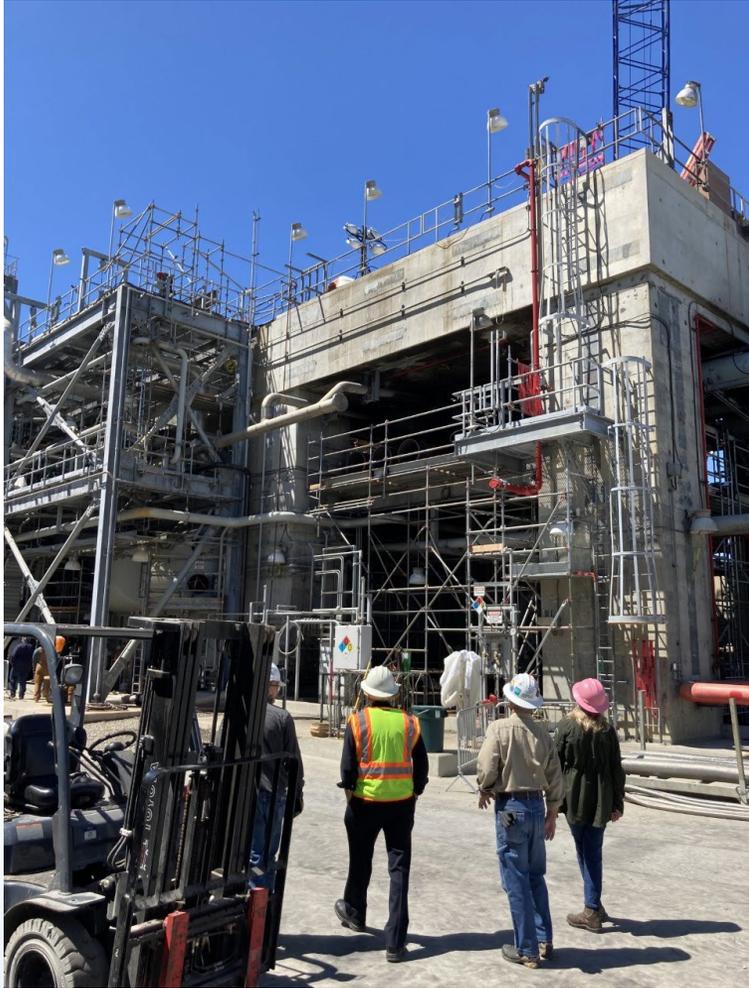


Outcomes and Opportunities





Plan Review and Project Restart





Item 3: Update on Short-term Reliability Activities

August 11, 2021 Business Meeting

Aleecia Gutierrez and Angela Tanghetti
Energy Assessments Division



Benefits to Californians

- Heat waves and drought are stressing the western grid
- CEC taking actions to support grid reliability
- Working in close coordination with the
 - California Public Utilities Commission, and
 - California Independent System Operator

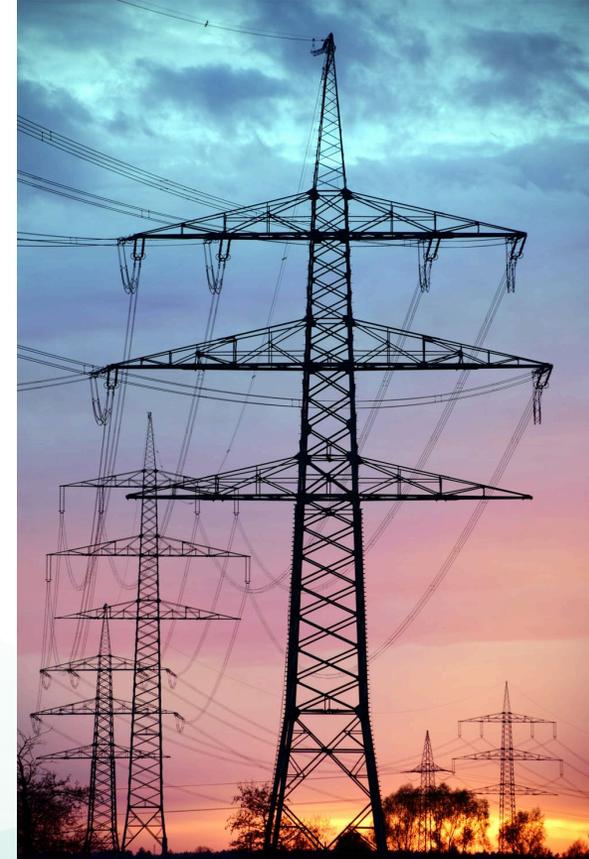


California ISO



Overview of CEC Reliability Actions

- Enhance demand forecasts
- Launch new analytical products
 - Reliability assessments
 - DERs
- Plan for contingencies in collaboration with California ISO and CPUC
 - ESF-12 responsibilities
 - Summer 2021 contingencies
- Leverage additional CEC responsibilities
 - Siting
 - Research – EPIC





Reliability Assessments

- Near-term
 - Assess supply and demand under different weather conditions for upcoming summer
- Mid-term
 - Model range of possible conditions to evaluate reliability for 2022 – 2026
- Long-term
 - Model various scenarios of renewables build-out
 - Assess transmission needs





Summer 2022 Stack Analysis

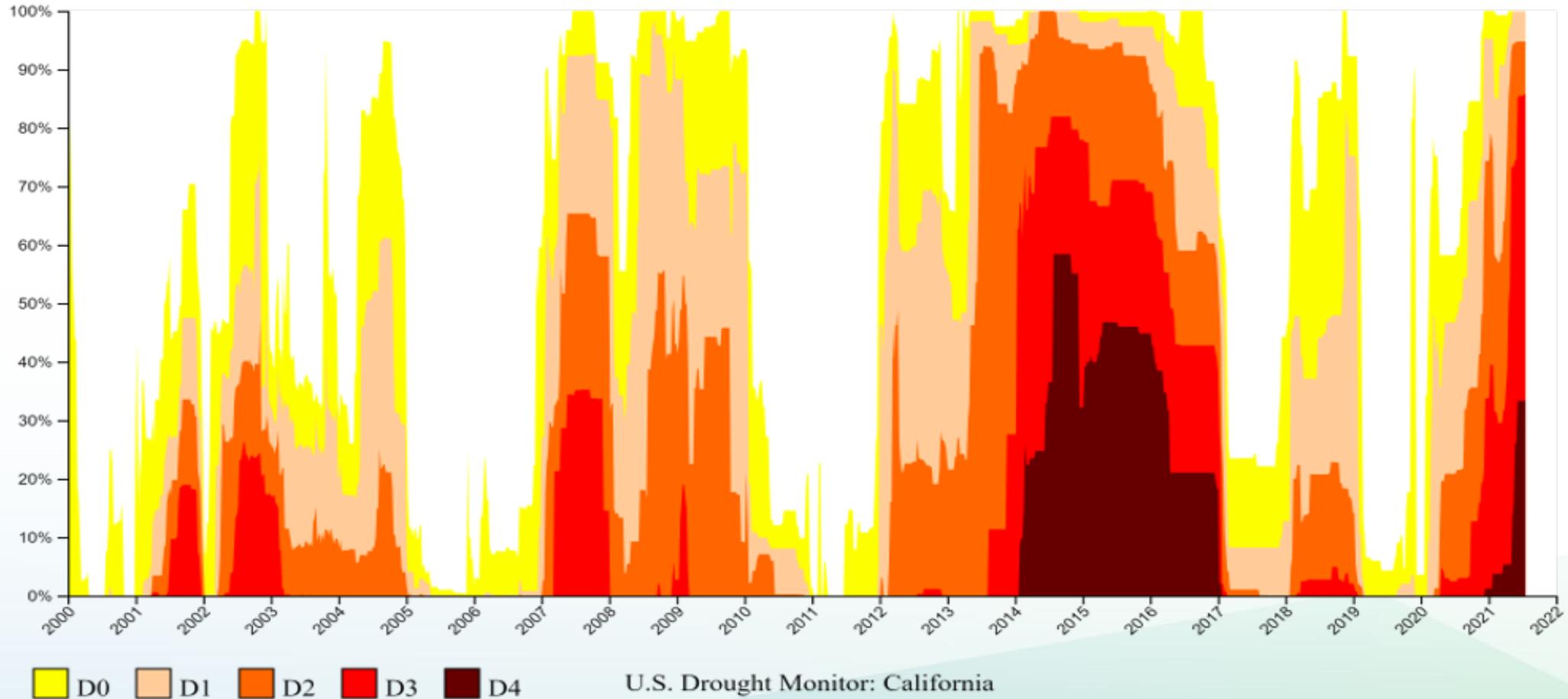
- Continued California drought
 - Water Agency Reduced Pumping Demand
 - 1,500 MW Hydro Capacity Derate
- Incorporates additional CPUC Procurement and Retirements
 - 840 MW of additional CPUC ordered procurement August 2022
 - 556 MW of CPUC emergency procurement available July 2022
 - 834 MW Redondo Beach Retirement
- Increases to planning reserve margin due to western heat events
 - 22.5% PRM increased demand variability from 1.5% to 9%





California Drought Conditions

California in some level of low precipitation or drought for many of the past 20 years
D0 = Abnormally Dry and D4 = Exceptional Drought





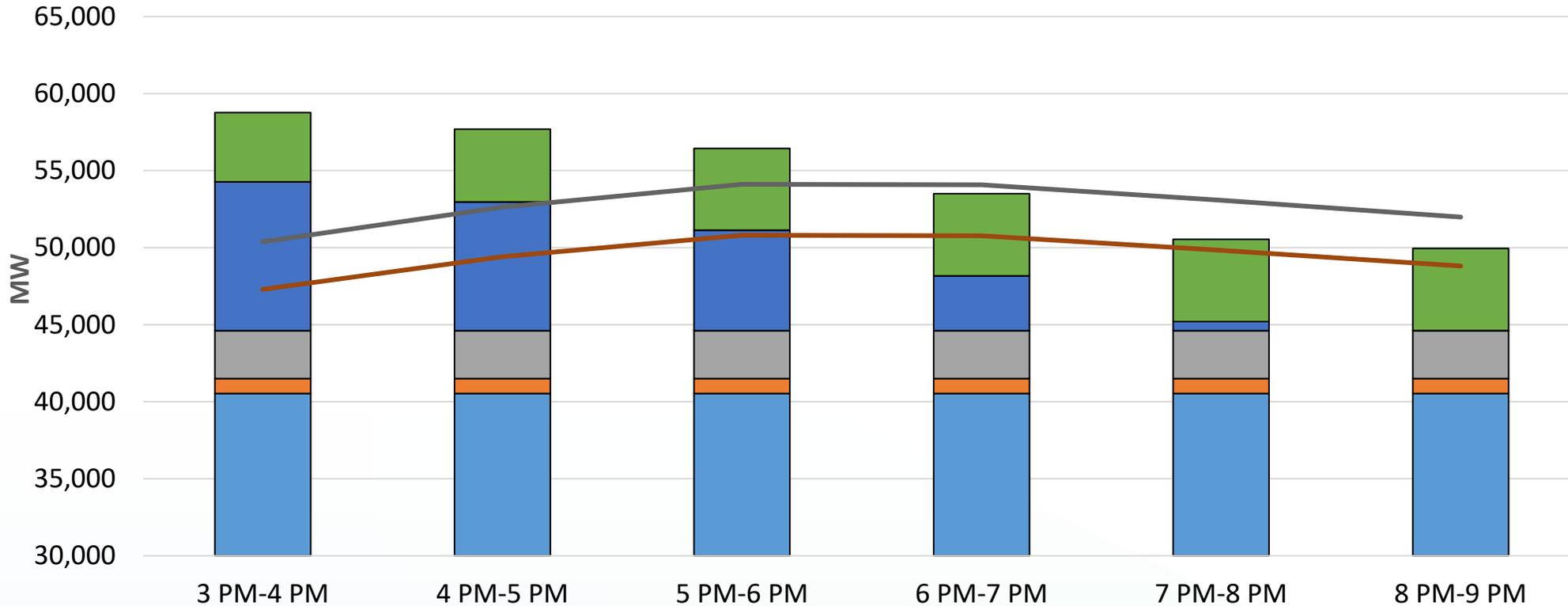
Summer 2022 Key Results

- Average weather conditions trigger contingencies in September
- Extreme weather trigger contingencies from just under 600 MW to almost 5,200 MW





