STATE OF CALIFORNIA
Budget Change Proposal - Cover Sheet
DF-46 (REV 09/19)

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Fiscal Year: 2020-21

Business Unit: 3360

Department: California Energy Commission

Priority Number:

Budget Request Name: 3360-012-BCP-2020-GB

Program: Development

Subprogram: Transportation Technology and Fuels

Budget Request Description: One-Time Expenditure Authority for Unspent ARFVTF Funds

Budget Request Summary: The Energy Resources Conservation and Development Commission (CEC) requests $51 million in one-time expenditure authority from the Alternative and Renewable Fuel and Vehicle Technology Fund (Fund 3117) to increase and accelerate the deployment of Electric Vehicle (EV) charging infrastructure which will support increased Zero Emission Vehicle (ZEV) adoption and deployment in California.

Requires Legislation: ☐ Yes ☒ No

Code Section(s) to be Added/Amended/Repealed:

Does this BCP contain information technology (IT) components? ☐ Yes ☒ No

If yes, departmental Chief Information Officer must sign.

Department CIO Name:

Department CIO Signature:

Signed On Date:

For IT requests, specify the project number, the most recent project approval document (FSR, SPR, S1BA, S2AA, S3SD, S4PRA), and the approval date.

Project Number:

Project Approval Document:

Approval Date:

If proposal affects another department, does other department concur with proposal?

☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By: John Butler

Date: 10/18/2019

Reviewed By: Melanie Vail

Date: 10/18/2019

Department Director: Drew Bohan

Date: 10/23/2019

Agency Secretary: Bryan Cash

Date: 10/24/2019

Department of Finance Use Only

Additional Reviews: Capital Outlay:☐ ITCU:☐ FSCU:☐ OSAE:☐ Department of Technology:☐

PPBA: Click or tap here to enter text.

Date submitted to the Legislature:

A. Budget Request Summary

The Energy Resources Conservation and Development Commission (CEC) requests $51 million in one-time expenditure authority from the Alternative and Renewable Fuel and Vehicle Technology Fund (ARFVTF) to increase and accelerate the deployment of Electric Vehicle (EV) charging infrastructure which will support increased Zero Emission Vehicle (ZEV) adoption and deployment in California. The one-time funding originates from the available fund balance of the ARFVTF.

B. Background/History

The transportation sector is responsible for approximately 50 percent of the state's greenhouse gases and 80 percent of smog-forming oxides of nitrogen that contribute to the state's air quality challenges. To meet California's climate mandates and clean air standards, California must dramatically reduce transportation sector pollution. California has worked to reduce these emissions through a multi-pronged approach, including investing in public transit, active mobility such as walking or cycling, and the high speed rail system. However, significant progress is needed to reduce emissions from the over 25 million passenger vehicles on California roads.

State laws require greenhouse gas reductions. For instance, Senate Bill 32 (Chapter 249, Statutes of 2016) requires the state to reduce greenhouse gas emissions by 40 percent by 2030. As part of Assembly Bill 2127 (Chapter 365, Statutes of 2018), the Legislature recognizes that advanced clean vehicles, such as ZEVs, are necessary for reducing greenhouse gas emissions. AB 2127 also states that "it is the policy of the state and the intent of the Legislature to encourage transportation electrification as a means to achieve ambient air quality standards and the state's climate goals."

California's ZEV Action Plan includes the following major milestones to meet California's aggressive ZEV goals:

• By 2020: California's ZEV infrastructure will be able to support up to 1 million vehicles.
• By 2025: Over 1.5 million ZEVs will be on California roadways and their market share will be expanding. The public and private sector will spur the construction and installation of 200 hydrogen refueling stations and 250,000 ZEV chargers including 10,000 direct current fast chargers.
• By 2030: At least 5 million ZEVs will be on California roadways.

California's ZEV market has grown significantly. The number of zero-emission passenger vehicles on the road in California expanded from approximately 25,000 in 2012 to over 650,000 by October 2019 – more than any other state and about half of all the ZEVs nationwide. Over 50 ZEV models are on the market for consumers, compared to five at the start of 2012, with models now including mini-vans and sport utility

vehicles. In 2018, ZEVs accounted for over 10 percent of all new car sales in California.

While the state has provided financial rebates for the purchase of EVs to reach the state's transportation electrification goals, Executive Order B-48-18 calls for the installation of 250,000 EV chargers, including 10,000 direct current fast chargers.

