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<tr>
<td><strong>Docket Number:</strong></td>
<td>20-BUSMTG-02</td>
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<tr>
<td><strong>Project Title:</strong></td>
<td>Public Comment on California Energy Commission Business Meetings</td>
</tr>
<tr>
<td><strong>TN #:</strong></td>
<td>235244</td>
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<tr>
<td><strong>Document Title:</strong></td>
<td>Presentation - Final October 14 Business Mtg PPT deck</td>
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<tr>
<td><strong>Description:</strong></td>
<td>Minor edits. Supercedes previously docketed presentation.</td>
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<tr>
<td><strong>Filer:</strong></td>
<td>Maria Norbeck</td>
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<td><strong>Organization:</strong></td>
<td>California Energy Commission</td>
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<td><strong>Submitter Role:</strong></td>
<td>Commission Staff</td>
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<td>10/14/2020 12:05:05 PM</td>
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California Energy Commission
Business Meeting
October 14, 2020
10:00 a.m.
Pledge of Allegiance
Keep California Healthy

Wash
Clean
Cover
6 Feet

covid19.ca.gov
Take the Census

Complete the form by mail, by phone 844-330-2020 or online @ my2020census.gov
Go Vote

VOTE CALIFORNIA

www.registertovote.ca.gov
Remote Compliance

Business Meeting held remotely, consistent with Executive Orders N-25-20 and N-29-20 and the recommendations from California Department of Public Health to encourage physical distancing to slow spread of COVID-19.

For remote participation instructions go to CEC’s Business Meetings webpage:

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

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

• Call: 669-900-6833
• Meeting ID: 938-6923-0237

If Zoom shuts down, Business Meeting will continue via Verizon.

• Call: 1-888-823-5065
• Passcode: business meeting
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 per person and 1 person 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.

Two ways to provide comments:

1) Email PublicAdvisor@energy.ca.gov to have the CEC’s Public Advisor verbally relate comments during the meeting.

OR

2) Call (888) 823-5065. Passcode: "business meeting”

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   4) Do not use speaker phone when talking.
   5) Mute Zoom while calling to comment.
Item 1: 2020-2023 Investment Plan Update for the Clean Transportation Program

October 14, 2020 Business Meeting

Patrick Brecht, Investment Plan Update Project Manager
Fuels and Transportation Division, Transportation Policy and Analysis Office
The Clean Transportation Program plays an important role in achieving:

- California’s ambitious goals on climate change
- Petroleum reduction
- Adoption of zero-emission vehicles
- Improved air quality
- Economic development and recovery
- Investment in low-income and disadvantaged communities
- Job growth and workforce development
Funding By Category 2009–2020

- ELECTRIC $375M
- OTHER TYPES $18.4M
- WORKFORCE $33.3M
- ETHANOL $38.5M
- HYDROGEN $160.7M
- NATURAL GAS/PROPANE $131M
- BIOMETHANE $73.9M
- BIODIESEL/RENEWABLE DIESEL $67.9M
Program Outcomes 2009-2020

33% projects located in disadvantaged or low-income communities

$880M matched funding

17,440 jobs

11,276 EV Chargers

3,152 natural gas trucks

70 natural gas fueling stations

62 hydrogen fueling stations

24 manufacturing facilities
Clean Transportation Program Origins in Statute

- Established by Assembly Bill 118 (Nunez, 2007)
- Provides up to $100 million per year
- Extended to January 1, 2024 by Assembly Bill 8 (Perea, 2013)
Purpose of the Investment Plan

• Guides the Clean Transportation Program’s investments toward meeting the state’s clean transportation goals

• Allocates funding for multiple fuel and vehicle technologies, transportation sectors, and supporting activities (e.g. workforce development)

• Takes into consideration state regulations and other funding programs to promote coordination across agencies

• Integrates feedback from Advisory Committee, Disadvantaged Communities Advisory Group, and public

• **NEW!** Sets multi-year funding allocations to improve consistency and transparency for potential funding partners
Advisory Committee

