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February 18, 2022

Alice Reynolds
President
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298

Re: Infrastructure Investment and Jobs Act of 2021- Federal Funding Opportunities

Dear President Reynolds:

San Diego Gas & Electric Company (SDG&E) appreciates the California Public Utilities Commission's (Commission) January 24, 2022, inquiry regarding SDG&E's plan to apply for available federal funding appropriated through the Infrastructure Investments and Jobs Act of 2021 (IIJA).¹

We are excited about the historic IIJA funding opportunities available through competitive grants distributed by the United States Department of Energy (DOE) as well as other IIJA-related funding opportunities that could result in infrastructure investments in our communities – investments that in turn could ultimately inure to the benefit of our customers, including by improving the reliability and resiliency of our energy systems, and alleviating upward rate pressure on energy bills. In addition, our customers may benefit from the meaningful federal funding opportunities presented by the IIJA to deploy cutting-edge technologies, accelerating the transition to a clean energy economy.

SDG&E is closely monitoring the launch of the IIJA programs administered by various responsible federal agencies. For example, SDG&E recently submitted comments in response to a U.S. Department of Transportation Federal Highway Administration (DOT) request for information, in which DOT sought comments on the nine factors set forth in the statute as guidance for states and localities to strategically deploy electric vehicle (EV) charging infrastructure through the DOT-administered IIJA program.²

Beyond this recent DOT example, and as the Commission is aware, federal agencies such as DOE are in the very early stage of initiating processes to enable interested parties such as

¹ H.R. 3684, 117th Cong. § 1 (2021).

² Docket No. FHWA-2021-0022. See SDG&E Comments dated Jan. 28, 2022, attached.

SDG&E to provide comments or apply for funding for IJJA programs. Given the nascent stage of the federal government's rollout of the different programs, it would be premature for SDG&E at this time to commit to seeking funding for any particular IJJA-sponsored project area, especially as we continue to familiarize ourselves with the law's funding opportunities.

With respect to the competitive grants noted in the Commission's January 24 letter, it is our current understanding that federal agencies will establish program requirements and issue funding opportunity announcements (FOAs) specifying details such as who is eligible for the grant, application requirements, whether a non-federal contribution is required, applicant evaluation criteria, and other funding conditions. Based on information recently publicized by the White House, we would expect to see FOAs issued later this year – starting in Q2 and extending through the end of this year for some of the relevant DOE-administered projects.³

Despite the early stages of the federal government's process, based on the information to date, we know that the areas of interest to SDG&E will be the IJJA-funded programs that align with our company's mission to improve lives and communities by building the cleanest, safest and most reliable energy infrastructure company in the country. In that regard, project areas highlighted in the Commission's January 24 letter that SDG&E would intend to explore more thoroughly as additional information becomes available from the sponsoring federal agencies include, for example, Preventing Outages and Enhancing the Resilience of the Electric Grid Program, the Smart Grid Investment Matching Program, the Clean Hydrogen Hubs Program, and the Clean Hydrogen Electrolysis Program. In addition, although not specifically highlighted in the Commission's letter, SDG&E is also interested in exploring other IJJA-funded areas, such as programs associated with EV transportation hubs and corridors.

As we continue to develop more specific plans around the various IJJA funding opportunities, we look forward to the opportunity to share that information with your office in a way that is consistent any with applicable laws such as any federal information-sharing restrictions. Finally, given that a portion of the IJJA funding will go to the State of California, we would be interested in updates from the Commission as to its vision for the deployment of those State-run funding programs.

In the meantime, please let us know if you have further questions about this exciting opportunity.

Sincerely,



Bruce Folkmann
President and Chief Financial Officer
San Diego Gas & Electric Company

³ See generally, Building a Better America, A Guidebook to the Bipartisan Infrastructure Law for State, Local, Tribal and Territorial Governments and Other Partners (White House), Jan. 31, 2022.

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Cc: Commissioner Clifford Rechtschaffen, CPUC
Commissioner Genevieve Shiroma, CPUC
Commissioner Darcie L. Houck, CPUC
Commissioner John Reynolds, CPUC
Rachel Peterson, Executive Director, CPUC
Christine Jun Hammond, General Counsel, CPUC
Simon Baker, Acting Deputy Executive Director for Energy and Climate Policy, CPUC
Pete Skala, Director of Efficiency, Electrification, and Procurement, CPUC
Grant Mack, Director of Office of Governmental Affairs, CPUC

Attachment

SDG&E Comments (January 28, 2022) - Docket No. FHWA-2021-0022



Rhiannon Davis
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January 28, 2022

Stephanie Pollack,
Deputy Administrator, Federal Highway Administration
U.S. Department of Transportation
1200 New Jersey Ave. SE, W12-140
Washington, DC 20590-0001

RE: Federal Highway Administration, U.S. Department of Transportation, Docket No. FHWA-2021-0022

Deputy Administrator Pollack:

San Diego Gas & Electric Company ("SDG&E") appreciates the opportunity to provide comments to the **Federal Highway Administration ("FHWA"), U.S. Department of Transportation ("DOT"), Docket No. FHWA-2021-0022** in response to the *Infrastructure Investment and Jobs Act ("IIJA") Request for Information*.

SDG&E applauds the historic investment commitments made by the federal government through the Bipartisan Infrastructure Law ("BIL"), enacted as the IIJA, including \$7.5 billion to build out a national electric vehicle ("EV") charging network and achieve President Biden's goal of 500,000 EV chargers by 2030. Of these funds, California is expected to receive \$384 million over five years and may also apply for grants for EV charging from a \$2.5 billion discretionary fund.¹ Specific to the FHWA, the BIL provides more than \$350 billion over 5 fiscal years (FY 22-26) for surface transportation programs. This RFI seeks input on how best to facilitate FHWA's implementation of the BIL, specifically the EV Charging Program and the Charging and Fueling Infrastructure Program.