California needs to grow the electric vehicle charging network from the current 40,000 chargers to approximately 250,000 chargers by 2025 to fulfill the objectives of Executive Order B-48-18. Table 1 below includes the estimated number of existing charging connectors installed to date as well as announced plans from other major programs (including Investor Owned Utilities) and expected future Clean Transportation Program (also known as the Alternative and Renewable Fuel and Vehicle Technology Program) funding. As seen in the table below, California has an anticipated gap of just over 81,000 chargers.

CEC staff estimates that incentive levels currently need to be $5,500 per Level 2 charger and $75,000 per DC fast charger. Table 2 below describes the differences between Level 2 and DC fast chargers.

If this proposal is approved and 40 percent of the funding is allocated to Level 2 chargers and 60 percent to DC fast chargers through the California Electric Vehicle Infrastructure Project (CALeVIP), the additional $51 million is expected to deploy 3,500 Level 2 and 380 DC fast chargers. CALeVIP utilizes up to 7 percent of funding to cover the costs of implementation of the various projects. Any funding administered outside of CALeVIP will be absorbed through existing resources.

The identified gap might be reduced further by the introduction of new technologies (such as mobile chargers or faster charging rates) that reduce the ratio of necessary charging connectors per plug-in electric vehicle. However, it is also possible that California will exceed the goal of 1.5 million ZEVs on the road by 2025, and the state will need more chargers to meet the expanded market.

The CEC's "California Plug-In Electric Vehicles Infrastructure Projections: 2017-2025" indicates that EV charger installations will need to exceed the goals contained in Executive Order B-48-18 in order to support 5 million ZEVs on California's roads by 2030.

In order to support the continued expansion of the EV market and support the charging needs of current and future EV drivers, the CEC created the CALeVIP. CALeVIP provides funding incentives for EV charging infrastructure at publicly accessible sites throughout California and provides enhanced rebates for installations within disadvantaged communities. Four projects are currently active within the following geographic locations: Fresno County, Southern California (including Los Angeles,

Orange, Riverside, and San Bernardino counties), Sacramento County, and Northern California (including Humboldt, Shasta and Tehama counties). Projects in additional geographic locations are planned in 2019 and 2020.

Through a competitive solicitation, the Clean Transportation Program awarded a block grant to the Center for Sustainable Energy to implement CALeVIP. The block grant was authorized for up to $200 million; however, the CEC provides funding in increments as CALeVIP projects are implemented and funding is available. To date, CEC has encumbered $76 million under the CALeVIP block grant. Demand for incentive funding has been strong with some projects being oversubscribed in funding requests. Additional funding will be encumbered as funds become available under the Clean Transportation Program or other sources.

The goal of CALeVIP is to incentivize chargers in each region (as determined by the Electric Vehicle Infrastructure Projections tool (EVI-Pro) based on a ratio of future battery electric vehicles and the necessary electric vehicle infrastructure as follows:

Level 2: 50 percent of projected need
DC Fast Chargers: 30 percent of projected need

CALeVIP is working with local agencies and other funding partners to increase the funding available for incentives in order to exceed CALeVIP's goals identified above. To date, CALeVIP has partnered and leveraged funding from the Sacramento Municipal Utility District and Monterey Bay Community Power to increase overall charger deployments in their regions. CALeVIP also has plans to partner with and leverage additional funding from Peninsula Clean Energy, Silicon Valley Clean Energy, San Jose Clean Energy, Silicon Valley Power, City of Palo Alto Utilities, San Diego Association of Governments, San Diego Air Pollution Control District, Sonoma Clean Power, and the Northern Sonoma County Air Pollution Control District to deploy incentive projects in 2020. CALeVIP partnered with the San Joaquin Valley Air Pollution Control District's ChargeUp Program to allow applicants to apply for incentives from both funding opportunities which allows both CALeVIP and ChargeUp to deploy more chargers than originally anticipated.

Table 1. Number of Existing Chargers and Estimated Chargers Based on Allocated Funding

Existing and Estimated Chargers	Level 2 Charging Connectors	DC Fast Chargers
Existing Charging Connectors (Estimated)	37,400	2,900
Estimated Chargers Based on Allocated Funding (includes anticipated funding from Clean Transportation Program)	124,600	3,500
Total	162,000	6,400
2025 Goal (Executive Order B-48-18)	*240,000*	*10,000*
Gap From Goal	78,000	3,600

Source: CEC. Analysis as of March 8, 2019. Existing charging ports estimated based on available data from U.S. Department of Energy's Alternative Fuels Data Center, as well as informal interviews with some (but not all) major charging infrastructure providers. Estimated chargers numbers assumes $33 million per year for light-duty EV charging infrastructure from the Clean Transportation Program through the current program end date of January 1, 2024 and evenly split between Level 2 and DC fast chargers. Estimate of ports from other state programs derived from public presentations and statements by utilities, California Public Utilities Commission, California Air Resources Board, other entities, and the CEC.