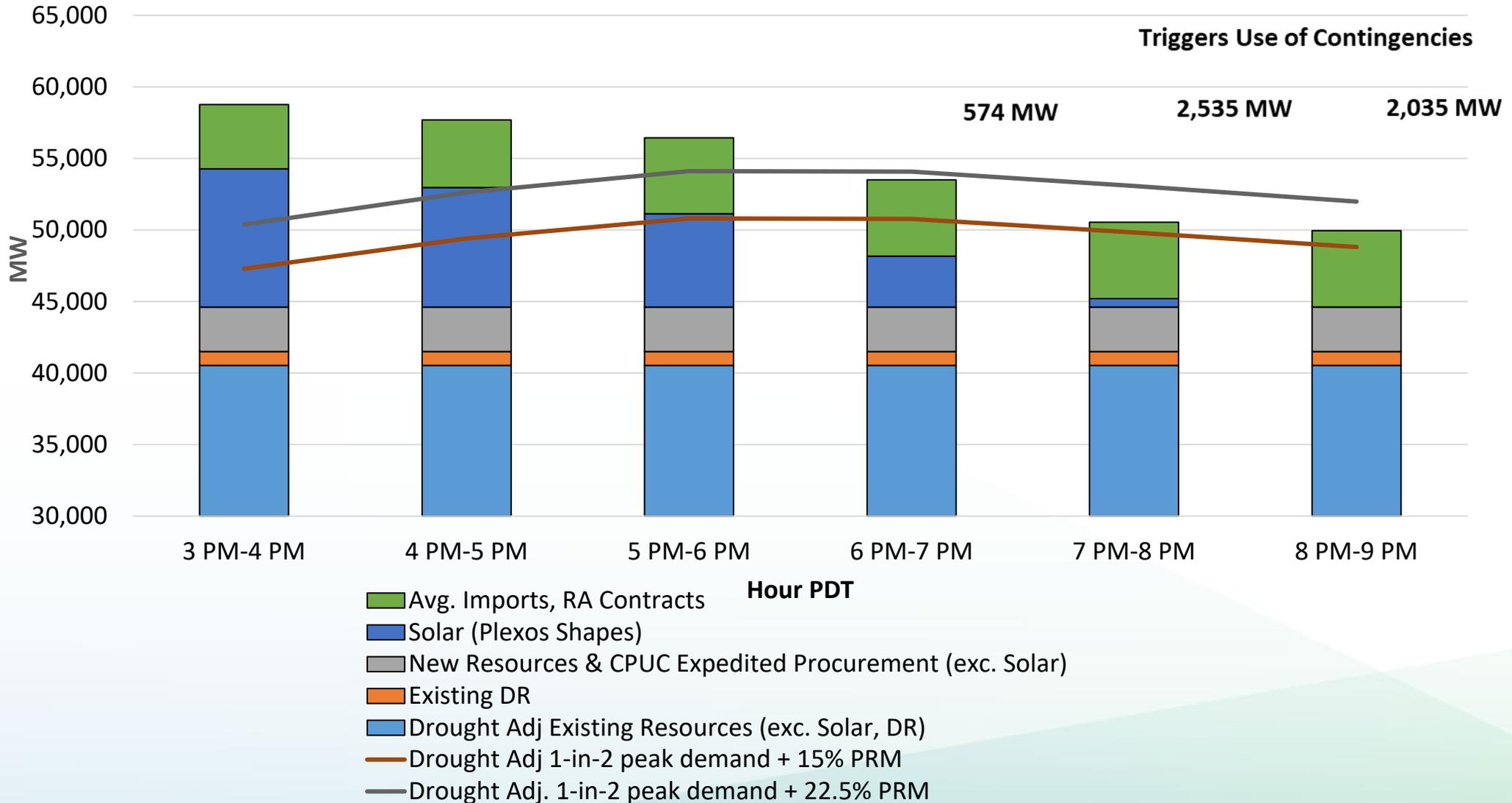
July 2022 Draft



- 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

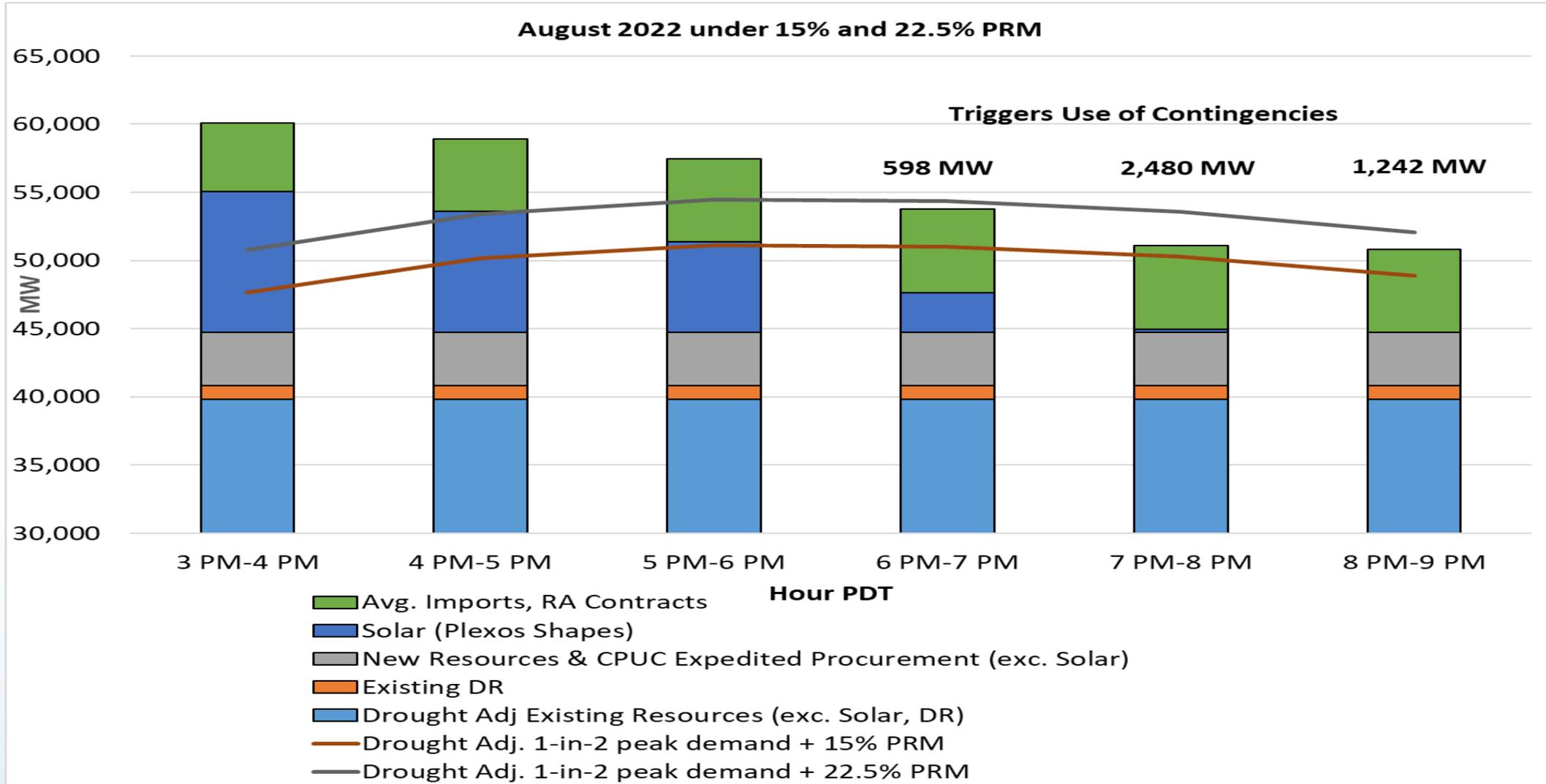


July 2022 Draft



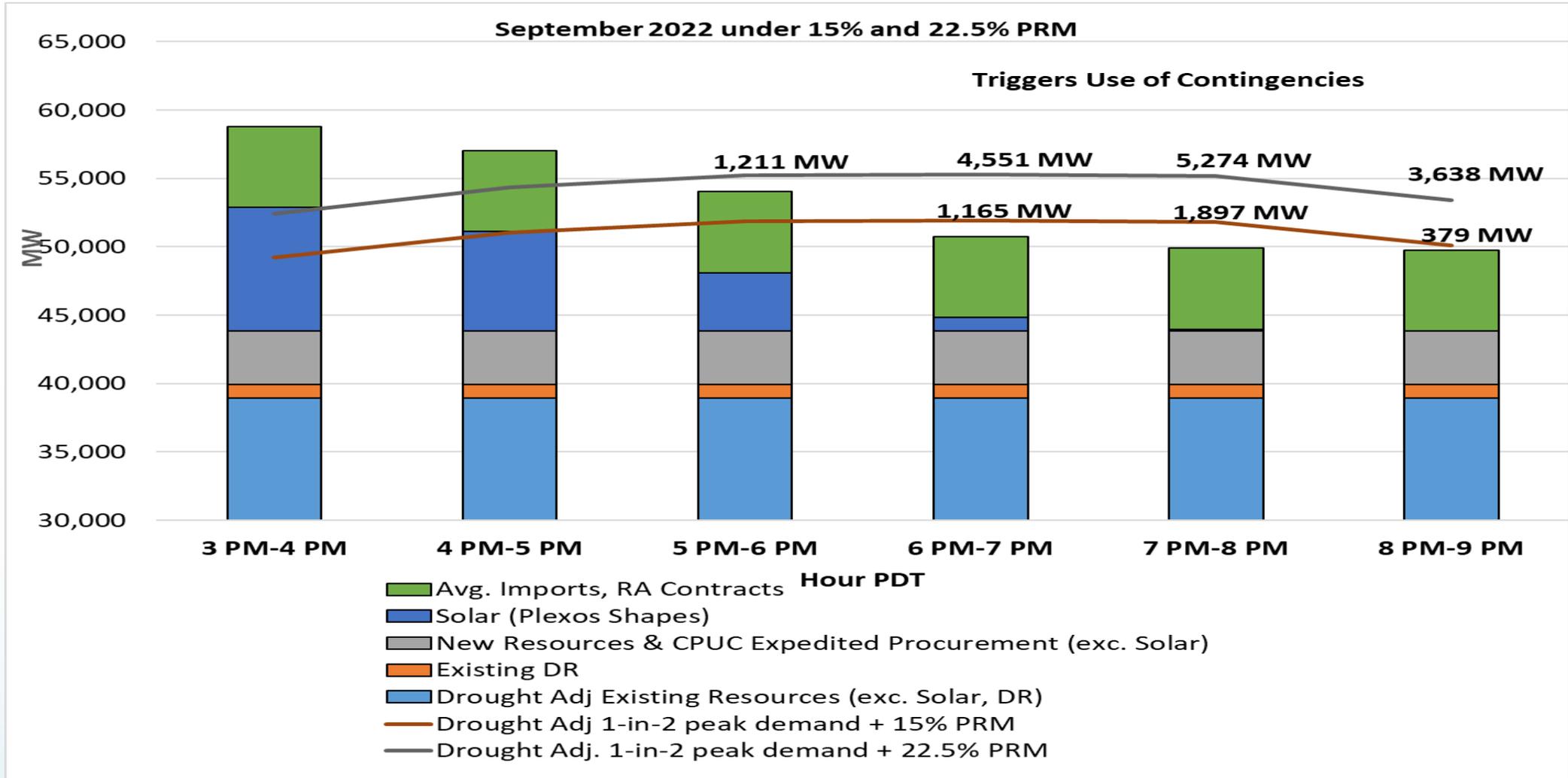


August 2022 Draft





September 2022 Draft





Conclusions

- Potential risk of triggering contingencies considering higher planning reserve margin
- Need for additional 600 MW to 5,200 MW to ensure electric system reliability
- Additional MW protect against
 - Above average seasonal temperatures
 - More weather dependent generation resources
 - Wildfire-related outages compromising inter-state energy transfers



Next Steps

Staff will present final analysis at 9/8/21 Business Meeting for possible adoption.

