

**Testimony of Laurie M. Giammona
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Chairman DeFazio, Ranking Member Graves, and members of the Committee, thank you for inviting me to testify today. My name is Laurie Giammona, and I am the Senior Vice President for Customer Care at Pacific Gas and Electric Company (PG&E). PG&E is California’s largest energy provider, with more than 23,000 employees providing gas and electric service to an area that is home to 16 million people.

PG&E’s Climate Vision

PG&E’s commitment to mitigating and adapting to climate change, in a way that leaves no one behind, is as strong as ever, and it is what our customers expect and deserve. California’s climate and clean energy goals are some of the most ambitious in the nation, with a goal to reach economy-wide carbon neutrality in the state by 2045. Clean electricity plays a foundational role in decarbonizing our economy, which is consistent with science-based reduction targets to avoid the worst effects of climate change. As such, PG&E’s mission and vision are aligned with California’s commitment to climate policy leadership, and we remain a committed partner in implementing the state’s climate policies.

In California, the electricity sector accounts for just 15 percent of greenhouse gas (GHG) emissions and state legislation requires us to have 100 percent of retail electricity sales from

renewable and zero-carbon resources by 2045.¹ Part of California’s comprehensive program to reduce carbon emissions is its Renewables Portfolio Standard (RPS), one of the most progressive clean energy mandates in the country, requiring 60% of energy delivered to retail customers to be from qualifying renewable resources by 2030. As a result, PG&E has one of the cleanest electricity portfolios in the nation, with 35% of our delivered energy from qualified renewable resources in 2020, and 88% of electricity we deliver is carbon-free.² Given the low emissions profile of electricity in the state, electrification of other sectors, particularly transportation, will be key to decarbonizing California’s economy. PG&E is well positioned to enable this transition.

PG&E customers are also embracing clean energy solutions. We are working closely with our customers to provide options that allow them to have more control over the energy that powers their lives. Of note, PG&E has more than 535,000 interconnected rooftop solar system customers – more than any other utility in the U.S.; we provide incentives to customers adopting battery storage systems; we offer a wide range of programs to help customers reduce their energy use and save money; and we provide some of the nation’s leading programs to encourage electric vehicle (EV) adoption for both residential and commercial customers. Today, approximately one in five EVs in the United States plugs into PG&E’s grid.³

¹ California Air Resources Board, “Current California GHG Emission Inventory Data,” <https://ww2.arb.ca.gov/ghg-inventory-data>.

² Pacific Gas and Electric Company, “PG&E Surpasses California’s 2020 Renewable Energy Goal; Electricity Among Cleanest in Nation” (March 2021), <https://www.pgecurrents.com/2021/03/09/pg-electricity-delivered-to-customers-is-more-than-88-greenhouse-gas-free-and-among-the-cleanest-in-the-nation/>.

³ Pacific Gas and Electric Company, “2020 Annual Corporate Responsibility and Sustainability Report” (August 2020), <https://www.pgecorp.com/corp/responsibility-sustainability/corporate-responsibility-sustainability.page>

At the same time, California is already experiencing the impacts of climate change, and we are doing everything we can to adapt to that reality. Through our Community Wildfire Safety Program, we are bolstering wildfire prevention and emergency response efforts, putting in place new and enhanced safety measures, and doing more over the long term to harden our electric system to help reduce wildfire risks and keep our customers safe.

We're also integrating climate science into key company functions and creating tools to support planning and decision-making that considers the physical risks that extreme weather and climate change pose for our infrastructure. And, because resilience requires a community-wide approach, we're supporting climate resilience efforts at the state and local levels including through PG&E's Better Together Resilient Communities grants program.

For PG&E, corporate sustainability and addressing climate change isn't just a nice-to-have; it's a core part of our business strategy to meet the triple bottom line of people, planet and prosperity of California, underscored by strong operational performance. Our customers and communities rely on PG&E to deliver safe, reliable, affordable and clean energy, and we must meet their needs today in a way that creates a better tomorrow. It's what our customers, investors, regulators, community leaders and employees want and deserve.

Benefits of Transportation Electrification

Electrification of the transportation sector will provide tremendous benefits for our environment, our economy and our energy system. In California, transportation is the largest single contributor of GHG emissions, accounting for 41% of GHG emissions – higher than the national

average of 28% for the sector, while electricity accounts for just 15% of statewide GHG emissions.⁴ Nationally, emissions from the power sector are at their lowest level since 1987,⁵ while transportation is now the leading source of GHG emissions.⁶ As the electricity sector continues to reduce its GHG footprint in California and across the nation, electrifying transportation presents one of the greatest opportunities to address climate change.