Table 2. Differences Between Level 2 and DC Fast Chargers

Level 2	• Considered a mid- to high-power charging system, 208/240 Volts Alternating Current, up to 80 Amps. • Provides an average 10 to 20 miles of range per hour of charge, depending on power level of the charger and the type of electric vehicle. • Connects to the electric vehicle with a Society of Automotive Engineers defined J1772 connector.
Direct Current Fast Charger (DCFC)	• Considered a high-power charging system, 200 - 500 Volts Direct Current, up to 350 Amps. • Provides an average of 60 to 100 miles of range per hour of charge, depending on the power level of DCFC and the type of electric vehicle. • Connects to the electric vehicle through a direct current port using one of three types of connectors (SAE Combo, CHAdeMO, or Tesla), defined by the Society of Automotive Engineers.

Source: Electric Vehicle Charger Selection Guide, updated January 2018, collaboratively prepared by multiple California government agencies (including the CEC) and non-profit agencies.

Resource History

Dollars in thousands

Program Budget	2014-15	2015-16	2016-17	2017-18	2018-19 1/
Authorized Expenditures (Provisional language allows for a four-year encumbrance period with an additional four-year liquidation period. Authorized expenditures include carry-over funds. 2018-19 includes $75 million in one-time funding (PRC 26205.5) and $57.5 million in one-time funding for ZEV infrastructure.)	$172,857	$153,001	$173,710	$177,512	$301,075
Actual Expenditures	$148,963	$85,892	$102,456	$115,942	$93,378
Revenues (2018-19 includes one-time revenue transfers amounting to $90 million: $15 million per Item 3900-011-3119 (Budget Act of 2018) and $75 million from the Clean Energy Job Creation Fund per Public Resources Code 26205.5.)	$106,038	$114,924	$110,813	$115,592	$212,681
Authorized Positions	44.0	59.0	59.0	59.0	59.0
Filled Positions	43.2	49.2	52.1	48.7	54.1
Vacancies	0.8	9.8	6.9	10.3	4.9

1/ Fiscal year 2018-19 reflects the best available information for use in the decision-making for this fund. Additional review and reconciliation of the 2018-19 ending fund balance will occur in the spring.

Workload History

CALeVIP (Cumulative Totals through 6/30/2019)

Workload Measure	7/1/2017 – 6/30/2019
CALeVIP Projects Initiated	4
# of Level 2 Connectors Expected to be Incentivized	2,609
# of Level 2 Connectors Incentive Requests Received	1,531
# of DC Fast Chargers Expected to be Incentivized	564
# of DC Fast Charger Incentive Requests Received	1,190

CALeVIP incentive projects were initiated beginning in fiscal year 2017-18. Demand for incentive reservations has been robust especially for DC fast chargers where demand exceeds available funding.

Fresno County Incentive Project (Level 2 Only)

Workload Measure	Launched December 2017
# of Level 2 Connectors Expected to be Incentivized	727
# of Level 2 Connectors Incentive Requests Received	482

The Fresno County Incentive Project was the first project initiated under CALeVIP and only incentivizes Level 2 chargers. While funding remains, demand for reservations has been strengthening as CALeVIP becomes more well-known. The CEC is planning to expand this project in the near future by including DC fast chargers and expanding the geographic area covered to the California's central valley.

Southern California Incentive Project (DCFC Only)

Workload Measure	Launched August 2018
# of DC Fast Chargers Expected to be Incentivized	446
# of DC Fast Charger Incentive Requests Received	922

The Southern California Incentive Project was launched in August 2018 and only incentivizes DC fast chargers since other funding sources in this region were incentivizing Level 2 chargers. As can be seen, the demand for incentives has far exceeded the amount of funding available.

Sacramento County Incentive Project

Workload Measure	Launched April 2019
# of Level 2 Connectors Expected to be Incentivized	1,400
# of Level 2 Connectors Incentive Requests Received	612
# of DC Fast Chargers Expected to be Incentivized	97
# of DC Fast Charger Incentive Requests Received	163

Northern California Incentive Project

Workload Measure	Launched May 2019
# of Level 2 Connectors Expected to be Incentivized	482
# of Level 2 Connectors Incentive Requests Received	437
# of DC Fast Chargers Expected to be Incentivized	21
# of DC Fast Charger Incentive Requests Received	105

The Sacramento County and Northern California Incentive Projects were recently launched earlier this year. As can be seen, demand for DC fast chargers has greatly exceeded funding availability.