ABOUT SDG&E

SDG&E is a regulated, investor-owned utility ("IOU") that provides energy service to 3.6 million people through 1.4 million electric meters and 873,000 natural gas meters across 4,100 square

¹ U.S. Department of Transportation, *The Bipartisan Infrastructure Law Will Deliver for California*, November 2021.
https://www.transportation.gov/sites/dot.gov/files/2021-11/Bipartisan_Infrastructure_Law_California.pdf

miles in San Diego County and southern Orange County, California. SDG&E's more than 4,000 employees serve businesses and residents across 25 communities with a "North Star" of delivering clean, safe, and reliable energy throughout its service territory. SDG&E is proud to partner with the State and stakeholders to help achieve California's environmental goals, which include reductions in greenhouse gases ("GHG"), a focus on air quality, and commitments to clean energy, equity, and sustainability.

SDG&E's Commitment to Decarbonizing the Transportation Sector. In 2020, SDG&E released its first Sustainability Strategy and provided a Progress Update in 2021.² Among SDG&E's goals is a commitment to operate a 100 percent zero-emission fleet by 2035, including interim goals of electrifying 100 percent of its light-duty fleet and transitioning 30 percent of its overall fleet to zero-emission vehicles ("ZEV") by 2030.

SDG&E Programs. SDG&E has an established and ongoing commitment to clean transportation innovation. It provides incentives and promotes the adoption of electric and other clean vehicles. SDG&E has also helped enable transportation electrification in the San Diego region by building EV charging stations in workplaces and multi-unit dwellings ("MUD"), at ride and drives, and for several industry-related sectors. Over the past decade, SDG&E has developed a robust portfolio of EV charging infrastructure programs to support the electrification of a full spectrum of light, medium and heavy-duty vehicles and equipment, including trucks, school buses, transit buses, and forklifts. This has been achieved through a suite of Power Your Drive ("PYD") programs, Priority Review Programs, and pilot projects under California Senate Bill ("SB") 350 (*De Leon, Chapter 547, Statutes of 2015*).

SDG&E PYD programs install charging stations at workplaces and MUDs, fleets, schools, and parks and beaches. And the SB 350 pilots have focused on electrification of the port and airport, fleet delivery trucks, park and ride lots and highways, green shuttles, and dealership EV sales incentives. To date, SDG&E has installed roughly 3,500 chargers at over 250 sites and in the coming years expects to build thousands more to help meet California's ambitious clean transportation goals. Overall, more than 30 percent of SDG&E's charging installations have been in underserved communities. SDG&E has also developed a Level 2 ("L2") charging site with a Tribal partner. In addition, SDG&E developed EV rates for vehicle charging inside and outside of single-family homes, including for fleets, and is piloting a vehicle-to-grid ("V2G") project with a local school district using electric school buses.

COMMENTS

Aggressive public policy and a range of available incentives have helped drive California's position in the ZEV market, and SDG&E is proud to be an innovator in this space. Utilities have played an integral role in developing the charging infrastructure needed to support widespread ZEV adoption as well as piloting new technology applications. Federal and State funding to

² San Diego Gas & Electric Company, *Building a Better Future – SDG&E Sustainability Progress Report*, October 2021. https://www.sdge.com/sites/default/files/documents/Sustainability_2021.pdf

accelerate the buildout of California's EV charging network will not only benefit Californians, but it will also support the development of replicable policies and implementation models that can help achieve national and international clean air and climate goals.

SDG&E's attached responses to the questions posed by DOT as part of this RFI focus heavily on the California market, the importance of allowing on-the-ground realities of different regions to inform how grant funds are spent, and the role of utilities, like SDG&E, in facilitating widespread transportation electrification.

SDG&E is also a member of the National Electric Highway Coalition ("NEHC"), led by Edison Electric Institute, which represents all U.S. investor-owned electric companies. The NEHC is a combination of two national corridor coalitions that came together with the promise of committing to supporting a foundational EV fast charging network along major travel corridors across the country. The NEHC put together comments in response to this RFI. SDG&E supports the NEHC's emphasis on early engagement with electric utilities, specifically on grid planning and to leverage existing programs and expertise. SDG&E also supports NEHC's call for states to complement and leverage funding and to prioritize equity.

SDG&E is happy to elaborate further on these responses and/or to answer any follow-up questions.

Sincerely,

Rhiannon Davis
Clean Transportation Policy Manager

The statutory considerations for the EV Charging Program are:

1. The distance between publicly available EV charging infrastructure;

SDG&E recommends that the siting of publicly available charging infrastructure be based not only on distance from other chargers but on customer need and potential impact/reach based on specific criteria and supporting data. For example, population and population density, public transit availability, traffic volumes at entry and exit points along designated corridors; local traffic patterns/where residents, work, shop, and socialize; and popular routes to regional destinations and/or between major population or economic centers. The placement of EV chargers should be dictated in large part by how EV drivers and future EV drivers travel, making this an exceedingly local/regional planning issue.

To encourage thoughtful EV infrastructure buildout, the EV Charging Program could give added weight to projects developed in line with broader local or regional transportation development plans and with collaboration among stakeholders including the local utility, electric vehicle service providers (“EVSP”), local business and fleet owners, and other stakeholders as applicable.

Additionally, placement of EV charging infrastructure may not only depend on the distance to the next closest EV charger or set of chargers, but also the number and types of chargers available nearby – CHAdeMO or CCS vs. Tesla chargers, L2 charging stations vs. direct-current fast chargers (“DCFCs”). Population density may also dictate how many chargers and at what distance charging infrastructure may need to be installed, underscoring the need to consider EV infrastructure needs and placement within the larger context of regional transportation and mobility planning, and even urban development planning.