**Submit public comments by
8/20/2021**

**Review docketed comments:
Docket #: 21-ESR-01**





Item 4: Certification of EIR & Adoption of the 2022 Energy Code

August 11, 2021 Business Meeting

Will Vicent, Manager
Building Standards Office, Efficiency Division



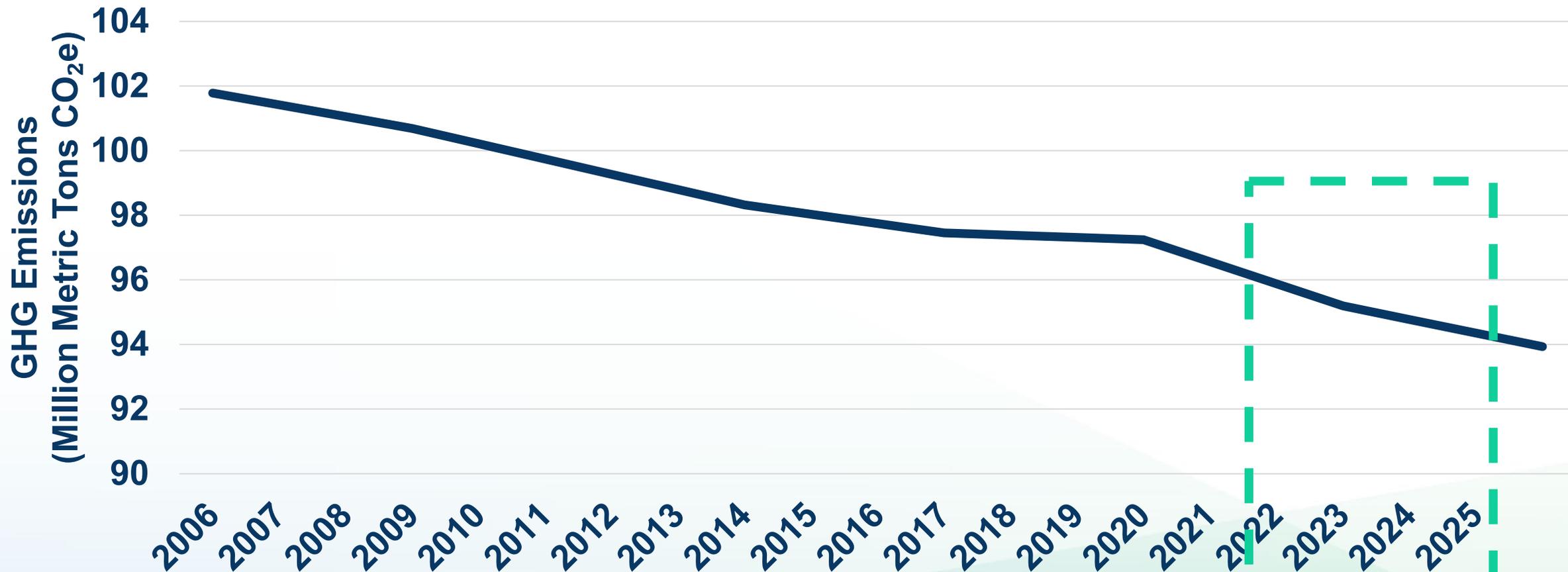
Energy Code Benefits

- Saves money on utility bills
- Improves consumer protection
- Supports climate action at least-cost
- Enables load flexibility and a cleaner grid
- Provides compliance flexibility



Energy Code Environmental Benefit

Reduced Statewide Emissions



Source: CEC Impact Analysis 2005, 2008, 2013, 2016, 2019, 2022



2022 Energy Code Process

	Part 6	EIR
Public Workshops (x45)	4/24/19 – 1/26/21	4/9/21
Start 45-Day Public Comment	5/7/21	5/20/21
Start 15-Day Public Comment	7/14/21	NA
Energy Commission Adoption	8/11/21	8/11/21
Effective Date	1/1/23	NA



2022 Energy Code Highlights

- Heat pump baselines
- Solar + storage baselines
- Electric-ready requirements
- Lighting
- Multifamily restructuring
- Ventilation requirements





Heat Pumps

Electric water and space heating

- Increases efficiency
- Reduces GHGs
- Encourages load flexibility

2022 Energy Code

- Single-family: water or space heating standard
- Multifamily: space heating standard
- Commercial: standards for schools, offices, banks, libraries, retail, grocery

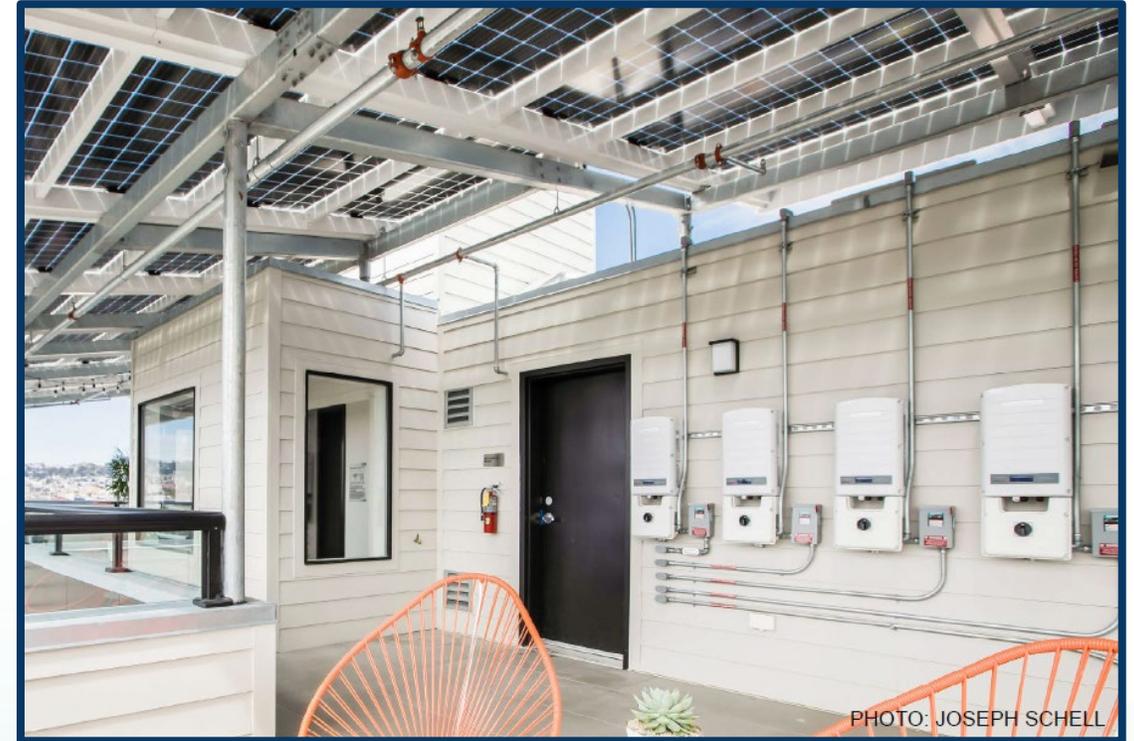




Solar Energy & Battery Storage

2022 solar + battery standards

- High-rise multifamily
- Hotel-motel, tenant space
- Office, medical office, clinic
- Retail, grocery stores
- Restaurants
- Schools, civic spaces
- Solar + battery sized modestly





Residential Electric-Ready

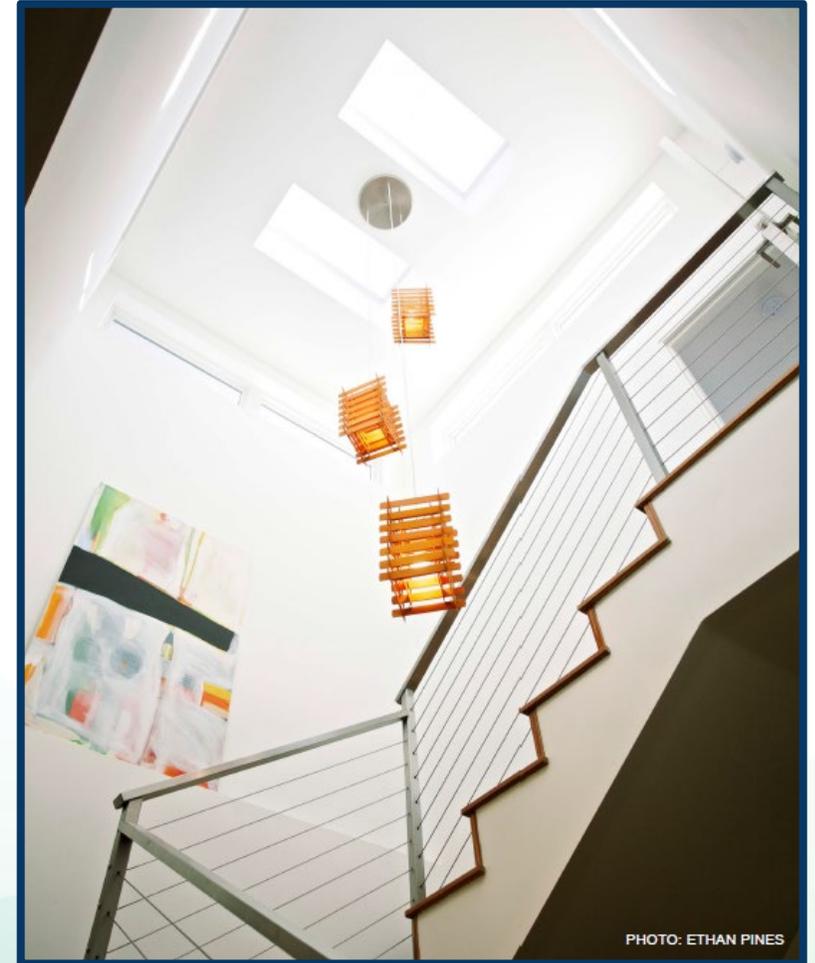


- Dedicated electrical circuits for single-family and multifamily: space heating, cooking, clothes drying & water heating
- Energy storage system-ready requirements for single-family, including minimum electric panel busbar rating of 225 amps