In addition to CALeVIP, the Clean Transportation Program is considering competitive grant funding solicitations to continue the necessary build-out of EV charging installations. These investments may include projects to support infrastructure supporting e-mobility (including car-sharing, ride-sharing and other e-mobility options); innovative infrastructure to support the continued improvements and applications for charging technologies; and infrastructure supporting the electrification of medium- and heavy-duty vehicles throughout California.

C. State Level Considerations

This proposal provides funding for the installation of EV infrastructure to zero-emission transportation throughout California. The state will directly benefit from the economic and environmental improvements that will be gained through the continued deployment of EVs. The negative environmental impacts that the transportation sector has on California are cumulative and become increasingly significant the longer they are left unchecked. While other California entities and utilities have invested in EV charging infrastructure, expected investments from these entities from 2020-2025 are currently unknown. The benefits from the additional funding requested in this proposal will support other state environmental regulatory, health, and economic development agencies by providing funding and support for projects that positively impact the air quality and job creation goals of these agencies.

The CEC has already established CALeVIP as a means to efficiently disburse incentives for publicly accessible EV charging infrastructure in regions of the state needing additional EV charging infrastructure to support the projected EV deployments. Additional direct investments into efficient, reliable and convenient EV charging infrastructure will help close the existing gap that currently inhibits ZEV growth as California aims to meet its ambitious emission reduction goals to tackle the state's air quality issues.

The additional funds requested will allow the CEC to increase the availability of EV charging infrastructure and support efforts to improve charger technology and reduce overall equipment costs. Expanding infrastructure accessibility and improving the reliability of stations in California, particularly destination infrastructure and in multi-family dwelling units, will help ensure increased zero emission vehicle miles traveled and support the continued momentum in EV deployments in California.

This proposal is consistent with the CEC's 2019 Strategic Plan:

GOAL 6 – TRANSPORTATION

Promote development and deployment of advanced transportation technology, including alternative and renewable fuels, vehicles, technologies, and infrastructure, to help the state achieve its energy security, petroleum reduction, clean air, and greenhouse gas reduction goals.

D. Justification

California has seen an 80 percent increase in electric vehicle sales from 2017 to 2018 alone, and demand for additional charging exists today. Mass adoption of ZEVs is a critical component in California's decarbonization goals, air quality standards and petroleum reduction goals. A convenient, reliable network of public EV charging stations is critical to continue supporting the expansion of EV ownership in California and to ensure state ZEV deployment goals are realized.

Additional public funding is still appropriate and necessary to meet the needs of prospective EV buyers through 2025. Additional funding will accelerate EV charger deployments which will support the continued momentum in EV deployments in California.

The increased funding for ZEV infrastructure will benefit disadvantaged and low-income communities to ensure all Californians have the opportunity to participate in California's clean energy future. The CEC's utilization of CALeVIP or other funding solicitations will include requirements to ensure that funding will benefit these communities via specific

funding set-asides or scoring preferences.

The CEC has the requisite expertise, knowledge, and systems already in place to effectively and efficiently administer ZEV charging infrastructure funding to meet the goals in Executive Orders B-48-18 and B-16-12. To date, the CEC has provided $94.9 million in funding for charging infrastructure, which has so far funded 9,655 connectors (255 Level 1, 8,166 Level 2, and 1,237 DCFC). The funds are used for charging equipment, associated equipment, regulatory requirements, networking, and education and outreach. The CEC has been at the forefront of ZEV infrastructure deployment and has established strong working relationships with EV stakeholders to advance and accelerate the deployment of EV charging infrastructure.

The additional funding in this proposal supports Executive Orders B-48-18 and B-16-12 and the 2016 ZEV Action Plan that directs state government to transform California's transportation sector by helping accelerate the market for ZEVs.

E. Outcomes and Accountability

Increased Deployment of EV Infrastructure in California. The additional funding will incentivize about 4,000 EV chargers throughout California, thereby reducing the estimated 80,000 EV charger gap.

Accelerated Deployment of ZEV Infrastructure in California. The additional funding will accelerate ZEV infrastructure deployments throughout California by utilizing available funding now and using the existing funding mechanisms and expertise of the CEC.

