Date of Hearing: March 20, 2023

ASSEMBLY COMMITTEE ON TRANSPORTATION
Laura Friedman, Chair
AB 823 (Schiavo) – As Amended March 2, 2023

SUBJECT: Clean Transportation Program: eligible projects

SUMMARY: Adds roadway integrated fueling and parking surface integrated fueling projects to the list of projects eligible for funding from the Clean Transportation Program (CTP).

EXISTING LAW:

1) Creates CTP, administered by the Energy Resources Conservation and Development Commission (also known as the California Energy Commission or CEC), to provide competitive grants, revolving loans, loan guarantees, or loans to various entities to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies. The fees that fund CTP sunset January 1, 2024. (Health and Safety Code (HSC) 44272)

2) Requires CEC to provide preference to projects that maximize the goals of the CTP, based on specified criteria.

3) Requires CEC to rank applications for projects proposed for funding awards based on solicitation criteria developed and give additional preference to funding projects with higher benefit-cost scores.

4) Limits the activities funded under the CTP to only those explicitly named in statute.

FISCAL EFFECT: Unknown

COMMENTS:

Since 2006, California has set several goals to reduce greenhouse gas (GHG) emissions, address climate change, and improve the public health of its residents. These goals require incremental progress that are intended to result in large emission reductions, including:

1) Reduce GHG emissions to 40% below 1990 levels by 2030. SB 32 (Pavley) Chapter 488, Statutes of 2016.

2) Reduce short-lived climate pollutant emissions, such as methane, to 40 to 50% below 2013 levels by 2030. SB 1383 (Lara) Chapter 395, Statutes of 2016.

3) Achieve a carbon-neutral economy by 2045. AB 1279 (Muratsuchi) Chapter 337, Statutes of 2022.

Additionally, California has led on the transition to zero-emission vehicles (ZEVs), setting specific goals to boost the supply of ZEVs as well as charging and fueling stations, including:

1) By 2025:
   a) 1.5 million ZEVs on the road (Executive Order. (EO) B-16-12)
   b) Installation of 200 hydrogen-fueling stations and 250,000 battery-electric vehicle chargers, including 10,000 direct-current fast chargers, by 2025. (EO B-48-18)

2) By 2030:
   a) 5 million ZEVs on the road. (EO B-48-18)
   b) 8 million ZEVs on the road. (California Air Resources Board (CARB) estimate to meet EO N-79-20)

3) By 2035:
   a) Transition 100% of new sales of passenger vehicles and trucks to ZEVs. (EO N-79-20)
   b) Transition 100 percent of drayage trucks to zero emission. (EO N-79-20)
   c) Transition 100% of operating off-road vehicles and equipment to zero emission everywhere feasible. (EO N-79-20)

4) By 2045:
   a) Transition 100% of operating medium- and heavy-duty trucks and buses to zero emission everywhere feasible. (EO N-79-20)

State needs significantly more EV chargers to meet projected EV needs. Based on the AB 2127 Analysis, CEC projects that approximately 700,000 to 1.2 million public and shared-private chargers will be needed by 2030 to support 5 million to 8 million light-duty ZEVs, respectively. According to the Zero-Emission Vehicle Infrastructure Plan, 80,000 light-duty public and shared-private EV chargers currently operate statewide, with another estimated 17,000 on the way.

What is roadway/parking surface integrated fueling? Roadway/ parking surface integrated fueling can eliminate the need for plug-in charging by allowing for wireless EV charging, also known as inductive charging, in a parking space, a bus stop, a city street or highway. This approach could help address the state's significant charging infrastructure needs. For example, a charging pad embedded in a roadway could charge the battery of an EV parked above it using wireless charging, eliminating the need to be plugged in. High-power, in-road, dynamic wireless charging could assist charge-sustaining EV operation (i.e. unlimited range with in-route recharge) while enabling the use of smaller, cheaper batteries. Wireless charging technology is not a new phenomenon. The Tesla coil, designed in 1891 by its namesake Nikola Tesla, was the first known system that could wirelessly transmit electricity. However, when it comes to wireless EV charging, it is still in the early market stages, and there are many questions surrounding this technology.