Lighting

- Improves clarity and consistency
- Default outdoor lighting zones
- Updates nonresidential lighting power allowance tables
- Removes residential lumen maintenance test from Joint Appendix 8





Indoor Air Quality & Air Distribution



- Recognizes differences in pollutants created by natural gas and electric cooking, as well as role of indoor air volume in pollution concentrations
- Adds duct sealing requirements for central shaft ventilation systems use
- Relaxes insulation requirements for ducts in conditioned space



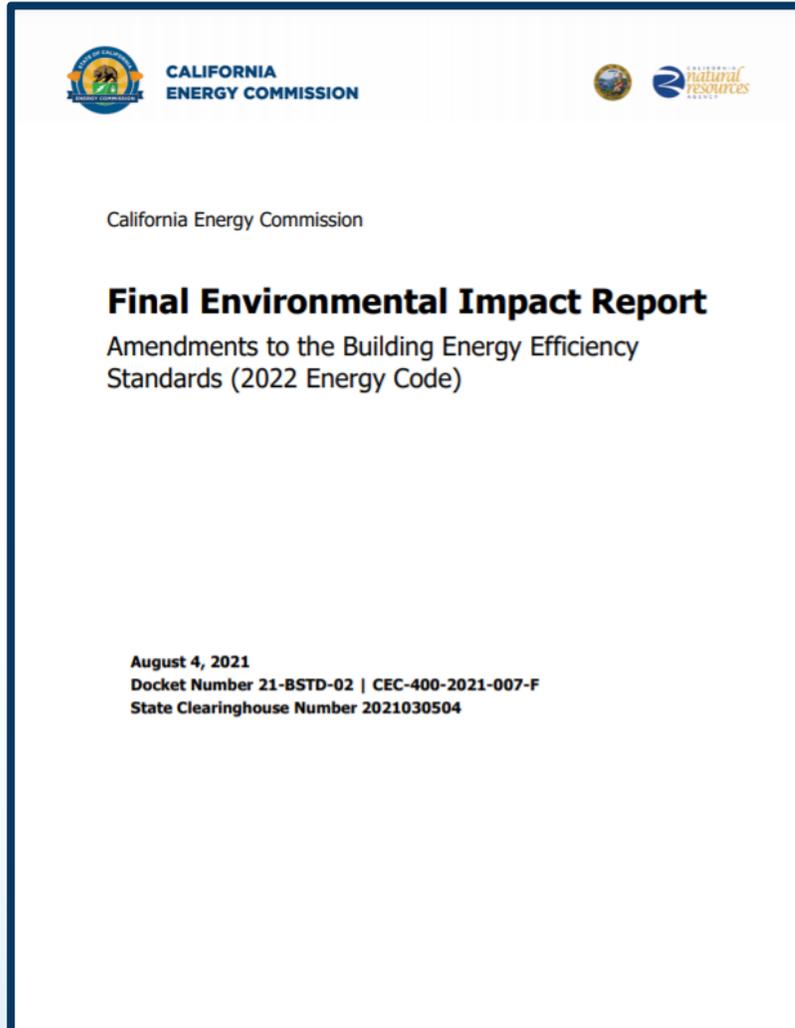
Multifamily Restructuring

- Consolidates multifamily provisions into a set of dedicated chapters
- Compliance software will follow





Environmental Impact Report



- Included public process
- Received 6 comment letters:
 - 2 in support
 - 1 about housing production
 - 1 stated draft EIR was deficient
 - 2 not directed at draft EIR
- Published Final EIR on 8/4/2021
- Complied with CEQA



EIR Process

- CEC is “lead agency”
- CEC must certify Final EIR:
 - 1) Completed in compliance with CEQA
 - 2) Reviewed and considered prior to approving project
 - 3) Reflects lead agency’s independent judgment and analysis



30-Year Environmental Benefit

2022 Measure Categories	% Total	Emissions Savings (MMTCO ₂ e)	Emissions Benefit (\$)
Single Family Heat Pump Standard	5.38%	729,698	\$115,564,424
Multifamily Heat Pump Standard	0.49%	71,639	\$11,345,665
Nonresidential Heat Pump Standard	1.50%	214,917	\$34,036,994
Multifamily PV + Battery	2.32%	202,702	\$32,102,422
Nonresidential PV + Battery	10.04%	876,231	\$138,771,230
Multifamily Energy Efficiency	0.82%	89,215	\$14,129,309
Nonresidential Energy Efficiency	8.03%	768,793	\$121,755,977
Nonresidential Alterations	34.65%	3,435,740	\$544,127,893
Single Family Alterations	10.86%	977,604	\$154,825,984
Covered Processes	25.92%	2,480,724	\$392,879,357
TOTALS	100%	9,847,264	\$1,559,539,255



Staff Recommendations

1. Certify Final EIR in accordance with CEQA
2. Adopt 2022 Energy Code



Thank You

Office of Chief Counsel	Efficiency Division	Efficiency Division	Siting, Transmission & Env. Protection	Energy Assessments
Jared Babula	Haider Alhabibi	Jeff Miller	Abdel-Karim Abulaban	Nicholas Janusch
Linda Barrera	Ronald Balneg	Cheng Moua	Gerry Bemis	Christopher McLean
Matt Chalmers	Amber Beck	Bill Pennington	Thomas Gates	Angela Tanghetti
Susan Cochran	Payam Bozorgchami	Javier Perez	Mark Hamblin	
Josephine Crosby	Haile Bucaneg	Michael Shewmaker	Steven Kerr	
Lisa DeCarlo	Thao Chau	Mazi Shirakh	Eric Knight	
Justin Delacruz	Christine Collopy	Mike J. Sokol	Matthew Layton	
Caryn Holmes	Danuta Drozdowicz	Peter Strait	Paul Marshall	
Ralph Lee	Corrine Fishman	Danny Tam	Garry Maurath	
Michael Murza	Tajanee Ford-Whelan	Mary Trojan	Gabriel Roark	
Nick Oliver	Matthew Haro	Will Vicent	Kenneth Salyphone	
Matt Pinkerton	Simon Lee	Lorraine White	Carol Watson	
James Qaqundah	Joe Loyer	RJ Wichert	Lisa Worrall	
	Alexis Markstrum	Daniel Wong		



Item 5: California Building Decarbonization Assessment

August 11, 2021, Business Meeting

Michael Kenney, Energy Specialist

Nicholas Janusch, PhD., Energy Specialist

Energy Assessments Division, Demand Analysis Office



Benefits to California

- Increases understanding of building decarbonization pathways
- Provides clarity of benefits and barriers to building decarbonization
- Advances knowledge supporting CA's clean energy goals





Overview of Assembly Bill 3232

CEC must assess potential to reduce GHG emissions

- In residential and commercial buildings
- By at least 40% below 1990 levels
- By 1/1/2030

Source: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB3232



AB 3232 Assessment Development

Event	Date
Baseline workshop	12/4/19
Fuel Substitution Scenario Analysis Tool (FSSAT) workshop	2/27/20
Building Decarbonization workshop	5/22/20
FSSAT Draft Results workshop	6/9/20
Draft AB 3232 Report Published	5/7/21
Draft Report workshop	5/21/21



Building Decarbonization

- Systemwide emissions are 25% of total
- Direct emissions are 10% of total
- GHG reductions assessed relative to both baselines

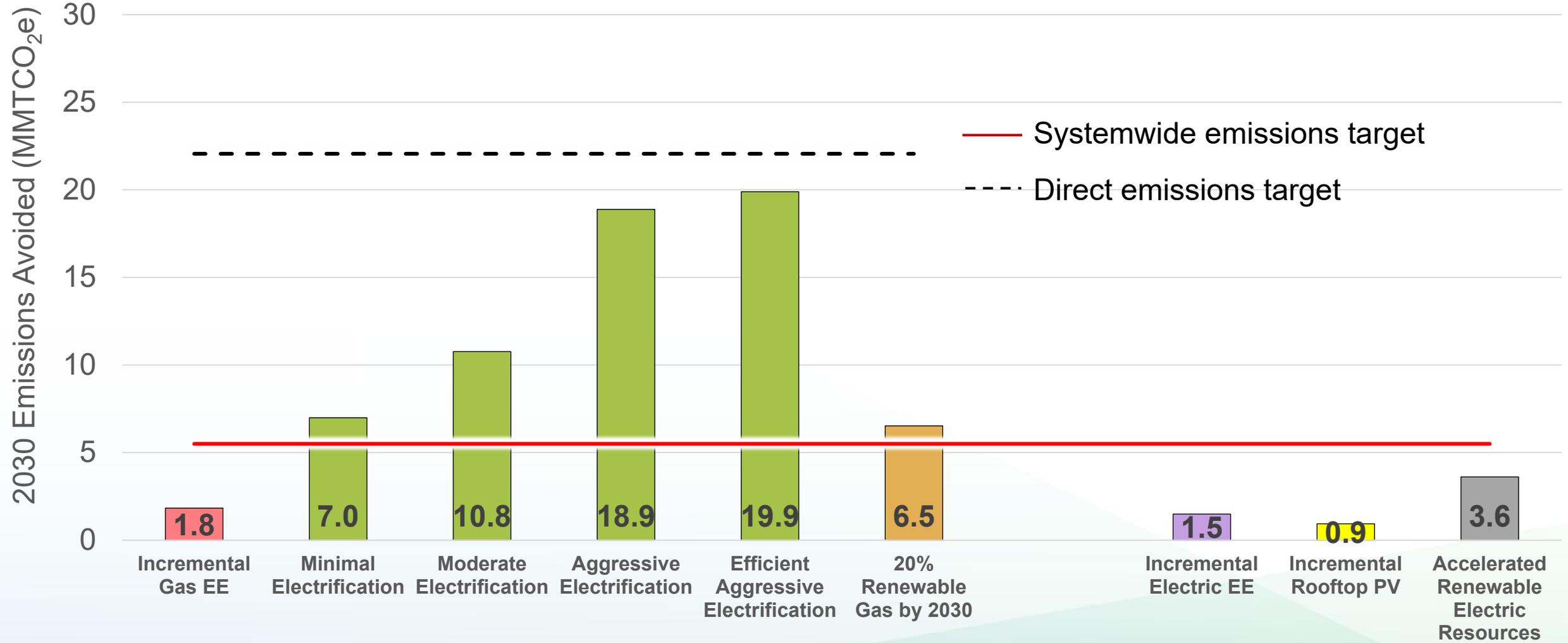


Seven Broad Strategies of Building Decarbonization

1. Building end-use electrification
2. Decarbonizing electricity generation system
3. Energy efficiency
4. Refrigerant conversion and leakage reduction
5. Distributed energy resources
6. Decarbonizing gas system
7. Demand flexibility