In SDG&E’s service territory, regional and local government agencies are incorporating EV adoption and EV charging into their goals and planning. In December 2021, the San Diego Association of Governments (“SANDAG”) regional planning agency finalized its 2021 Regional Plan,³ which includes the adoption of EVs as a key component of the Plan’s “5 Big Moves” and as a means of achieving GHG emissions reductions. Additionally, the City of San Diego in its most recent draft Climate Action Plan⁴ acknowledges the role the City must play in passing policies that support transportation electrification. This includes charging station permitting, leveraging public property to expand access to public charging, and municipal code updates to support installation of EV chargers.

Given local and regional objectives, SDG&E has partnered with SANDAG, the City of San Diego, and other stakeholders to establish the Accelerate to Zero Emissions (“A2Z”) Collaboration with the goal advancing transportation electrification through regional

³ San Diego Association of Governments, *2021 Regional Plan*, adopted December 10, 2021. <https://sdforward.com/mobility-planning/2021-regional-plan>

⁴ City of San Diego, *Our Climate, Our Future: Climate Action Plan* (draft), Department of Sustainability, November 2021. https://www.sandiego.gov/sites/default/files/climate_action_plan_draft.pdf

partnerships. The A2Z Collaboration conducted a comprehensive *Regional Electric Vehicle Gap Analysis*⁵ for the San Diego region, and as a next step it plans to develop a comprehensive regional strategy that will consider, among other things, how relevant data might be used to develop a methodology for determining ideal charger placement.

Local and regional governments and planning agencies have already begun to plan for EV charging as a part of their holistic goal setting to achieve multiple ends: reducing GHG emissions, relieving traffic congestion, improving safety, and creating more equity. This kind of planning, if done correctly, includes large amounts of data and forecasting, as well as balancing multiple priorities to develop solutions that provide the greatest impact for the most people. As such, the EV Charging Program would do well to encourage and even reward projects that are informed by existing plans, where possible, and that engage stakeholders to optimize EV infrastructure placement. To the extent that EV Charging Program funds can support education and/or training on EV infrastructure for local and regional planners, this should be encouraged as well.

2. Connections to the electric grid, including electric distribution upgrades; vehicle-to-grid integration, including smart charge management or other protocols that can minimize impacts to the grid; alignment with electric distribution interconnection processes, and plans for the use of renewable energy sources to power charging and energy storage;

SDG&E's grid stands ready to facilitate decarbonization and electrification. The build out of EV charging infrastructure can enhance grid utilization and flexibility. System upgrades and expansion, price signals, and utilization of smart technologies will support the proliferation of light, medium, and heavy-duty EVs. From the utility perspective, the following are some of the key ways California has approached these opportunities:

Service Connection. Pursuant to California Assembly Bill ("AB") 841 (*Ting, Chapter 372, Statutes of 2020*), in 2021 the California Public Utilities Commission ("CPUC") approved new electric rules governing the construction of service connections to serve separately-metered EV load outside of single-family homes. The California IOUs expect to open these EV Infrastructure Rules to customer enrollment in April 2022. The EV Infrastructure Rules are new optional pathways for receiving new electric service that allow the utilities to not only provide the electrical distribution equipment to serve new EV customers – as is the case with general new service rules – but also fully install, own, and maintain all electrical equipment and associated construction upstream of the customer electric meter. These costs are treated as utility base business and recovered through utility General Rate Cases, the basic mechanism through which utilities recover their cost of doing business.

⁵ Black & Veatch Management Consulting for the Accelerate to Zero Emissions Collaboration, *San Diego Regional Electric Vehicle Gap Analysis*, July 2021. <https://www.sdge.com/sites/default/files/2021-07/FINAL%20San%20Diego%20Regional%20EV%20Gap%20Analysis%20%281%29.pdf>

This in effect socializes a significantly greater portion of the cost of an EV charging site compared to general new service rules and is expected to be an important “multiplier” of state and federal funding for EV charging in California. For example, the front-of-the-meter “make-ready” consisting of electrical equipment and associated construction upstream of the customer meter may be approximately 25 percent of the cost of a commercial EV charging site. Because these make-ready costs are borne by utility ratepayers, \$1.00 invested in EV charging on the customer side of the meter in the service territory of California IOUs will result in a greater actual investment, disregarding further utility investment in the general distribution system.

Electric Distribution Upgrades. SDG&E has accommodated numerous EVs to-date and continues to innovate processes, technology and infrastructure upgrades to support growing EV charging load. Because the timelines for identifying and constructing most new distribution infrastructure tend to be relatively short (one to five years), SDG&E expects to be very capable of meeting future electric charging needs, from a process perspective. SDG&E is also advocating for and preparing to utilize longer-term load forecasts that appropriately reflect public policy goals in identifying longer lead-time transmission infrastructure needs. Because the processes for identifying and approving long-lead time infrastructure are dependent on forecast loads, the impacts of electrification – including vehicle charging load – are essential for long-term grid preparedness. Further, there may be opportunities for agencies and local governments to streamline permitting and to expedite key projects approvals to support EV charger readiness.

Finally, SDG&E recognizes the importance of community and stakeholder relationships and partnership, and the value of communicating with customers about current and future charging needs to effect successful system planning. SDG&E has established relationships with local governments, Tribal communities, and key community-based organizations, and it works closely with these entities to provide information and respond to requests that are related to grid electrification.

Rates. EV rates should provide efficient price signals to help shape the charging demand curve by incentivizing customers to charge at times in the day when renewable energy is abundant and/or when the cost of producing energy is relatively low. SDG&E offers several EV time-of-use rates for both residential and commercial/industrial customers to provide options and incentives for charging at different times of the day. “Off-peak” rates typically occur overnight and allow EV customers to charge their vehicles at less than the equivalent cost of gas. Export rates for V2G can also incentivize customers to provide power back to the grid when it would provide a grid benefit.

Vehicle-To-Grid Integration/Smart Charging. SDG&E believes that there is significant opportunity in flexible loads and vehicle-to-grid integration. In December 2021, SDG&E submitted an application to the CPUC for a new Vehicle-to-Grid Export (“V2G-Export”) rate that it believes is the first utility proposal in the country for an export compensation rate specific to V2G energy exports. The rate is applicable to separately-metered EV customers, excluding single-family homes, who take bundled service from SDG&E. If approved by the CPUC, the

V2G-Export rate may grow the V2G market by providing revenue for energy export from EVs and support grid reliability during peak events.