• Reconstituted in February 2020

• Expanded membership to better reflect California communities

• Increased representation from program beneficiaries
  • Environmental justice communities
  • Public health organizations
  • Rural and tribal communities
  • Labor and workforce training groups
2020-2023 Investment Plan Update
Funding Priorities

Funding Allocations

- Recovery and Reinvestment in Response to COVID-19
- Program-wide Emphasis on Creating High-Quality Jobs
- Early Focus on Light-Duty ZEV Infrastructure
- Long-Term Focus on ZEV Infrastructure for Trucks, Buses, and Off-Road Equipment
- Benefits for Low-Income and Disadvantaged Communities
- Overcoming Key Market and Technological Barriers to Commercialization

Benefits for Low-Income and Disadvantaged Communities

Benefits for Low-Income and Disadvantaged Communities

Overcoming Key Market and Technological Barriers to Commercialization

Long-Term Focus on ZEV Infrastructure for Trucks, Buses, and Off-Road Equipment
Clean Transportation Program Funding Toward Disadvantaged and/or Low-Income Communities

- Disadvantaged Communities: $254.7 Million (28%)
- Low Income: $5.4 Million (1%)
- Low Income and Disadvantaged Communities: $32.4 Million (4%)
- Neither Low Income nor Disadvantaged Communities: $319.9 Million (35%)
- Statewide or Not Applicable: $286.4 Million (32%)

Note: As of May 1, 2020
Commitment to Inclusion, Diversity, Equity and Access

• Collaboration with the Disadvantaged Communities Advisory Group

• Prioritize and invest in proper community outreach and engagement

• Partner with local community-based organizations

• Develop metrics that go beyond funding locations

• Seeking to provide 50% of Investment Plan funds to benefit low-income and disadvantaged communities
Legislation & Executive Orders are steering the state towards near- and zero-emission transportation.

**Climate**
- **2030**: 40% GHG reduction in economy
- **2030**: 20% GHG reduction in transportation fuels
- **2045**: Net zero carbon economy

**Air Quality**
- **2031**: 80% reduction in smog-forming NOx

Zero Emission Vehicles (ZEVs) are an essential part of achieving these goals!
Context Setting: Key ZEV Milestones

**Light Duty Vehicles**
- 2025: 1.5M ZEVs
- 2030: 5M ZEVs
- 2035: 100% of New Sales are ZEVs *(E.O. N-79-20)*

**Charging and Refueling Infrastructure**
- 2025: 250,000 Chargers (inc. 10,000 DC Fast Chargers)
- 2025: 200 Hydrogen Refueling Stations

**Medium- and Heavy-Duty Vehicles**
- 2029: 100% of New Transit Bus Purchases are ZEVs
- 2035: 100% of All Off-Road Vehicles and Equipment are ZEVs *(E.O. N-79-20)*
- 2035: 100% of All Drayage Trucks are ZEVs *(E.O. N-79-20)*
- 2045: 100% of All Trucks and Buses are ZEVs *(E.O. N-79-20)*
Regulations by the California Air Resources Board guide the adoption of zero emission vehicles and fuels

ZEV Regulation
- Requires automakers to generate or procure credits based on sales of ZEVs and internal combustion vehicles

Innovative Clean Transit Regulation
- Requires transit fleets to shift toward ZEV options

Advanced Clean Truck Regulation
- Requires truck manufacturers to sell an increasing percentage of zero-emission trucks

Low Carbon Fuel Standard
- Sets carbon intensity standard
- Producers of low-carbon fuel can produce and sell credits
## Context Setting: Other Funding Programs