Accelerated Environmental and Health Benefits to Californians. The additional funding will accelerate deployment of EV infrastructure in California which, in turn, accelerates ZEV adoption resulting in environmental and health benefits.

Economic Stimulus and Job Creation. The additional funding will support the installation of EV infrastructure leading to construction and installation jobs in the communities where the projects are located.

Management and Oversight. CEC staff are experienced in providing management and oversight to funded projects. Project managers will be able to provide the necessary oversight and management of the individual projects to proactively resolve issues and ensure projects are completed in accordance with agreement requirements, on time, and on budget.

Projected Outcomes

Workload Measure	July 2019 - June 2020	July 2020 - June 2021	July 2021 - June 2022	Total
Projects Expected to be Initiated	3	4	4	11
# of Level 2 Connectors to be Incentivized	2,109	6,109	2,400	10,618
# of DC Fast Chargers Expected to be Incentivized	637	672	264	1,573

The fiscal year 2020-21 projected outcomes include the additional $51 million requested under this proposal and expected outcomes are based on current CALeVIP design. Based on lessons learned under CALeVIP, CEC is considering revisions to requirements, funding levels, and incentive levels to maximize the benefits of state funding and reduce the projected EV charger gap to meet California's ZEV goals. Even with CALeVIP modifications and the additional appropriation within this proposal, CEC staff estimate a gap will still exist to meet both the 2025 and 2030 ZEV goals.

F. Analysis of All Feasible Alternatives

Option 1: Approve this Proposal.

Pro: Accelerates and increases ZEV infrastructure deployment, which will facilitate the deployment of ZEVs in California, and provide jobs and economic benefits to California.

Con: Requires appropriation of additional funds for EV infrastructure deployment, but does not include other Clean Transportation Program funding areas such as low-carbon fuel production and hydrogen refueling infrastructure.

Option 2: Do Nothing.

Pro: No additional appropriation authority is necessary.

Con: Without reliable and widespread infrastructure to support the use of ZEVs, California may not be able to meet the goals of California's ZEV Action Plan and Executive Order B-48-18. Lack of sufficient, reliable, and convenient EV charging infrastructure may impede the momentum of ZEV adoption in California.

G. Implementation Plan

Upon approval of this proposal, the CEC will draft the Clean Transportation Program Fiscal Year 2020-2021 Investment Plan Update to include this funding as part of the EV charging infrastructure funding allocation. Upon approval of the 2020-2021 Investment Plan, and upon adoption of the California State Budget, CEC will develop and administer funding solicitations and execute and manage funding agreements.

H. Supplemental Information

None.

I. Recommendation

Approve $51 million in one-time expenditure authority from the ARFVTF to fund EV charging infrastructure projects through the CEC's Clean Transportation Program.

BCP Fiscal Detail Sheet

BCP Title: One-Time Expenditure Authority for Unspent Alternative and Renewable Fuel and Vehicle Technology Fund (ARFVTF) Funds

BR Name: 3360-012-BCP-2020-GB

Budget Request Summary

Operating Expenses and Equipment

Operating Expenses and Equipment	FY20 Current Year	FY20 Budget Year	FY20 BY+1	FY20 BY+2	FY20 BY+3	FY20 BY+4
54XX - Special Items of Expense	0	51,000	0	0	0	0
Total Operating Expenses and Equipment	**$0**	**$51,000**	**$0**	**$0**	**$0**	**$0**

Total Budget Request

Total Budget Request	FY20 Current Year	FY20 Budget Year	FY20 BY+1	FY20 BY+2	FY20 BY+3	FY20 BY+4
Total Budget Request	**$0**	**$51,000**	**$0**	**$0**	**$0**	**$0**

Fund Summary

Fund Source

Fund Source	FY20 Current Year	FY20 Budget Year	FY20 BY+1	FY20 BY+2	FY20 BY+3	FY20 BY+4
State Operations - 3117 - Alternative and Renewable Fuel and Vehicle Technology Fund	0	51,000	0	0	0	0
Total State Operations Expenditures	**$0**	**$51,000**	**$0**	**$0**	**$0**	**$0**
Total All Funds	**$0**	**$51,000**	**$0**	**$0**	**$0**	**$0**

Program Funding	FY20 Current Year	FY20 Budget Year	FY20 BY+1	FY20 BY+2	FY20 BY+3	FY20 BY+4
2390010 - Transportation Technology and Fuels	0	51,000	0	0	0	0
Total All Programs	**$0**	**$51,000**	**$0**	**$0**	**$0**	**$0**