In 2021, SDG&E initiated a five-year, V2G pilot in partnership with the Cajon Valley Union School District in East San Diego County.⁶ The project connects electric school buses to bi-directional, DCFCs, allowing these vehicles to absorb clean energy during the day and return power to the grid in the evening when solar energy starts to taper off.

Plans for the use of Renewable Energy to charge EV and batteries. California has set the goals of a 60 percent Renewables Portfolio Standard by 2030 and 100 percent renewable and zero-carbon electricity by 2045 through SB 100 (*De Leon, Chapter 312, Statutes of 2018*). EVs charged directly from the grid in California will draw on a power supply that is increasingly renewable/zero carbon. Because of the proliferation of Direct Access and Community Choice Aggregation in California, the role of the state's IOUs in procuring renewables to supply customer demand is diminished.

Distributed energy resources ("DER") have a role to play in ensuring a safe, reliable, affordable, and sustainable grid. SDG&E supports DER integration where the distributed resource provides a needed grid benefit safely, reliably, and cost-effectively. Customers may choose to add DERs because they can help lower customer costs by reducing consumption of grid power. DERs can also provide added resiliency for charging at times when grid power is unavailable – e.g., in California, Public Safety Power Shutoffs are a tool of last resort that utilities may utilize to mitigate the risk of wildfire when conditions dictate. On the customer side of the meter, this is an individual decision, and customers make such determinations based on their needs, goals, and available resources.

3. The proximity of existing off-highway travel centers, fuel retailers, and small businesses to EV charging infrastructure acquired or funded under the Program;

As stated under Question 1, multiple data points and considerations should go into determining the best placement for incremental EV charging infrastructure. These considerations should be purposefully local and not dictated by blanket, nationwide policy. Further, State and regional planning can help develop corridors and equity investments, but charger siting is fundamentally driven by customer demand, including demand from business customers wanting to host charging sites.

⁶ San Diego Gas & Electric - News Center, *Vehicle-to-Grid Pilot: Leveraging Big Batteries on Electric School Buses to Support the Grid*, April 21, 2021. <https://www.sdgenews.com/article/vehicle-grid-pilot-leveraging-big-batteries-electric-school-buses-support-grid>

4. The need for publicly available EV charging infrastructure in rural corridors and underserved or disadvantaged communities;

In California, at State and local levels, there has been both evidence and clear policy direction regarding the need to focus EV infrastructure development efforts in low-income/disadvantaged/underserved communities.

Executive Order N-79-20, which directed that all passenger car and truck sales in California be zero emission by 2035, sets the priority for GHG reductions in low-income and disadvantaged communities. Governor Gavin Newsom's proposed 2022 budget also reflects this priority through a multi-billion-dollar ZEV funding package that plans to focus on expanding access to low-income, disadvantaged, and Tribal communities. AB 841 requires that at least 35 percent of transportation electrification investments made by large IOUs be in underserved communities. All of SDG&E's transportation electrification programs include minimum equity investment requirements, including a requirement that 50 percent of sites in SDG&E's PYD Extension Program be in underserved communities.

The *Assembly Bill 2127 Electric Vehicle Charging Assessment*⁷ conducted by the California Energy Commission ("CEC"), as required by AB 2127 (*Ting, Chapter 365, Statutes of 2018*), highlighted the need to ensure access to ZEVs and ZEV infrastructure for all, in particular low-income and disadvantaged communities/communities of concern. Additionally, the *California Electric Vehicle Infrastructure Deployment Assessment*,⁸ mandated by SB 1000 (*Lara, Chapter 368, Statutes of 2018*) made a number of findings that point to a need for public charging in low-income communities. The CEC, working with the California Air Resources Board ("CARB") found that low-income communities have the fewest public L2 chargers and fewest total chargers per capita, while high-income communities have the most public L2 chargers and middle-income communities have the most DCFCs per capita. The Assessment also sites a University of California, Los Angeles study that indicates federal, state, and local clean energy incentives benefit high-income communities disproportionately.⁹

At the local level, the City of San Diego's draft Climate Action Plan¹⁰ proposes a commitment to remove barriers to EV ownership and charging access in communities of concern. Additionally, gap analysis modeling conducted by the previously mentioned A2Z Collaboration found limited public ZEV fueling opportunities in communities of concern in the San Diego region.

⁷ California Energy Commission, *Assembly Bill 2127 Electric Vehicle Charging Assessment*, July 2021.

<https://efiling.energy.ca.gov/getdocument.aspx?tn=238853>

⁸ California Energy Commission, *SB 1000 Electric Vehicle Charging Infrastructure Deployment Assessment*, Docket Number: 20-TRAN-02, Submitted December 30, 2020. <https://efiling.energy.ca.gov/getdocument.aspx?tn=236189>

⁹ Fournier, Eric Daniel; Robert Cudd; Felicia Federico; Stephanie Pincetl. *On energy sufficiency and the need for new policies to combat growing inequities in the residential energy sector*, University of California Press, June 11, 2020.

<https://online.ucpress.edu/elementa/article/doi/10.1525/elementa.419/112771/On-energy-sufficiency-and-the-need-for-new>

¹⁰ City of San Diego, *Our Climate, Our Future: Climate Action Plan* (draft), Department of Sustainability, November 2021.

https://www.sandiego.gov/sites/default/files/climate_action_plan_draft.pdf

6. Existing private, national, State, local, Tribal, and territorial government EV charging infrastructure programs and incentives;

CALIFORNIA

The transportation sector is responsible for more GHG and air polluting emissions than any other sector in California. According to State agencies, it accounts for roughly half of the state's GHG emissions, 80 percent of smog-forming nitrogen oxide pollution, and 95 percent of toxic diesel particulate emissions. Currently, there are nearly one million EVs on California roads.¹¹

ZEV Funding Commitments. In 2021, the California State Legislature approved in its annual budget a three-year ZEV funding package totaling \$3.9 billion, and on January 10, 2022, Governor Newsom released his 2022 State budget proposal – the “California Blueprint”, which includes an additional \$6.1 billion over five years (including IIJA funds) to fund ZEV adoption and infrastructure deployment for a total of \$10 billion in ZEV funding over six years.¹² These funds will be focused on bringing clean transportation benefits to communities that are most impacted: low-income and disadvantaged communities, including Tribal communities. The proposed budget would also double funding to accelerate the heavy-duty vehicle market.