<table>
<thead>
<tr>
<th>Low-Carbon Transportation Grants by Air Resources Board</th>
<th>FY 19-20 Allocations: $533 million, focused on ZEVs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• $238 million for the Clean Vehicle Rebate Project (CVRP)</td>
</tr>
<tr>
<td></td>
<td>• $182 million for clean trucks, buses and off-road freight (HVIP + CORE)</td>
</tr>
<tr>
<td></td>
<td>• $65 million for Clean Transportation Equity Projects (Plus Up, EFMP)</td>
</tr>
<tr>
<td></td>
<td>• $48 million to clean up heavy-duty truck emissions (AQIP)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Settlement Agreements</th>
<th>$900 million in one-time funds for EVs and charging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Volkswagen: $800 million for ZEV-related projects in CA</td>
</tr>
<tr>
<td></td>
<td>• NRG: $100 million for electric vehicle charging</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Investor-Owned Utility Investments</th>
<th>&gt;$1 billion approved over 10 years, mostly for EV charging infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Pilot programs: CPUC approved pilot programs for PG&amp;E, SDG&amp;E &amp; SCE</td>
</tr>
<tr>
<td></td>
<td>• Post-SB 350: More than $1 billion approved, mostly related to charging infrastructure for medium- and heavy-duty vehicles</td>
</tr>
<tr>
<td>Category</td>
<td>Funded Activity</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Zero-Emission Vehicles and Infrastructure</td>
<td>Light-Duty Electric Vehicle Charging Infrastructure and eMobility</td>
</tr>
<tr>
<td>Zero-Emission Vehicles and Infrastructure</td>
<td>Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure</td>
</tr>
<tr>
<td>Zero-Emission Vehicles and Infrastructure</td>
<td>Public Hydrogen Refueling Infrastructure</td>
</tr>
<tr>
<td>Related Needs and Opportunities</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Related Needs and Opportunities</td>
<td>Workforce Training and Development</td>
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<tr>
<td>Related Needs and Opportunities</td>
<td>Recovery and Reinvestment</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

*FY 20-21: $51 million one-time legislative expenditure authority to increase EV charging infrastructure
Progress in Charging Infrastructure

Progress Report
250,000 Chargers by 2025

- **173,959** Total Level 2 Chargers
- **240,000** Level 2 Charger Goal
- **9,185** Total DC Fast Chargers
- **10,000** DC Fast Charger Goal

**2020**

- **56,643** Existing Level 2 Chargers (Estimated)
- **117,316** With Funding Allocated Level 2 Chargers (Including CTP, Utilities, and Other Sources)
- **66,041** Gap from 2025 Goal

**2025**

- **4,889** Existing DC Fast Chargers (Estimated)
- **4,296** With Funding Allocated DC Fast Chargers (Including CTP, Utilities, and Other Sources)
- **815** Gap from 2025 Goal

*Not shown above are 505 existing Level 1 chargers, which are included in statewide charger counts, but not in the goal of 250,000 chargers.*
California Electric Vehicle Infrastructure Project (CALeVIP)

- Provides grants for light duty vehicle charging infrastructure, both L2 and DCFC
- 7 projects launched to date for $82.25 million in rebates
- 2 projects totaling $77.38 million are launching in 2020, with partner funding
- Projects are oversubscribed
- Nearly 60% of issued rebates have been for projects in disadvantaged communities
Additional Light-Duty Electric Vehicle Infrastructure Funding Opportunities

• Equitable Emobility
• Innovations in Charging and Use Cases
• Planning and Readiness
## Proposed Allocation for Light-Duty Charging Infrastructure and eMobility

<table>
<thead>
<tr>
<th>Category</th>
<th>Funded Activity</th>
<th>2020-2021 (Allocation)</th>
<th>Next 2½ FYs (Planned)</th>
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<tbody>
<tr>
<td><strong>Zero-Emission Vehicles and Infrastructure</strong></td>
<td>Light-Duty Electric Vehicle Charging Infrastructure and eMobility</td>
<td>$41.7 million</td>
<td>$40.2 million</td>
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<tr>
<td><strong>Zero-Emission Vehicles and Infrastructure</strong></td>
<td>Light-Duty Electric Vehicle Charging Infrastructure and eMobility</td>
<td>$51.0 million*</td>
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</tr>
</tbody>
</table>