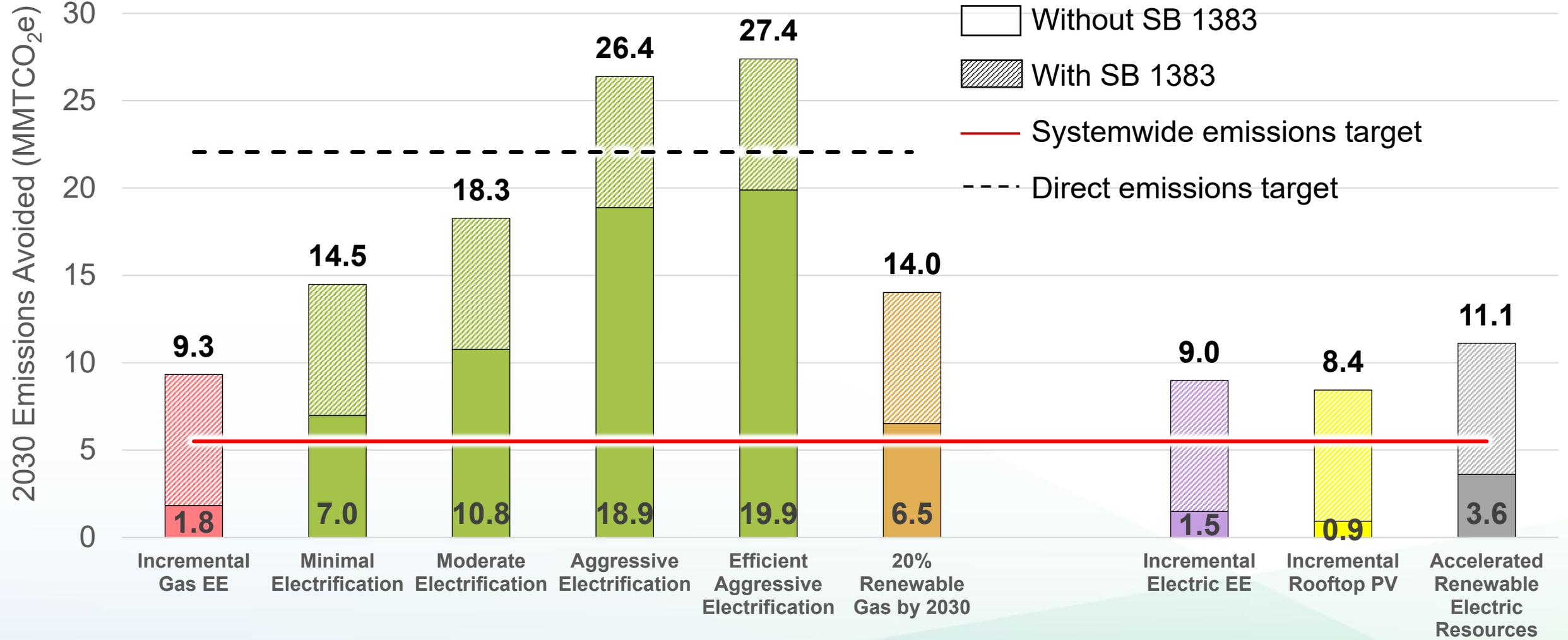


Annual GHG reduction in buildings for 2030 relative to direct and systemwide 40% reduction emission targets



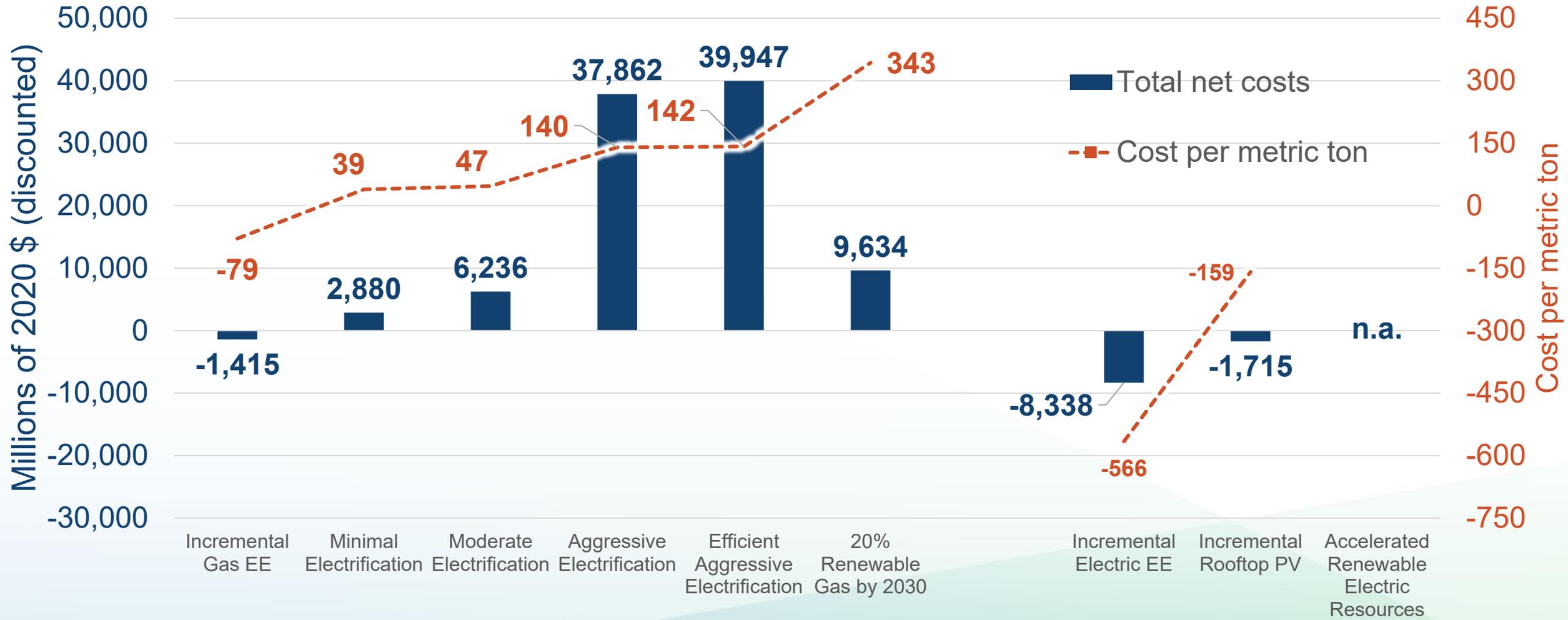


Annual GHG reduction in buildings for 2030 relative to direct and systemwide 40% reduction emission targets





Cost Summary of Assessed GHG Emission Reduction Strategies





Assessment Conclusions

- Large-scale deployment of electric heat pumps
- Newly constructed buildings have low decarbonization costs
- CA Energy Code will advance efficiency
- Large investments in existing buildings needed
- Further long-term reliability impacts need assessing
- Refrigerant leakage reduction is critical
- Gas system role and incentives need further review



Assessment Conclusions Cont.

- Evaluate decarbonization actions through equity lens
- Government and stakeholder collaboration needed
- Outreach and education needed
- Clean energy workforce expansion and training
- Harmony with response to housing crisis

Thank you!

Hazel Aragon

Heather Bird

Martha Brook

Matt Coldwell

Christine Collopy

Kristy Chew

Bryan Early

Aida Escala

Aleecia Gutierrez

Karen Herter

Richard Jensen

Daniel Johnson

Melissa Jones

Mark Kootstra

Eugene Lee

Lynn Marshall

Tiffany Mateo

Michael Murza

Jennifer Nelson

Bill Pennington

Heriberto Rosales

Ken Rider

Brian Samuelson

Michael Sokol

Angela Tanghetti

Gabriel Taylor

Jacob Wahlgren

CARB

CPUC

Guidehouse Inc.

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Item 6: Agreement with Equilon Enterprises LLC dba Shell Oil Products US (ARV-21-023)

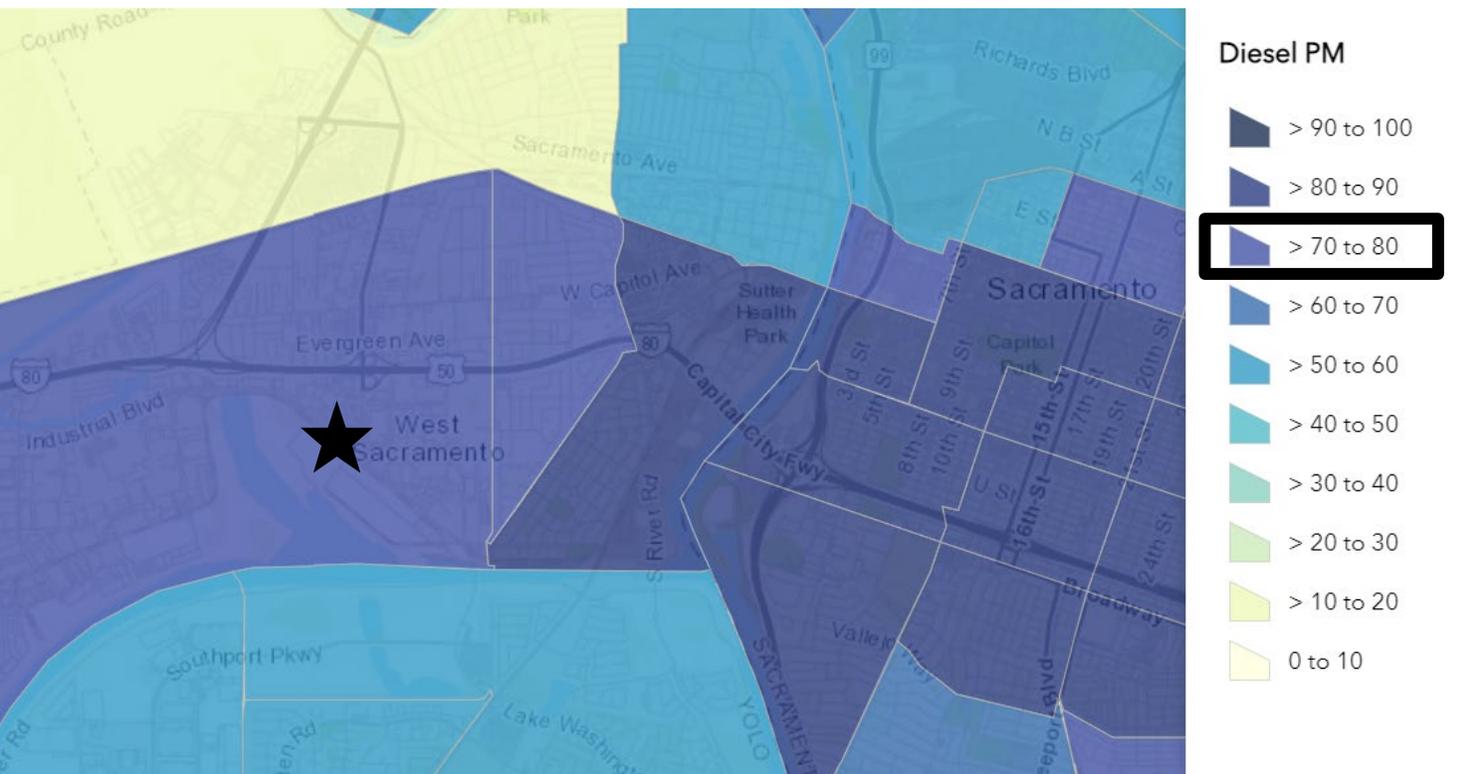
August 11, 2021 Business Meeting

Madison Jarvis, Air Pollution Specialist
Fuels and Transportation Division
Advanced Fuels & Vehicle Technologies Office, Freight & Transit Unit