The National Renewable Energy Laboratory (NREL) is investigating the requirements and feasibility of wireless EV charging. Research at NREL focuses on associated hardware, communication, system planning, and control strategies, as well as the potential for in-road wireless charging to be cost-competitive with conventional fast charging technologies. NREL researchers are looking at various interrelated variables to design an optimized system; such as roadway classes to be electrified, roadway charging segment locations and lengths, charging

power levels, system interoperability to serve a range of vehicle classes, appropriate battery capacity to enable charge-sustaining operation for long-distance travel, and feasibility of wireless charging for shared automated EVs.

Clean Transportation Program expiring soon. Authorized under AB 118 (Nunez) Chapter 750, Statutes of 2007 and reauthorized by AB 8 (Perea) Chapter 401, Statutes of 2013, CTP invests up to $100 million annually in a broad portfolio of transportation and fuel transportation projects throughout the state. CEC leverages public and private investments to support adoption of cleaner transportation powered by alternative and renewable fuels. The program plays an important role in achieving California's ambitious goals on climate change, petroleum reduction, and adoption of ZEVs, as well as efforts to reach air quality standards. The program also supports the state's sustainable, long-term economic development. In recent years, CEC has recently focused CTP investments on ZEV infrastructure.

Funding for the CTP will expire January 1, 2024 unless it is reauthorized. The Administration proposed to reauthorize CTP in its January 2023 budget and to change the emphasis of the program to the development and deployment of zero-emission technology and fuels in the marketplace where feasible, and near-zero-emission technology and fuels elsewhere. Reauthorization presents an opportunity for the Legislature to change the activities the program funds.

Federal funding not available for induction charging. The 2021 federal Bipartisan Infrastructure Law provides $5 billion nationwide to build a network of EV charging stations every 50 miles along federally designated highways. None of the federal money is for induction charging road pilots. Other states are using their own money to test inductive charging or are relying on companies that make the technology to share the cost. Michigan, Indiana, Florida, Utah, and Pennsylvania have pilots of various cost and scope for in-road charging. California currently limits activities funded under the CTP to only those explicitly named in statute, although this could change depending on how the reauthorization bills recast the program.

Committee comments. It may seem premature for the state to seriously consider integrated roadway or parking surface charging in advance of automakers adopting this technology into new vehicle builds. However, this bill provides flexibility for the CEC to potentially pilot a project for specific use cases, such as for transit buses with frequent layover stops at regular locations. For example, transport agency Link Transit from Wenatchee, Washington, is wirelessly charging electric buses using inductive charging systems. After three years in daily use, the authority states the operating cost of the electric buses is about 51% of a diesel-fueled bus and claims the "wireless chargers have been a game-changer… They charge our electric buses for a few minutes on the layover between routes and provide additional range, allowing our buses to stay in service for 12 to 14 hours a day."

The Legislature is in the process of considering the reauthorization of CTP, and policy bills have been introduced in both houses. Therefore, any changes made to CTP by this bill would need to be reconciled with those bills prior to being sent to the Governor.

According to the author, "[This bill] opens new possibilities to address the imminent need for electric vehicle charging infrastructure. [This bill] does so by expanding the scope of eligible projects that the Clean Transportation Program can support. One potential technology in the expanded scope are "electric roads." This technology has the potential to provide both charging

flexibility and integration with existing right-of-ways that, if deployed strategically, could address many of the equity concerns surrounding current EV charging. California leads the nation electric car sales, and the state should take every opportunity to lead the nation in the technology development and deployment to support this rapidly expanding fleet."

Related and previous legislation: AB 241 (Reyes) of this session states the intent of the Legislature to enact future legislation related to the CTP.

SB 84 (Gonzalez) of this session states the intent of the Legislature to enact future legislation related to the CTP.

SB 589 (Hueso) Chapter 732, Statutes of 2021 adds a new project type eligible for funding under the CTP and expands existing workforce development requirements.

REGISTERED SUPPORT / OPPOSITION:

Support

None on file

Opposition

None on file

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