*FY 20-21: $51 million one-time legislative expenditure authority to increase and accelerate EV charging infrastructure
Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure

- Supports Innovative Clean Transit Regulation and Advanced Clean Trucks Regulation
- Supports California’s Sustainable Freight Action Plan
- Coordinates with CARB on Medium- and Heavy-Duty ZEV Investments
- Focused on Medium- and Heavy-Duty ZEV Infrastructure
- Additional Areas of Interest:
  - Grid Integration
  - Integrated Storage Solutions
  - Charging Management
## Proposed Allocation for Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure

<table>
<thead>
<tr>
<th>Category</th>
<th>Funded Activity</th>
<th>2020-2021 (Allocation)</th>
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<tr>
<td>Zero-Emission Vehicles and Infrastructure</td>
<td>Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure</td>
<td>$20 million</td>
<td>$109.8 million</td>
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</table>
Hydrogen Refueling Infrastructure

- Assembly Bill 8 (Statutes of 2013)
  - $20 million (or 20%) annual allocation
  - Target: 100 publicly available stations

- Executive Order B-48-18
  - Target: 200 publicly available stations by 2025

- Hydrogen Refueling Infrastructure Solicitation (GFO-19-602)
  - Upwards of 110 new stations proposed for awards
  - Accounts for availability of future FYs within this multi-year Investment Plan
  - Encourages projects with fueling agreements with fleets of commercial vehicles and transit buses to increase station throughput
Progress in Hydrogen Refueling Infrastructure

Progress Report
200 Hydrogen Fueling Stations by 2025

- **172** PUBLIC STATIONS
- **200** STATION GOAL

- **44** OPEN RETAIL HYDROGEN FUELING STATIONS
- **128** WITH FUNDING ALLOCATED HYDROGEN FUELING STATIONS (INCLUDING CTP)
- **28** GAP FROM 2025 GOAL

HYDROGEN FUNDING ALLOCATED TO DATE: **$155.6 million**

FUTURE HYDROGEN STATION FUNDING THROUGH 2023: **$70 million**
## Proposed Allocation for Hydrogen Refueling Infrastructure

<table>
<thead>
<tr>
<th>Category</th>
<th>Funded Activity</th>
<th>2020-2021 (Allocation)</th>
<th>Next 2½ FYs (Planned)</th>
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<tr>
<td>Zero-Emission Vehicles and Infrastructure</td>
<td>Hydrogen Refueling Infrastructure</td>
<td>$20 million</td>
<td>$50 million</td>
</tr>
</tbody>
</table>
Zero- and Near Zero-Carbon Fuel Production and Supply

• Displaces fossil fuels and reduces GHGs

• Focused on conversions of waste streams and renewable hydrogen production
  ➢ Senate Bill 1383 (2016) – Reduce short-lived climate pollutants
  ➢ Senate Bill 1505 (2006) – Requires 33.3% renewable hydrogen
## Proposed Allocation for Zero- and Near Zero-Carbon Fuel Production and Supply

<table>
<thead>
<tr>
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<th>Funded Activity</th>
<th>2020-2021 (Allocation)</th>
<th>Next 2½ FYs (Planned)</th>
</tr>
</thead>
</table>
Manufacturing

• Focus on ZEVs, ZEV components, and ZEV Infrastructure
• Projects have created over 800 manufacturing jobs.
• Examples include Proterra, Chargepoint, TransPower, and Freewire.
14 ZEV MANUFACTURERS
in California designing and building cars, buses, motorcycles and trucks.

