

CEC initiatives and goals contributing to the ZEHTRANS vision and mission

ZEHTRANS



Vision

Competitive and equitable zero-emission rail in California



Mission

Work in partnership across government, communities, and industry to transition to a zero-emission rail system supportive of a sustainable, carbon neutral economy.



Air Resources Board



Department of Transportation



Energy Commission



GO-Biz

Foster clean energy innovation and entrepreneurship to help meet California's climate and energy policy goals

Support an efficient transition to zero-emission vehicles and infrastructure



California Energy Commission – Zero-Emission Vehicles and Infrastructure Funding

Peter Chen, Energy Research and Development Division

CARB Locomotive Technology Day - October 29, 2020



Outline

- Zero-Emission Transportation Policy Drivers
- CEC Grant Funding Programs
 - Electric Program Investment Charge (EPIC)
 - Natural Gas Research and Development Program
 - Clean Transportation Program
- Zero-Emission Vehicles and Infrastructure Funding
- Public Participation and Future Opportunities



Zero-Emission Transportation Policy Drivers

- Transportation electrification is a cornerstone strategy for meeting California's decarbonization goals:
 - SB 100: 100% zero-carbon electricity grid by 2045.
 - EO B-55-18: carbon neutral economy by 2045.
 - EO N-79-20: sets goals to transition new passenger car and truck sales, medium- and heavy-duty vehicles, drayage trucks, and off-road vehicles and equipment to 100% zero-emission.
- As zero-emission vehicles (ZEV) enter the market to move people and goods, strategies to increase customer satisfaction, ensure equitable electrification, and minimize impacts to the electricity grid are critical.
- Hydrogen can play an important role in a carbon neutral economy as a zero-emission transportation fuel, a long-term energy storage technology, and a resource for decarbonizing difficult-to-abate sectors.



Electric Program Investment Charge (EPIC)

- The EPIC Program is funded by an electricity investor-owned utility (IOU) ratepayer surcharge established by the California Public Utilities Commission (CPUC) in 2011.
- EPIC invests \$130M annually to fund clean energy technology projects that promote greater electricity reliability and resiliency, lower costs, increased safety, and other benefits to IOU ratepayers.
- EPIC research focus includes energy efficiency, energy generation, storage, grid resiliency, renewable integration, and electrified transportation.



Natural Gas R&D Program

- The Natural Gas R&D Program is funded by a natural gas IOU ratepayer surcharge established by the CPUC in 2004.
- The Natural Gas R&D Program invests \$24M annually to fund public interest R&D activities to overcome barriers to achieving California's statutory energy goals and benefit natural gas IOU ratepayers.
- Natural Gas R&D Program research focus includes energy efficiency, renewable energy and advanced generation, infrastructure safety and integrity, environmental research, and transportation.



Clean Transportation Program

- The Clean Transportation Program (formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program) has an annual budget of approximately \$100M.
- The Clean Transportation Program makes investments to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies.
- Complementary goals:
 - Improve air quality.
 - Invest in low-income and disadvantaged communities.
 - Promote economic development.
 - Increase alternative fuel use.
 - Reduce petroleum dependence.



Zero-Emission Vehicles and Infrastructure Funding

Program	Active Zero-Emission Medium- and Heavy-Duty Vehicles and Infrastructure Funding Opportunities
Electric Program Investment Charge (EPIC)	GFO-20-304 (\$20M) – Evaluating Bi-Directional Energy Transfers and Distributed Energy Resource Integration for Medium- and Heavy-Duty Fleet Electrification
Natural Gas R&D Program	GFO-20-604 (\$12.6M) – Hydrogen Fuel Cell Demonstrations in Rail and Marine Applications at Ports (co-funded by Clean Transportation Program)
Clean Transportation Program	GFO-20-605 (\$7.5M) – BESTFIT Innovative Charging Solutions GFO-20-603 (\$50M) – Block Grant for Medium-Duty and Heavy-Duty Zero-Emission Vehicle Refueling Infrastructure Incentive Projects GFO-20-602 (\$20M) – Zero-Emission Transit Fleet Infrastructure Deployment GFO-20-601 (\$3M) – Blueprints for Medium- and Heavy-Duty Zero-Emission Vehicle Infrastructure

<https://www.energy.ca.gov/funding-opportunities/solicitations>



Public Participation and Future Opportunities

- The CEC's research programs can potentially support zero emission rail technology advancement.
- Stay engaged with the CEC's public process:
 - Subscribe to list servers to stay informed on public workshops related to roadmap, investment plan and solicitation development.
 - Find partners and access resources and tools on **EmpowerInnovation.net**.





Thank You!