These commitments will bolster California's efforts to build out ZEV infrastructure to support an ever-increasing number of electric and zero-emission vehicles on California roads; however, despite stakeholders' efforts to date to install the largest EV charging network in the country, according to the CEC's AB 2127 report, the state is behind in installing the infrastructure needed to support widespread transportation electrification tomorrow. Adequate state and federal funding to support EV infrastructure expansion is a primary requirement, which is where IIJA investments can provide a significant boost.

Policy & Commitments. California's former governor issued several Executive Orders and enacted policy to put the state on the path to a carbon neutral, ZEV future. In March 2012, then-Governor Brown issued **Executive Order B-16-12** directing major metropolitan areas to be ZEV ready by 2015, mandating that statewide infrastructure be able to support one million ZEVs on the road by 2020, and targeting 1.5 million ZEVs on the road by 2025.¹³ In January 2018, he issued **Executive Order B-48-18** directing state agencies to work with local governments and the private sector to install 250,000 EV chargers, including 10,000 DCFCs by 2025, and to put at least 5 million ZEVs on California roads by 2030.¹⁴

¹¹ California Public Utilities Commission, Presentation by CPUC Energy Division Staff: *Transportation Electrification in California Investor-Owned Utility Territory: Goals, Progress, and Gaps*, CPUC En Banc on Transportation Electrification in California Investor-Owned Utility Territory, October 13, 2021. <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/transportation-electrification/cpuc-te-en-banc-october-2021-slides.pdf>

¹² Department of Finance, California Budget 2022-23, Governor's Proposed Budget (January 10, 2022) Summary – Climate Change, p. 82. <https://www.ebudget.ca.gov/2022-23/pdf/BudgetSummary/ClimateChange.pdf>

¹³ Office Governor Edmund G. Brown Jr., *Governor Brown Announces \$120 Million Settlement to Fund Electric Car Charging Stations Across California*, Published March 23, 2012. <https://www.ca.gov/archive/gov39/2012/03/23/news17463/index.html>

¹⁴ Office Governor Edmund G. Brown Jr., *Governor Brown Takes Action to Increase Zero-Emission Vehicles, Fund New Climate Investments*, Published January 26, 2018. <https://www.ca.gov/archive/gov39/2018/01/26/governor-brown-takes-action-to-increase-zero-emission-vehicles-fund-new-climate-investments/index.html>

In September 2020, Governor Newsom, issued **Executive Order N-79-20** requiring sales of all new passenger vehicles to be zero-emission by 2035. It also requires medium-duty and heavy-duty (“MD/HD”) vehicles to be 100 percent zero emission by 2045 where feasible, with drayage trucks required to meet the 100 percent ZEV goal by 2035.¹⁵

California continues to learn lessons as it evaluates and re-evaluates the status of EVs and EV charging statewide, including through statewide assessments.

The *Assembly Bill 2127 Electric Vehicle Charging Assessment*¹⁶ requires the CEC to prepare a statewide assessment of charging infrastructure needed to support 5 million ZEVs on the road and to reduce GHG emissions to 40 percent below 1990 levels by 2030. Executive Order N-79-20 directed the CEC to update the assessment to support EV adoption as required by the executive order, which CARB estimates to be 8 million light-duty ZEVs and 180,000 MD/HD ZEVs by 2030. The Assessment modeling suggests that for passenger vehicles, nearly 1.2 million chargers will be needed to support the 8 million ZEVs, and 157,000 chargers will be needed to support 180,000 MD/HD ZEVs.

The high-level findings of the report include that to meet the 2025 goal of 250,000 public and shared chargers, the state will need about 57,000 more than those already installed (70,000) + those planned (123,000). To reach these goals, public funding for charging infrastructure will be crucial. As an example of this need, the Assessment highlights that incentives for the purchase and installation of public chargers made available through the CEC’s California Electric Vehicle Infrastructure Project (CALeVIP) were vastly underfunded as compared to the number of applicants requesting funds; of the more than \$300 million in rebate requests, roughly one-third could be fulfilled with available funds. The Assessment also encourages greater vehicle-grid integration ideally to find potential cost savings for customers, align charging with available renewable power, and ease potential strains on the grid given that more than 60 percent of total charging is likely to occur when solar is not abundant/during off-peak hours when there is potential for demand surges. The Assessment also recommends prioritizing standardization of charging connectors and creating a common digital language across chargers and vehicles to ensure a better user experience.

In the *California Electric Vehicle Infrastructure Deployment Assessment*,¹⁷ the CEC and CARB highlighted several findings that point to a likely need for public charging in low-income and densely populated areas:

¹⁵ Office of Governor Gavin Newsom, *Governor Newsom Announces California Will Phase Out Gasoline-Powered Cars & Drastically Reduce Demand for Fossil Fuel in California’s Fight Against Climate Change*, published September 23, 2020. <https://www.gov.ca.gov/2020/09/23/governor-newsom-announces-california-will-phase-out-gasoline-powered-cars-drastically-reduce-demand-for-fossil-fuel-in-californias-fight-against-climate-change/>

¹⁶ California Energy Commission, *Assembly Bill 2127 Electric Vehicle Charging Assessment*, July 2021. <https://efiling.energy.ca.gov/getdocument.aspx?tn=238853>

¹⁷ California Energy Commission, *SB 1000 Electric Vehicle Charging Infrastructure Deployment Assessment*, Docket Number: 20-TRAN-02, Submitted December 30, 2020. <https://efiling.energy.ca.gov/getdocument.aspx?tn=236189>

- Geographically, EV charging is located in California counties with high population density and high concentration of EVs;
- However, there are fewer public chargers in high population density census tracts (largely residential) versus lower density census tracts (more commercial/industrial), which may be a function of land use; and
- Low-income communities have the fewest public L2 chargers and fewest total chargers per capita, while high-income communities have the most public L2 chargers but the fewest DCFCs (middle-income communities have the most DCFCs per capita).