- Tesla
- BYD
- Proterra
- Zero
- Motiv
- Lucid
- Karma Automotive
- El Dorado National California
- Faraday Future
- Phoenix Motorcars
- Xos
- Greenpower Motor Co.
- Gillig
- Adomani
Related Needs and Opportunities

Workforce Training and Development
• Support ZEV and ZEV infrastructure workforce needs
• Prioritize workforce activities for disadvantaged communities

Recovery and Reinvestment (in response to COVID-19)
• Near-term expansions of existing projects
• Longer-term initiatives to increase private capital commitments
• Federal cost-share opportunities
## Proposed Allocation for Manufacturing and Workforce Training and Development

<table>
<thead>
<tr>
<th>Category</th>
<th>Funded Activity</th>
<th>2020-2021 (Allocation)</th>
<th>Next 2½ FYs (Planned)</th>
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<tr>
<td>Related Needs and Opportunities</td>
<td>Manufacturing</td>
<td>$2 million</td>
<td>$7 million</td>
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<tr>
<td>Related Needs and Opportunities</td>
<td>Workforce Training and Development</td>
<td>$1.5 million</td>
<td>$6 million</td>
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<tr>
<td>Related Needs and Opportunities</td>
<td>Recovery and Reinvestment</td>
<td>$10 million</td>
<td>-</td>
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</table>
Funding Prioritizes Zero Emission Investments for 2020-2023

- **$132.9M**
  - Light-Duty Electric Vehicle Charging Infrastructure and eMobility

- **$129.8M**
  - Medium and Heavy-Duty Zero-Emission Vehicles and Infrastructure

- **$70M**
  - Hydrogen Refueling Infrastructure

- **$25M**
  - Zero and Near Zero Carbon Fuel Production and Supply

- **$9M**
  - ZEV Manufacturing

- **$7.5M**
  - Workforce Development

- **$10M**
  - Recovery and Reinvestment

**Total: $384.2M**
Staff Recommendation

• Approval of this report, which includes the proposed allocations for this fiscal year, as well as the planned allocations for future fiscal years

• Approval of staff recommendation that this investment plan is exempt from CEQA
Two ways to provide comments:

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   5) Mute Zoom while calling to comment.

For each voting item, public comments are limited to 3 minutes per person and 1 person per organization.
Item 2: Order Instituting Rulemaking for Flexible Demand Appliance Standards - Docket No. 20-FDAS-01

October 14, 2020 Business Meeting

Nich Struven, Senior Mechanical Engineer
Efficiency Division, Appliances Office
Senate Bill 49 Requirements

- Requires CEC to develop **Flexible Demand Appliance Standards**, in coordination with LSEs and CPUC
  - Cost-effective, including GHG and grid benefits
  - Requires consumer consent
  - Open source and user-friendly
  - Cybersecurity
Appliance Load Shift Potential

Source: Final Report, CPUC working group on “Load Shift” January 31, 2019
Benefits to California

• Support efforts to **decarbonize** California's energy and building sectors

• Improve **grid reliability** and emergency response capability

• Make utility **bill savings** available to all consumers

• Reduce future electricity sector **infrastructure costs**
# Steps Towards New Standards

<table>
<thead>
<tr>
<th>Event</th>
<th>Timeline</th>
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</thead>
<tbody>
<tr>
<td>Order Instituting Rulemaking</td>
<td>October 2020</td>
</tr>
<tr>
<td>Invitation to Participate</td>
<td>Q4 2020</td>
</tr>
<tr>
<td>Public Workshop</td>
<td>Q4 2020</td>
</tr>
<tr>
<td>Draft Staff Report</td>
<td>Q2 2021</td>
</tr>
<tr>
<td>Initiate Formal Rulemaking</td>
<td>Q3 2021</td>
</tr>
<tr>
<td>Initial Standards Adopted</td>
<td>Q2 2022</td>
</tr>
</tbody>
</table>

* All dates are tentative based on results of research and pre-rulemaking activities
Approve the Order Instituting Rulemaking for Flexible Demand Appliance Standards - Docket No. 20-FDAS-01
Item 2 - Public Comment Instructions

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Item 3: Calistoga, Unit 19 Diesel Engine Driven Pump for Cooling Tower Wet Down System (81-AFC-01C)

October 14, 2020 Business Meeting

Eric Veerkamp, Compliance Project Manager
Siting, Transmission and Environmental Protection Division
Aerial View of Calistoga
• The emergency diesel engine would be used to prevent damage to the cooling tower from approaching wildfires.
• Provide clarity and cohesion between the CEC and air district conditions of certification.
Commission approval of the petition to install a new permanent diesel engine-driven pump for the cooling tower wet-down system at Calistoga, along with the revised proposed air quality conditions of certification set forth in staff's analysis.
Thank You!
Item 3 - Public Comment Instructions

Two ways to provide comments:

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   5) Mute Zoom while calling to comment.