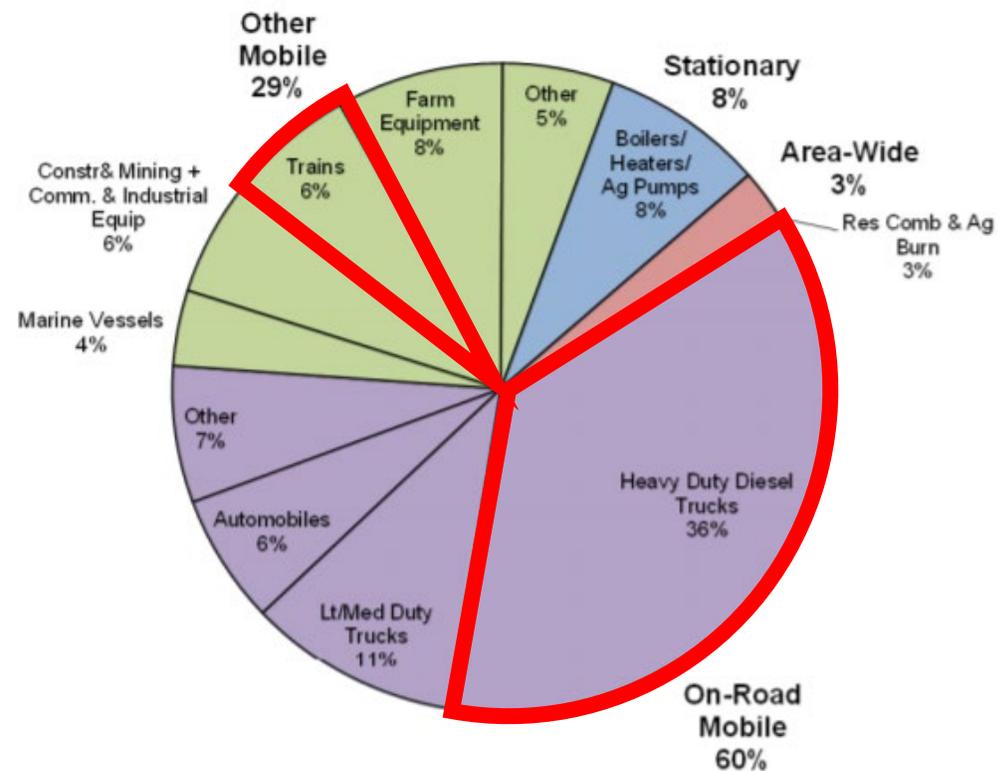


Benefits to California

- Switcher locomotive → **local** emissions reductions
- Heavy-duty vehicles → **regional** emissions reductions



2012 NOx Inventory



Source: Sacramento Regional 2008 NAAQS 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2017)



Project Overview



Shell Multi-Modal Hydrogen Refueling Station

- Port of West Sacramento
- 1st **Multi-Modal** Hydrogen Station serving:
 - Sierra Northern Hydrogen Locomotive Project (PIR-20-001)
 - Heavy-duty on-road vehicles
- 350-bar (HD vehicles) / 250-bar (locomotives)





Staff Recommendation

Approve

- Grant agreement for \$4M

Adopt

- Determination that action is exempt from CEQA



Item 7: Agreement ARV-21-029 with H2B2 USA LLC for a \$3,965,000 Grant

August 11, 2021 Business Meeting

Hieu Nguyen

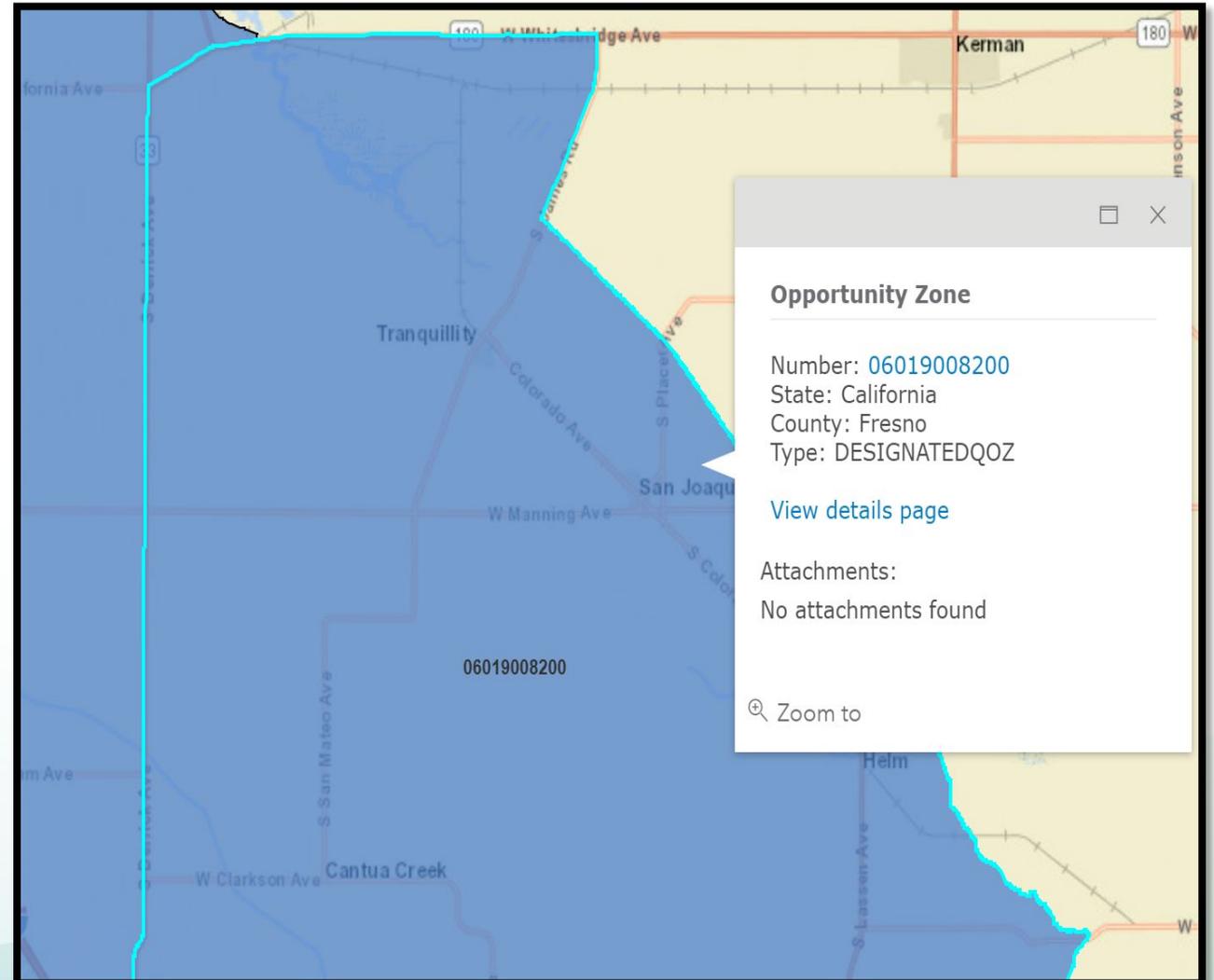
Fuels and Transportation Division

Advanced Fuels & Technologies Office, Advanced Fuel Production Unit



Benefits to California

- **Economic development** for Disadvantaged Community
- **Qualified Opportunity Zone** with local hiring
 - 6 temp construction jobs
 - 3 full time facility jobs
- **100% renewable hydrogen** in-state production increase

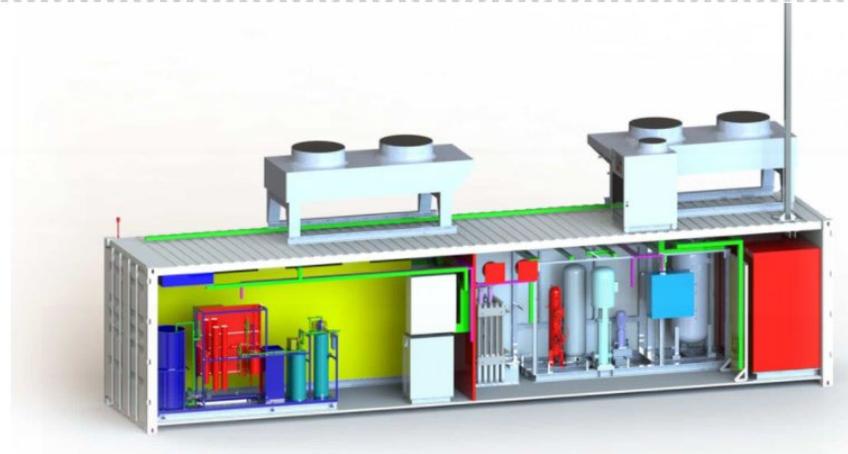




Project Overview

H2B2

H2B2 USA, LLC



Source: H2B2

- **Renewable Hydrogen Production Facility**
- **1,000 kg/day or 365,000 kg/year**
- **Renewable electricity utilized (PV Solar Farm)**
- **Low-Carbon-Fuel: 3.42 gCO₂e/MJ**
- **Supports California's hydrogen refueling station network**



Staff Recommendation

Approve

- Grant agreement for \$3,965,000

Adopt

- Staff CEQA findings



Item 8: Blueprints for MD/HD ZEV Infrastructure (GFO-20-601)

August 11, 2021 Business Meeting

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





Project Overview

City of Long Beach (ARV-21-007)

- Charging for M/HD battery electric charging and hydrogen fueling infrastructure for City municipal fleet
- ZEV infrastructure benefits low-income populations and disadvantaged communities (DACs)

CITY OF
LONG BEACH





Project Overview

The Regents of the UC, Irvine (ARV-21-018)

- Charging for M/HD battery electric charging and hydrogen fueling infrastructure in the South Coast Air Basin
 - Transit
 - Drayage
 - Long-haul trucking
- ZEV infrastructure benefits local DACs



Project Overview

InCharge Energy (ARV-21-019)

- Electric charging for the Inland Empire and the I-710 corridor
- Infrastructure for 50 fleet locations with 1,000+ M/HD ZEVs located in DACs





Project Overview

Santa Barbara Metropolitan Transit District (MTD) (ARV-21-020)

- Infrastructure for transit, municipal, and private fleets
- Microgrid
- Located in and will benefit low-income communities

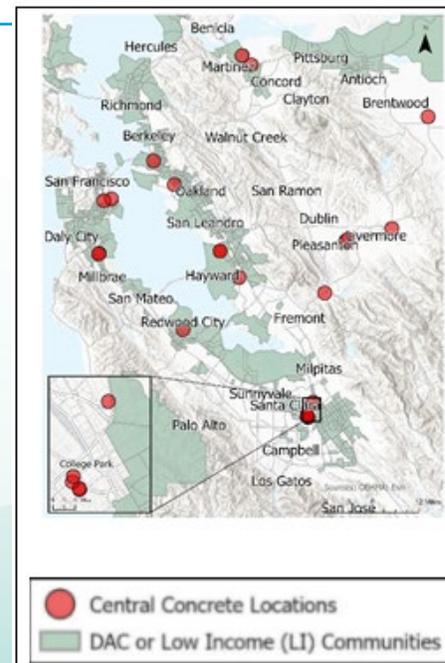




Project Overview

Central Concrete Supply Co., Inc. (ARV-21-021)