California is also enacting policies and developing regulations that will drive ZEV adoption, particularly among MD/HD vehicles and fleets.

California's Advanced Clean Trucks ("ACT") rule and draft Advanced Clean Fleets ("ACF") rule will bring about the need for substantial expansion of EV charging for MD/HD vehicles in the coming years. The ACT rule requires of manufacturers that sales of zero-emission Class 2b-8 MD/HD vehicles make up an increasing percentage of their annual sales in California from 2024 to 2035.¹⁸ The ACF rule aims to build on ACT to achieve the Executive Order N-79-20 goal of a zero-emission truck and bus fleet by 2045 everywhere feasible and sooner for last mile delivery, off-road and drayage applications. The draft ACF rule, which should be finalized in late 2022, also proposes a requirement that all truck sales be zero emission by 2040.¹⁹

Under the Clean Mile Standard and Incentive Program, established by SB 1014 (*Skinner, Chapter 369, Statutes of 2018*), CARB and the CPUC are tasked with setting and implementing electrification and GHG reduction targets for transportation network companies (TNCs) operating in California (e.g., Lyft and Uber). CARB has determined a GHG baseline for TNCs and set GHG reduction targets to begin in 2023, with the goals of reducing vehicle miles traveled ("VMT") for TNCs, increasing passenger miles traveled through zero-emission means, minimizing impacts on low- and moderate-income communities, and encouraging collaboration among TNCs, fleet owners, utilities, and EVSPs. Specifically, TNCs must achieve zero GHG emissions and ensure that 90 percent of their VMTs are electric vehicle miles traveled ("eVMT") by 2030.²⁰

Finally, the Innovative Clean Transit Regulation²¹ requires all public transit agencies to gradually transition to 100 percent zero-emission bus fleets by 2040 and meet the interim goal of having new bus purchases by transit agencies be 100 percent zero-emission by 2029.

¹⁸ California Air Resources Board, *Advanced Clean Trucks Fact Sheet*, August 20, 2021. <https://ww2.arb.ca.gov/resources/fact-sheets/advanced-clean-trucks-fact-sheet>

¹⁹ California Air Resources Board, *Advanced Clean Fleets Fact Sheet*, August 17, 2021. <https://ww2.arb.ca.gov/resources/fact-sheets/advanced-clean-fleets-fact-sheet>

²⁰ California Air Resources Board, *Clean Miles Standard Regulation: Passengers and Communities to Benefit from Lower Emissions with Actions by Transportation Network Companies*, August 31, 2021. <https://ww2.arb.ca.gov/resources/fact-sheets/clean-miles-standard-regulation-passengers-and-communities-benefit-lower>

²¹ California Air Resources Board, *Innovative Clean Transit (ICT) Regulation Fact Sheet*, May 16, 2019. <https://ww2.arb.ca.gov/resources/fact-sheets/innovative-clean-transit-ict-regulation-fact-sheet>

CA ZEV Incentives. Through CARB and the CEC, there are several incentive mechanisms available for ZEVs and ZEV infrastructure, including competitive solicitations; block grants; first-come, first-serve opportunities; and federal cost sharing. Between these two agencies, which have primary responsibility for state funding of the ZEV transition, the CEC focuses on infrastructure while CARB targets vehicles and manufacturing. Each agency approved substantial ZEV investment plans in late 2021: CARB’s \$1.5 billion investment plan for FY2021-22, and the CEC’s \$1.4 billion investment plan for FY2021 through FY2023 (three years). The CEC’s largest infrastructure incentive program is CALeVIP, which provides incentives for light-duty EV charging infrastructure. Through 2021, the CEC has allocated \$186 million in CALeVIP rebates.²² The CEC has also conducted solicitations for MD/HD project grants.

CARB also provides incentives for light-duty ZEVs through the Clean Vehicle Rebate Project (“CVRP”) and for MD/HD ZEVs through the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (“HVIP”). For FY2021, CVRP and HVIP will be allocated \$525 million and ~\$570 million, respectively.²³ The CARB investment plan also allocates \$150 million to equity investments.²⁴ Additionally, the Low Carbon Fuel Standard (“LCFS”) program, also administered by CARB, provides financial support to low-carbon fuel producers, distributors, and blenders through credits. Updates to the program provide credits for DCFC equipment based on the power rating of the equipment and allows eligible hydrogen fueling station operators to earn Hydrogen Refueling Infrastructure credits based on the capacity of the hydrogen station for a limited period.

SAN DIEGO REGION

Regional Planning. Transportation is also the largest source of GHG emissions (roughly 50 percent of the total) and air pollution in the San Diego region. In December 2021, regional planning agency SANDAG finalized its 2021 Regional Plan²⁵, which includes the adoption of EVs as a key component of its GHG emissions reductions efforts. The total Plan budget is \$172 billion over 30 years, including \$31 billion in federal funding (18 percent) from the Federal Transit Administration discretionary funds, FHWA funds and funds from other sources. SANDAG makes clear that new sources of funding will be needed to fully implement the 2021 Regional Plan. The Plan’s investment strategy includes investments in EV charging infrastructure across its “5 Big Moves”, including Complete Corridors (a safe, well-managed transportation backbone for the region), Mobility Hubs (communities with high concentrations of people, destinations, and travel choices) and support for Flexible Fleets (shared, on-demand vehicles). The Plan also envisions direct investments in communities, including Flexible Fleet pilots, Mobility Hub amenities and EV charging.