For each voting item, public comments are limited to 3 minutes per person and 1 person per organization.
Item 4: Sonoma, Unit 3 Diesel Engine Driven Pump for Cooling Tower Wet Down System (80-AFC-01C)

October 14, 2020 Business Meeting

Eric Veerkamp, Compliance Project Manager
Siting, Transmission and Environmental Protection Division
Aerial View of Sonoma
Benefits to California

• The emergency diesel engine would be used to prevent damage to the cooling tower from approaching wildfires.
• Provide clarity and cohesion between the CEC and air district conditions of certification.
Recommendations

Commission approval of the petition to install a new permanent diesel engine-driven pump for the cooling tower wet-down system at Sonoma, along with the revised proposed air quality conditions of certification set forth in staff's analysis.
Thank You!
Item 4 - Public Comment Instructions

Two ways to provide comments:

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   OR

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Item 5: California Clean Energy Fund DBA CalCEF Ventures

October 2020 Business Meeting

Eleanor Oliver & Josh Croft, CalSEED Small Grants
Energy Research & Development Division, Energy Deployment & Market Facilitation Office
Impact In Numbers

- $65.8 million raised
- 52 jobs created
- 50 patents registered
- 70 pilot projects launched
- 6% Veteran-led
- 22% Minority-led
- 13% Women-led
- All other small business 59%
CalSEED Background

The California Sustainable Energy Entrepreneur Development Initiative (CalSEED) provides small-scale funding for early-stage clean energy concepts.

Two stages of funding:

**Concept Award**
- **$150,000**
  - Concept development & assistance
  - Mentorship from industry leaders
  - Introduction to resources to advance the concept

**Prototype Award**
- **$450,000**
  - Successful Concept Awardees prepare for commercialization
  - Business Plan Competition to push awardees to think about commercialization
4th Concept Award competitive solicitation held February 2020.

Companies were judged on their technology’s technical and commercial potential.

- Initial screening mechanism
- Written technology proposal

Companies with the top 7 to 8 scores per region are presented here for recommendation for CalSEED Concept Awards
Technology Areas

- Advance Power Electronics & Power Conditioning
- Energy Storage
- Energy Efficiency
- Zero- & Negative- Carbon Emission Generation
- Artificial Intelligence & Machine Learning
Projects by Technology Area

Advanced Power Electronics & Power Conditioning
Energy Storage
Energy Efficiency
Zero- and Negative-Carbon Emission Generation
Artificial Intelligence & Machine Learning

Technology Maturity
- Concept Formulated
- Proof of Concept Established
- Basic Prototype Tested in Lab

Number of Applications
0 1 2 3 4 5 6 7 8
Advanced Power Electronics & Power Conditioning

NeoCharge Corporation
NeoCharge Smart Plug Load Splitter

Whisper Energy System, Inc.
Empower-Power Anything, Anywhere, and Ultrafast Recharge under 2hrs

ALD Technical Solutions LLC
Novel Composites to Increase Power Line Capacity and Decrease Sag

Trianon Renewable Grid Reliability, LLC
Providing Frequency Regulation, Voltage Support and Synthetic Inertia with Synchronverters
Energy Storage

Hago Energetics, Inc.
Green Hydrogen from Biogas

UNIGRID LLC
Low Cost, Safe and Sustainable Grid Energy Storage

EH Group Technologies Inc.
Compact, Efficient & Cheap Hydrogen Electrolyzer

Innovasion Labs PINC, Inc.
Breakthrough Nanotechnology Significantly Elevating Battery Energy Density and Rapid Charging