- 23 Bay Area facilities
- Located in and will benefit low-income and DACs

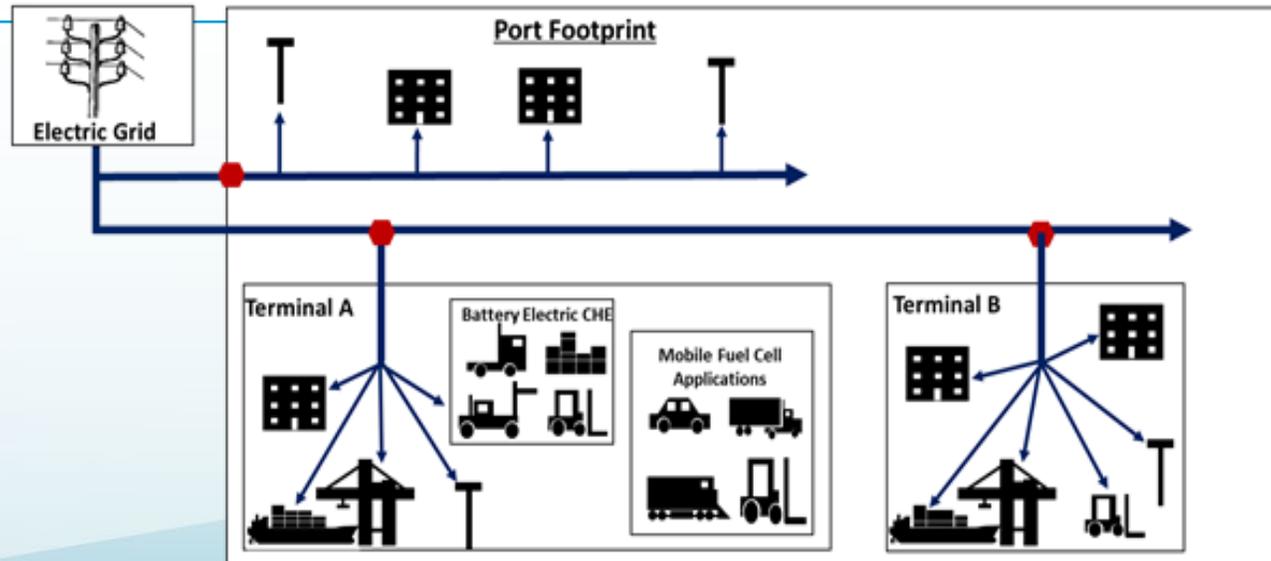




Project Overview

The Regents of the UC, Irvine (ARV-21-022)

- M/HD battery electric charging and hydrogen fueling infrastructure for fleets at a marine terminal (Port of Long Beach)
- Infrastructure located in and benefits DACs





Project Overview

Oxnard Harbor District (ARV-21-024)

- M/HD battery electric charging and hydrogen fueling infrastructure for fleets at Port of Hueneme
- Infrastructure benefits DACs surrounding the Port





Project Overview

Port of Stockton (ARV-21-026)

- Charging infrastructure at the port
- Instructional electrification guides
- ZEV infrastructure benefits local DACs





Project Overview

The Regents of the UC, Riverside (ARV-21-027)

- Infrastructure for hydrogen and electric refueling and recharging for the City of Riverside
- Located in and will benefit DACs



Project Overview

San Diego Association of Governments (ARV-21-028)

- Infrastructure for electric vehicle charging in the San Diego region.
- Incorporates actions and strategies identified in regional and state goods movement plans
- Located in and will benefit DACs

SANDAG





Project Overview

San Francisco Bay Area Water Emergency Transportation Authority (ARV-21-030)

- Transition to zero-emission ferries using electric propulsion systems
- Emphasis on resolving the technical and regulatory barriers for shore side infrastructure

WATER EMERGENCY
TRANSPORTATION AUTHORITY



San Francisco Bay Ferry

A SERVICE OF WETA



Staff Recommendation

Approve

- 11 grant agreements

Adopt

- Staff's determination that projects are exempt from CEQA



Item 9: REMOVED FROM AGENDA

August 11, 2021 Business Meeting

Ben Wender
Electric Generation System Program Specialist
Research and Development Division



Item 10: Research and Development of High Value Recycling Pathways for Lithium-ion Batteries

August 11, 2021 Business Meeting

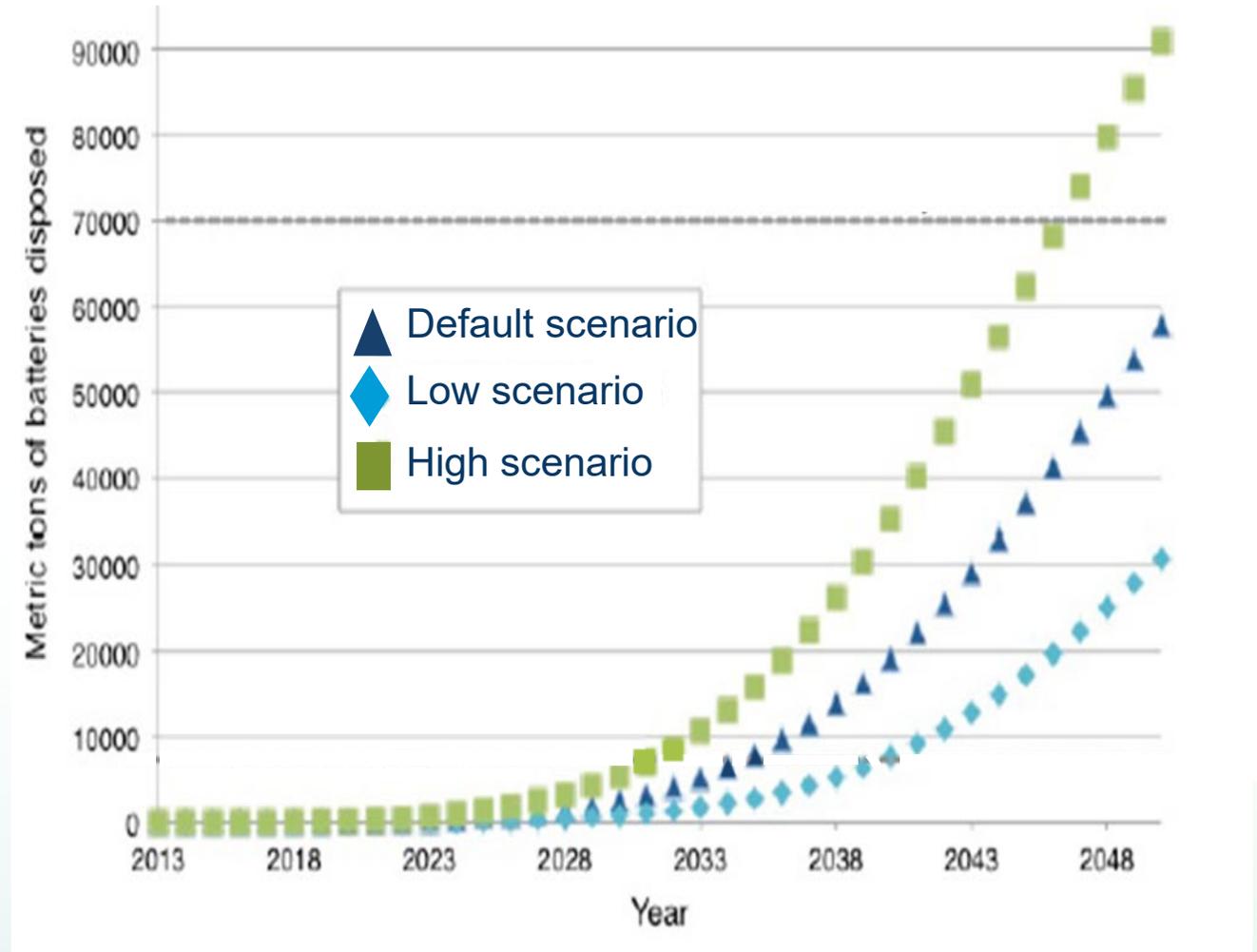
Ben Wender
Electric Generation System Program Specialist
Research and Development Division



Benefits to Californians

Recycling lithium-ion batteries will:

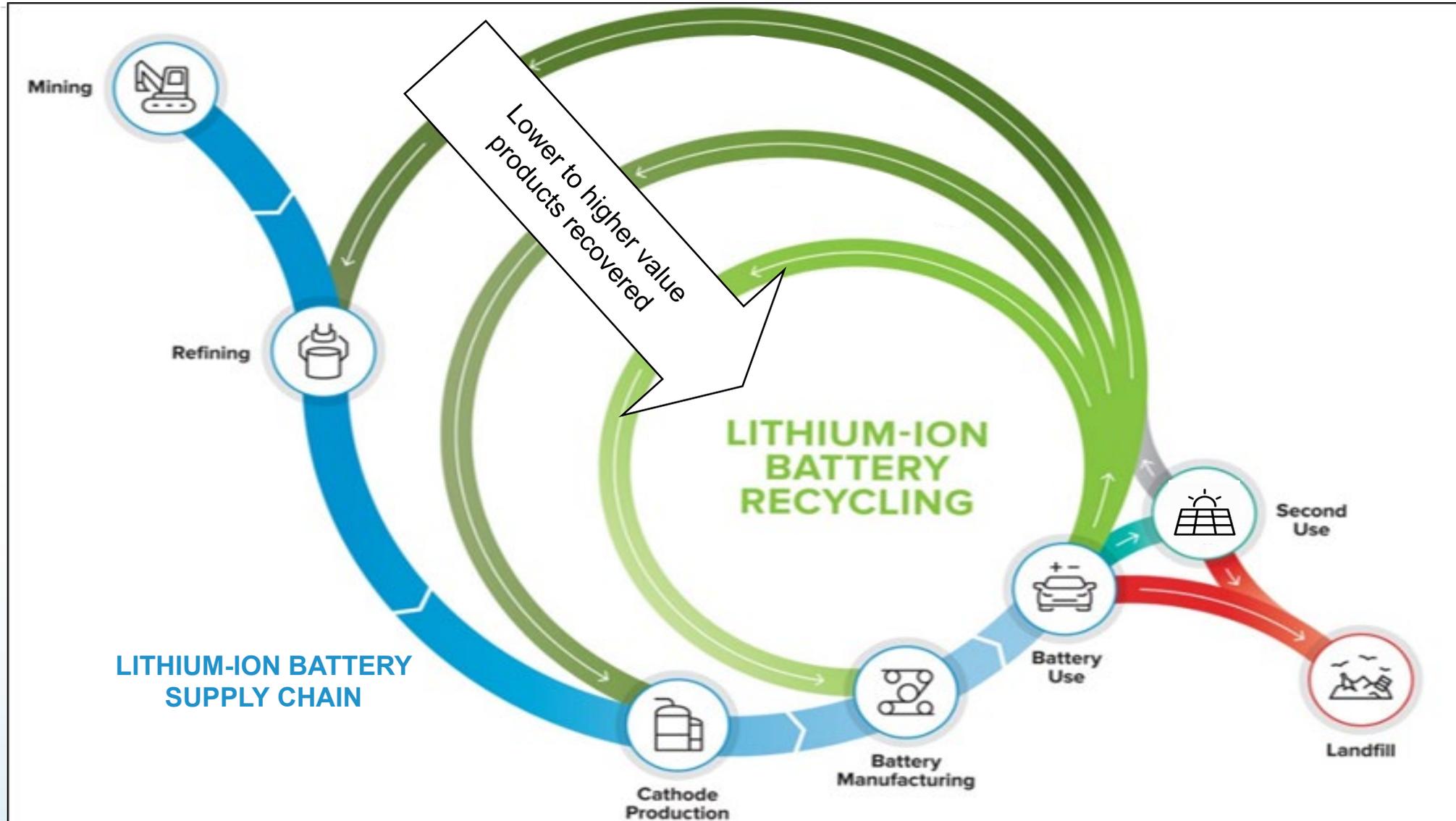
- Reduce environmental impacts
- Conserve critical materials
- Reduce battery costs