²² California Energy Commission, *2021-2022 Investment Plan Update for the Clean Transportation Program*, December 2021, p. 45. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=240977>

²³ California Air Resources Board, *Proposed Fiscal Year 2021-22 Funding Plan for Clean Transportation Incentives*, approved November 19, 2021, p. 6. https://ww2.arb.ca.gov/sites/default/files/2021-10/fy21-22_fundingplan.pdf

²⁴ Ibid.

²⁵ San Diego Association of Governments, *2021 Regional Plan*, adopted December 10, 2021. <https://sdforward.com/mobility-planning/2021-regional-plan>

San Diego's regional transportation system must also support the needs of Tribal communities. Using Partnership Planning Grants funding from the California Department of Transportation ("Caltrans"), SANDAG and the Southern California Tribal Chairmen's Association ("SCTCA") worked together to develop an Intraregional Tribal Transportation Strategy. SANDAG and SCTCA signed a Memorandum of Understanding in July 2020, and the resources provided through the agreement will allow SCTCA to advance the Strategy, build capacity and pursue transportation projects of interest to Tribal nations.

SANDAG will also continue to collaborate with regional stakeholders and Mexican agencies on regional planning to support people and goods movement across the border and in the California – Baja California megaregion.

SANDAG has also committed \$1 million annually to 2050 for its Regional Electric Vehicle Charging Program ("EVCP"). In the first three years, SANDAG will partner with the San Diego County Air Pollution Control District ("APCD"), the Center for Sustainable Energy and the CEC to launch the program through CALeVIP. This project began providing first-come, first-served rebates for EV charger purchase and installation in San Diego in late 2020 and will provide \$21.7 million in incentives over the three years.²⁶

City Of San Diego. In its most recent draft Climate Action Plan²⁷, released in November 2021, the City of San Diego proposes to establish a community wide goal of net-zero GHG emissions by 2035. The draft plan acknowledges the role the City must play in setting policies that support EV adoption, such as relevant building codes and land use allowances. Specific goals proposed by the City include, by 2035, achieving a 100 percent ZEV light-duty municipal fleet, a MD/HD municipal fleet that is 75 percent ZEV, and 25 percent eVMT of total VMT.

The Plan proposes to develop a city-wide EV strategy to accelerate EV adoption, including for public fleets, and to remove barriers to EV ownership and charging access in communities of concern. The City is also considering setting a goal for installation of public charging stations on city property. Additionally, San Diego would continue to work on converting school and transit bus fleets to zero-emission and planning for MD/HD charging infrastructure. Local authorities involved in this work would include SANDAG, the APCD, San Diego Unified School District, San Diego Metro Transit System, the U.S. Navy and the Port of San Diego, among other stakeholders.

A2Z Collaboration. Last year, SDG&E joined forces with the City and County of San Diego, SANDAG and the APCD, among other regional stakeholders, to create the Accelerate to Zero Emissions ("A2Z") Collaboration. The group is committed to a clean transportation future and

²⁶ San Diego Association of Governments, *SANDAG Electric Vehicle Charger Rebates: CALeVIP San Diego County Incentive Project*, <https://www.sandag.org/index.asp?classid=17&subclassid=46&projectid=603&fuseaction=projects.detail#:~:text=Through%20a%20%24600%2C000%20planning%20grant%20from%20Caltrans%20initiated.to%20charging%20infrastructure%20for%20San%20Diego%20County%20residents.>

²⁷ City of San Diego, *Our Climate, Our Future: Climate Action Plan* (draft), Department of Sustainability, November 2021. https://www.sandiego.gov/sites/default/files/climate_action_plan_draft.pdf

invested in regional partnerships to advance transportation electrification. The A2Z Collaboration brought in Black & Veatch Management Consulting to conduct a *Regional Electric Vehicle Gap Analysis*²⁸ for the San Diego region. The study found that the region had nearly 70,000 ZEVs in 2020 supported by about 6,500 L2 chargers and 250 DCFCs (plus one hydrogen fueling station). The analysis found that the San Diego region could meet its share of the state's 2030 ZEV goals – 771,000 ZEVs, 139,000 L2 chargers, 16,200 DCFCs and 47 hydrogen fueling stations – with adequate planning and robust implementation.

The gap analysis found that vehicle supply would not likely be a problem but emphasized the need to ensure all residents have an opportunity to buy ZEVs, particularly low- and moderate-income residents. Black & Veatch modeling also found limited public ZEV fueling opportunities in communities of concern. Further, the analysis found that the San Diego region will have to fill significant gaps in ZEV infrastructure in the next few years. Through analysis and interviews with stakeholders in the regional EV ecosystem, the gap analysis identified several barriers to ZEV infrastructure deployment in the San Diego region: access and availability; limited policies/mandates comparable to those for vehicle adoption; a lack of streamlined permitting; availability of suitable land/space for installation; and general uncertainty about the technology.

Additionally, local governments require granular data to support infrastructure planning, which can become a barrier to planning and charger deployment. Planners and other local government staff were identified as potential beneficiaries of education around ZEV infrastructure issues. Training was also identified as a need to ensure a qualified workforce of ZEV infrastructure installers to meet future charging needs. SANDAG facilitates Electric Vehicle Infrastructure Training Program (“EVITP”) sessions in the San Diego region, and SDG&E requires EVITP-certified installers for all charging infrastructure programs.

Also in the gap analysis, insufficient ZEV fueling at public workplace and multifamily locations was highlighted in a stakeholder survey as one of the reasons why 50 percent of survey participants believe the San Diego region is not on track to meet 2030 ZEV goals. Thirty-six (36) percent of survey respondents said that “infrastructure planning for EVs” or “increasing public and/or private EV charging and hydrogen fueling stations” would have the most impact toward meeting 2030 light-duty vehicle goals.