Sonocharge
Recharge to Full Energy in Ten Minutes
Energy Efficiency

Cyclonatix, Inc.
High-Efficiency, Low-Cost, Non-REM Motor for DC & AC Power Supplies

Topolonet Corporation
BusIDTM Power Grid Topology and State Estimation Software

Idealab Studio
Advanced Air Stirling Cycle Based Heat-pump for Air-conditioning and Heating

Cypris Materials, Inc.
Paintable Heat-Reflective Coatings for Cool Building Retrofits

Photia Inc.
Eco-Efficient Produce Packaging with Improved Shelf Life by Passive Cooling
Zero- & Negative- Carbon Emission Generation

Portable Solar Inc.
Portable Solar & Utility CAPEX Optimization

Mlplus Solar Inc.
Alkali Metal-Ion Solar Battery

Planet A Energy, Inc.
Zero-emission Community Solar with Built-in Long-Duration Storage

Paulsson, Inc.
An Optical Pressure Sensor Array to Optimize Geothermal Energy Production

Noble Thermodynamic Systems, Inc.
Zero-Emission, Dispatchable and Efficient Power Cycle

Leap Photovoltaics Inc.
Cost and CapEx Reduction of Silicon Photovoltaics Through Streamlined Manufacturing

Taka Solar Corporation
Advanced Solar Panels Combining Thin-Film PV & Solar Tubes for Agriculture & Flat Roofs
Artificial Intelligence & Machine Learning

Gridware Inc.
Improving Situational Awareness of Distribution Equipment during Extreme Weather Condition

Waterhound Futures, Inc.
Predictive Modeling & Analytics Performance Optimization Software

EV Life, LLC
EV Climate Lending Platform

inRG Solutions, LLC
Power Line Analysis System

Parthian Energy
Rapid AI Screening to Significantly Reduce Cost of Battery Manufacturing

Tolo Inc.
Remote Inspection Platform for Utility Infrastructure

InfiniRel Corporation
Inverter Health Scanner
Staff Recommendation

- Approve the 28 small grant awards
- Staff and CalSEED representative available on the line for questions.
Two ways to provide comments:

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OR

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October 14, 2020 Business Meeting

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

• Longer duration storage needed to provide grid resiliency and to store excess renewable energy for later use

• Expected to play an important role in reaching California’s target of 100% Zero-Emission Electricity by 2045

• Can help fill in the gaps to provide a consistent, reliable source of energy:
  • Public Safety Power Shutoffs
  • Renewable energy unavailable in real time
  • Fossil fuel power plants phased out

• Diversity in technology needed to avoid raw material shortages and production bottlenecks
Overview

- Demonstrate 2000 kWh vanadium redox flow battery system with onsite solar
- Provide 10 hours+ of backup power to recreational center/emergency shelter
- Shift solar PV generation from mid-day to evening peak hours. Daily cycling for this function will reduce electricity costs.
- Pechanga Reservation in Temecula, Riverside County
- Funding: $1,998,101 (CEC) and $849,140 (match)
Staff Recommendation

• Approval of this agreement
• Adoption of staff’s determination that this action is exempt from CEQA
Item 6 - Public Comment Instructions

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Item 7: Department of Energy-National Renewable Energy Laboratory

October 14, 2020

Patrick Brecht, NREL Contract Manager
Fuels and Transportation Division, Transportation Policy and Analysis Office
Benefits to California

Collaboration between the National Renewable Energy Laboratory (NREL) and the CEC will continue to inform and improve multiple CEC programs that benefit all Californians, including:

- The **Clean Transportation Program’s** benefits assessment and support for hydrogen refueling stations
- The **AB 2127** electric vehicle charging infrastructure assessment
- The **Integrated Energy Policy Report’s** fuel and vehicle forecasts
Amendment 5 includes:

- Expansion of electric vehicle infrastructure projections (EVI-Pro)
- Clean Transportation Program’s 2021 Benefits Report
- Designing specifications for a hydrogen refueling station tester