LBNL, 2016. "Plug-In Electric Vehicle Battery Recycling Scale-Up Strategies for California (2015-2050): Logistics, Life-cycle Environmental Implications, and Second-life Potential." CEC-500-2016-051



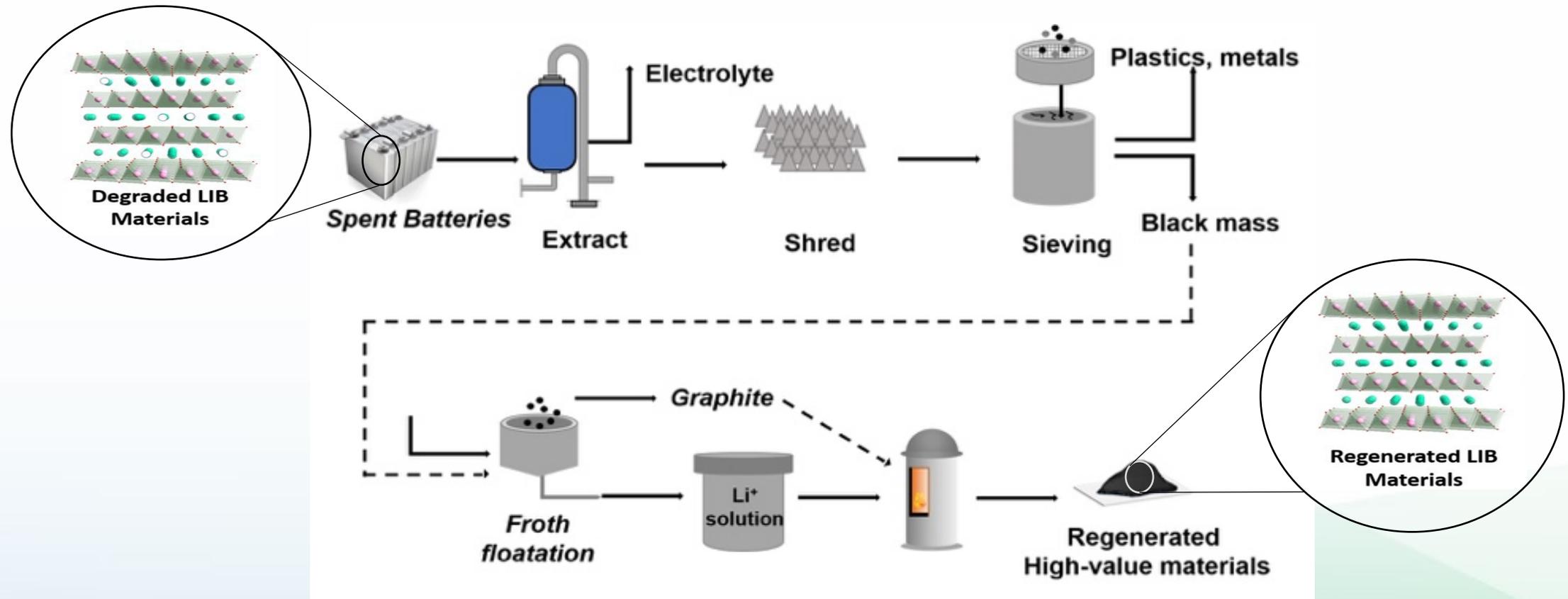
Purpose of Solicitation





10a. University California San Diego

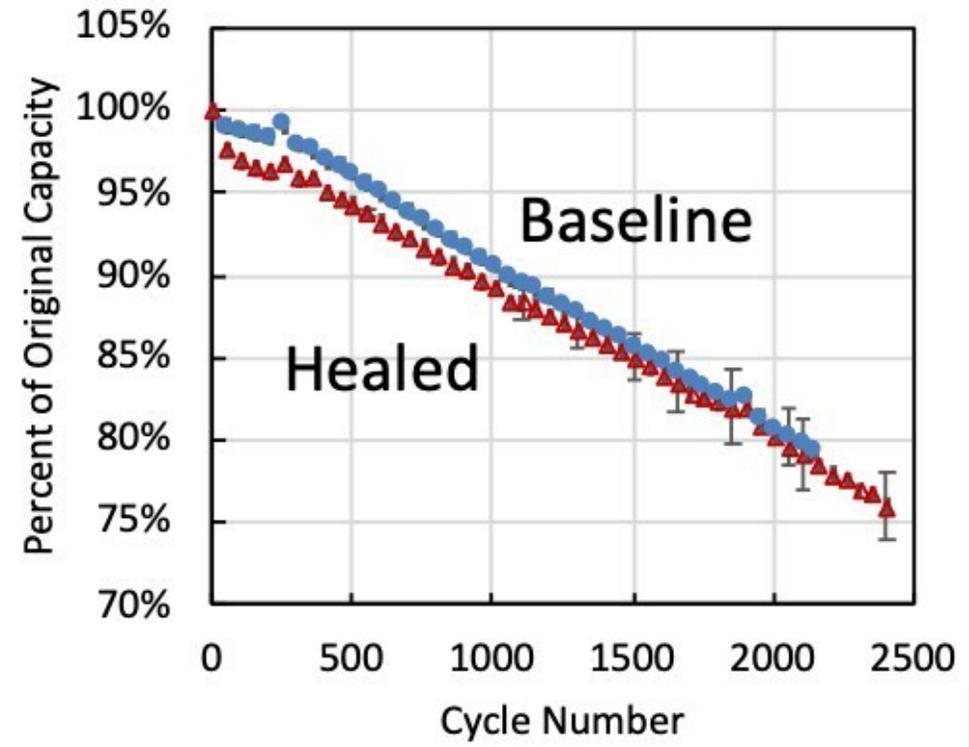
Develop Efficient and Scalable Direct Recycling Technology for Lithium-Ion Batteries





10b. OnTo Technology, LLC

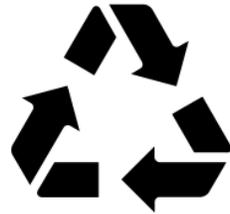
Cathode Healing for Recycling and Manufacturing of Lithium-ion Batteries





Staff Recommendation

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





Item 11: Local Ordinance Applications (19-BSTD-06)

August 11, 2021 Business Meeting

Danuta Drozdowicz, Efficiency Specialist
Efficiency Division, Building Standards Office



Benefits to California

Jurisdictions that adopt local ordinances:

- Lead with models for a clean energy future
- Reduce greenhouse gas emissions
- Save community members money



1 IN 3
CALIFORNIANS

**lives in a community
with an energy code
exceeding state
standards**



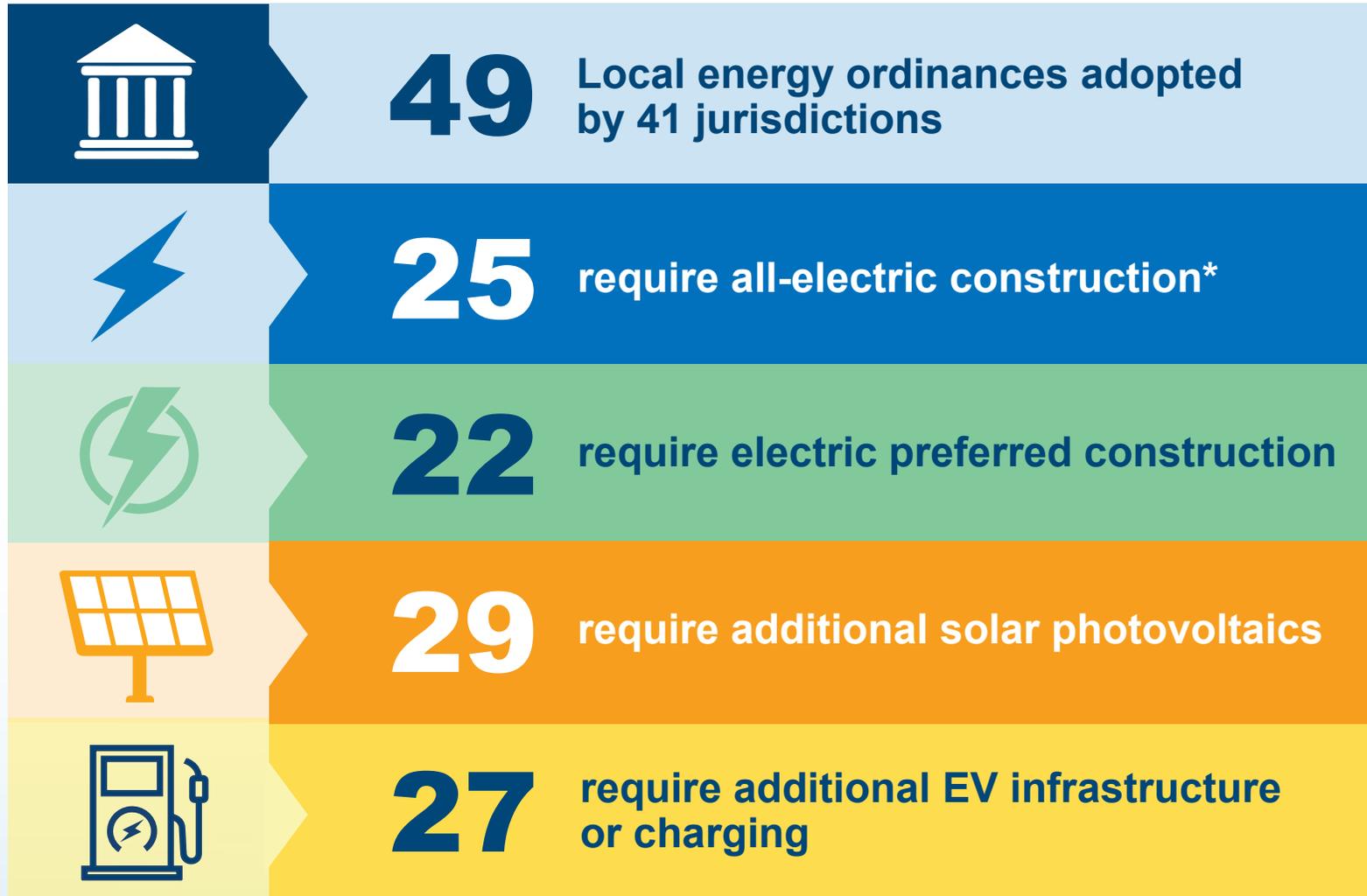
Overview of Local Ordinance Approval Process

For local building efficiency standards to be enforceable:

- 1) Application filed with CEC shows standards are cost-effective
- 2) CEC finds standards reduce energy consumption compared to current statewide Energy Code



Local Ordinances Exceeding 2019 Building Energy Efficiency Standards



* May not apply to all building types



Local Ordinances



Jurisdiction	Cost Effective	Energy Reduction	Energy Efficiency or All-Electric Provisions	Exceptions
City of Alameda	Yes	Yes	<ul style="list-style-type: none">• Requirements for all-electric new construction• Solar PV on new nonresidential buildings• Prewiring for electric appliances where gas appliances are installed	<ul style="list-style-type: none">• Applications such as accessory dwelling units, commercial kitchens, laboratories• For PV, shading, potential for overgeneration and vegetative roofs



Staff Recommendation

- Approve jurisdiction to enforce local ordinance