Additional gap analysis findings highlighted a need for funding for local government pilot programs to demonstrate the case for/benefits of ZEVs for local businesses, state/federal administrative support for agencies that may want to mandate ZEV fueling infrastructure at new commercial and multifamily buildings, and an update and expansion of SANDAG's existing ZEV infrastructure mapping tool to show specific gaps and where to locate new chargers.

²⁸ Black & Veatch Management Consulting for the Accelerate to Zero Emissions Collaboration, *San Diego Regional Electric Vehicle Gap Analysis*, July 2021. <https://www.sdge.com/sites/default/files/2021-07/FINAL%20San%20Diego%20Regional%20EV%20Gap%20Analysis%20%281%29.pdf>

To address the findings in the Regional Gap Analysis, the A2Z Collaboration has begun developing a comprehensive regional strategy to help position the San Diego region as a national leader on EVs. The strategy will establish goals and metrics for 2025 and 2030, and it will provide regional role recommendations and responsibilities to achieve greater EV adoption and infrastructure buildout. The regional strategy is expected to be completed in early 2023.

7. Fostering enhanced, coordinated, public-private or private investment in EV charging infrastructure;

Collaboration on policy, planning and funding is critical if we are to meet collectively the challenge of electrifying and decarbonizing the transportation sector on the scale that is required to have a meaningful impact on climate change. Coordination and partnership are needed at local, state and federal levels and among utilities, EVSPs, fleets, governments, community-based organizations and businesses.

Investment is needed from all corners – public, private, public-private – to build the infrastructure needed to support transportation electrification across the United States. California has allocated billions of budget dollars to support its ZEV goals, and IOUs in the state are authorized to spend \$1 billion through 2023 on transportation electrification infrastructure and have another \$800 million in transportation electrification applications pending at the CPUC. But, to meet its ZEV goals, the state still needs additional investments in EV infrastructure on a massive scale. The IIJA has allocated historic funding to build a national network of 500,000 EV chargers along corridors and in communities, and it still may not be enough.

Stakeholders will need to leverage state and local funds, federal funds, and private funds to effectuate the EV infrastructure buildout envisioned and driven by state and federal policy. In California, the IOUs are well positioned to help maximize the use of state and federal funds for EV infrastructure development because of the tariff rules and processes already in place to respond to customer demand for charging.

9. Any other factors, as determined by the Secretary.

A unique feature of SDG&E's service territory is that it includes the United States-Mexico border region. SDG&E serves customers within the greater San Diego-Baja California area, which has four land ports of entry into the United States that represent the busiest border crossings in the Western Hemisphere.²⁹ The binational sub-region, stretching from San Ysidro to Tecate, is home to millions of residents, businesses, and a growing and interconnected economy. In 2019, \$43.8 billion worth of goods crossed between Mexico and the United States at the existing Otay Mesa and Tecate ports of entry.³⁰ The economic and social wellbeing of

²⁹ TransNet (administered by San Diego Association of Governments), SR 11/Otay Mesa Port of Entry Brochure, December 2021. https://www.keepsandiegomoving.com/Libraries/SR_11/SR11_Port_of_Entry_Brochure_ENG_WEB_121521.sflb.ashx

³⁰ Ibid.

constituencies in both San Diego and Baja California are inextricably tied because of this distinctive binational partnership.

In the coming years, SDG&E intends to work collaboratively with regional stakeholders and partners to address an equitable transition to ZEVs and emissions that impact border communities and the Tijuana-San Diego shared airshed. To the extent that it is within the scope of this program or other existing or future programs, the U.S. Department of Transportation should conduct additional research related to cross-border people and goods movement and the impact on emissions and major freight/clean transportation corridors. This includes investigating mechanisms that could help drive the adoption of MD/HD ZEVs for transport in border commercial zones and for long-haul transport from an internationally domiciled home location.



FHWA also requests comments to inform the implementation of the Charging and Fueling Infrastructure Program to provide discretionary grants for corridor and community charging. Specifically:

10. Please provide examples of best practices relating to project development of EV charging infrastructure and hydrogen, propane, and natural gas fueling infrastructure at the State, Tribal, and local levels.

In SDG&E's experience building significant EV infrastructure, three areas of focus contribute to the successful deployment of EV charging infrastructure: Engaging with utilities early and planning for a longer timeline; Customer Education and Outreach; and Construction and Operations. These focus area help grant recipients more seamlessly integrate with SDG&E infrastructure and rebate programs.

Engaging with the utility as early in the planning process as possible will help minimize the time to successfully deploy an EV project. There are many steps to implementing an EV project successfully, including understanding charging needs, site feasibility, engineering and design, permitting, construction, and ongoing maintenance. Upgrades to the grid may also be required to support significant electric load and could take several months to multiple years to plan and build.

SDG&E understands that customer education and outreach is a key component of successful EV infrastructure deployment. It provides information to its customers on different aspects of electrification and assists with knowledge sharing on various grant programs where available. SDG&E works with customers early in the process to ensure that a customer (i) has the tools and knowledge to determine whether to electrify and pursue infrastructure, and (ii) meets utility requirements such as easements and property ownership buy-in. SDG&E's service territory includes a large community of small businesses, and its customer outreach teams work with this group of customers, among others, to navigate these complex challenges. For customers

wanting to install EV infrastructure, having a cross-functional team established with decision-making authority helps with a smoother execution.

Careful selection of experienced construction contractors, electric vehicle service equipment (“EVSE”) vendors, and ongoing maintenance providers is key for successful deployment. SDG&E works with several contractors and its internal crews for installations of EV charging infrastructure. The utility has established an “Approved Product List” of EVSE that meet or exceed safety and technical standards required for inclusion to SDG&E’s programs. And as previously mentioned, SDG&E requires EVITP-certified installers for all charging infrastructure programs. After commissioning, SDG&E requires program participants to maintain infrastructure for a specific duration and may provide rebate funding for ongoing operation of the chargers.