Added funds: $1.47 million
New end date: December 31, 2023
Staff Recommendation

• Approve Amendment 5 to contract Agreement 600-15-001 with the U.S. Department of Energy's National Renewable Energy Laboratory

• Exempt from CEQA
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Item #8: Foundation for California Community Colleges
October 14, 2020

Larry Rillera, Air Pollution Specialist
Fuels and Transportation Division, Transportation Policy and Analysis Office
Anticipated Benefits

• Exclusive focus on disadvantaged and low-income communities in specified regions

• Build local capacity for informing and participating in Clean Transportation Program funding opportunities

• Increase CEC’s understanding of communities’ needs regarding zero-emission transportation
Overview

IDEAL* Communities Partnership Pilot Project

*Inclusion, Diversity, Equity, Access, and Local

- Needs Assessment
- Outreach and Engagement Planning
- Developing Outreach and Engagement Materials
- CTP Technical Assistance for Communities
- Student Ambassadors’ Community Feedback
- Community Forum
Staff Recommendation

- Approve an Agreement with the Foundation for California Community Colleges for $300,000

- Approve staff's determination that this action is exempt from the California Environmental Quality Act.
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Item Number 9: Local Ordinance Applications (19-BSTD-06)

October 14, 2020 Business Meeting

Danuta Drozdowicz, Efficiency Specialist
Efficiency Division, Building Standards Office
Benefits to California

• Reach Codes – local ordinances that exceed the Energy Code – provide the opportunity for local jurisdictions to participate directly, and even lead, in the state’s efforts to address climate change
Overview: The Local Ordinance Approval Process

For local building efficiency standards to be enforced:

1. Jurisdiction must file a determination that its standards are cost-effective

2. CEC must find that the local standards require a reduction of energy consumption levels compared to the current statewide Energy Code

Staff review application materials to confirm that these criteria are met, and make a recommendation based on the findings
2019 Energy Code Approved Local Ordinances To Date: 30 Ordinances from 28 Jurisdictions

1. Berkeley
2. Brisbane
3. Cupertino
4. Davis (2)
5. Hayward
6. Healdsburg
7. Los Angeles County
8. Los Gatos
9. Marin County
10. Menlo Park
11. Mill Valley
12. Milpitas
13. Mountain View
14. Pacifica
15. Palo Alto
16. Richmond
17. San Anselmo
18. San Francisco (2)
19. San Jose
20. San Luis Obispo
21. San Mateo
22. San Mateo County
23. Santa Monica
24. San Rafael
25. Santa Rosa
26. Saratoga
27. West Hollywood
28. Windsor
The City of Burlingame and consists of three Ordinances: Ordinance #1979, Ordinance # 1980 and Ordinance #1981

The Local Ordinance Application Submitted for Approval at this Business Meeting is from:
Staff Recommendation

• Staff reviewed application materials from this local jurisdiction

• Staff found, based on the application materials, that the criteria for approval are met

• Staff recommends that the City of Burlingame is approved to enforce the local ordinances
The City of Burlingame Local Ordinance # 1979 Requires:

1. New **Single Family** homes, including substantial additions and improvements, are all-electric.

2. Gas cooking appliances and fireplaces are permitted.

3. Exemptions allowed where all-electric building is not feasible.

4. Pre-wiring for electric equipment and appliances.
The City of Burlingame Local Ordinance # 1980 Requires:

1. New **Multifamily** buildings are all-electric.
2. Exemptions allowed where all-electric building is not feasible.
3. Prewiring for electric equipment and appliances.
4. Photovoltaic or solar thermal hot water systems.
1. New **Nonresidential** buildings are all-electric.
2. Gas cooking is permitted in public or commercial kitchens.
3. Exemptions allowed where all-electric building is not feasible.
4. Prewiring for electric equipment and appliances.
5. Photovoltaic or thermal hot water systems.
Item 9 - Public Comment Instructions

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Item 13

Go to: www.energy.ca.gov
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