Transportation electrification will also improve air quality and public health as EVs do not produce any tailpipe emissions. In California, motorists drive more than a billion miles each day, producing 1,000 tons of smog-forming pollutants.⁷ High levels of air pollution can lead to asthma and other respiratory illnesses that especially affect children and seniors, and those living in communities adjacent to highways, ports and rail yards can suffer disproportionate effects. In California's San Joaquin Valley, for instance, communities suffer from some of the nation's worst air quality, due to the area's topography, local industries and heavy traffic. Communities in the region are promoting clean vehicles to help reduce pollution and improve public health. In fact, a recent study showed that a shift to electric trucks and buses in urban areas could prevent more than 57,000 premature deaths by 2050.⁸

⁴ California Air Resources Board, "Current California GHG Emission Inventory Data," <https://ww2.arb.ca.gov/ghg-inventory-data>.

⁵ U.S. Energy Information Administration, "Carbon dioxide emission from the U.S. power sector have declined 28% since 2005" (October 2018), <https://www.eia.gov/todayinenergy/detail.php?id=37392#:~:text=EIA%20has%20calculated%20that%20CO2,the%20lowest%20level%20since%201987>.

⁶ U.S. Environmental Protection Agency, "Sources of Greenhouse Gas Emissions," <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>.

⁷ California Air Resources Board, "Drive Clean CA.Gov," <https://driveclean.ca.gov/why-drive-clean>.

⁸ Environmental Defense Fund, "Clean Trucks, Clean Air, American Jobs" (March 2021), https://www.edf.org/sites/default/files/2021-03/HD_ZEV_White_Paper.pdf.

The transition to electric vehicles isn't just an environmental priority, it's also a generational and transformational opportunity for the United States to generate new jobs and drive economic output. As our nation seeks to recover from the COVID-19 pandemic and economic downturn, EV manufacturing and charging infrastructure buildout could create thousands of domestic jobs, adding to the more than 266,000 American jobs already supported by the alternative fuel vehicle industry.⁹ For PG&E, installing charging infrastructure and preparing the grid for greater electrification creates new job opportunities for our workers. For instance, PG&E has partnered with IBEW Local 1245, which represents about 12,000 PG&E employees, to build out charging ports, and we look forward to continuing to partner with IBEW 1245 as we seek opportunities to upgrade the grid and expand charging infrastructure.

Overall affordability is also driving greater EV adoption in our service area. Increased variety and number of vehicle models, improved battery capacity and declining costs have made EVs more attractive to consumers. EVs are less expensive to operate than gasoline-powered vehicles, primarily due to fuel cost savings because electricity is less expensive than gasoline on an equivalent cost basis. Customers using one of PG&E's residential EV rate plans pay as low as \$1.60 per gasoline gallon equivalent – nearly 60% less than today's average price of \$3.84 per gallon of gasoline in California.¹⁰ These are fuel prices Californians haven't seen since in decades. For the typical Californian who drives about 14,000 miles a year in a car that averages

⁹ National Association of State Energy Officials and Energy Futures Initiative, "2020 U.S. Energy & Employment Report," <https://www.usenergyjobs.org/>.

¹⁰ AAA, "California Average Gas Prices: March 11, 2021," <https://gasprices.aaa.com/?state=CA>.

35 miles per gallon, this represents a savings of about \$900 annually.¹¹ EV owners also benefit from lower annual maintenance costs, averaging \$330 less per year than gas-powered cars.¹²

EVs will even provide economic benefit to our customers who do not choose to adopt them – namely through more affordable electric rates. As additional demand is added to our grid, the fixed costs of upgrading and maintaining the grid will be spread over more kilowatt hours, which will help lower costs for all customers. This is particularly true when EV users are incentivized to charge during off-peak periods. Even with the modest load that EVs have added to PG&E’s grid to date, we’re seeing benefits for all customers. A recent study by Synapse Energy examined the contribution of EV charging to PG&E revenues from 2012-2018 in comparison to the investments PG&E made in distribution upgrades and PG&E programs. The study found that EVs contributed around \$350 million more than the cost of upgrades and incentives – a number likely to grow as adoption increases in future years.¹³

Greater EV adoption will provide us more flexibility to manage the grid in a way that promotes better resilience and reliability. In our service area, there is an increasing penetration of solar resources available in the morning hours – when demand is lower – and an increase in electricity demand in the afternoon and evening hours when the sun is down. Smart charging and incentives to EV owners to recharge during those peak solar hours will allow us to utilize more renewable energy and shift demand in a way that benefits all grid users. For example, electric

¹¹ Car and Driver, “What is the Average Mileage Per Year,” <https://www.caranddriver.com/research/a32880477/average-mileage-per-year/#:~:text=The%20residents%20of%20both%20states,Florida%3A%2011%2C836%20miles.>

¹² AAA, “Owning an Electric Vehicle is the Cure for Most Consumer Concerns” (January 2020), <https://newsroom.aaa.com/2020/01/aaa-owning-an-electric-vehicle-is-the-cure-for-most-consumer-concerns/>.

¹³ Synapse Energy Economics, Inc, “EV Rate Impacts in California” (June 2019), <https://www.synapse-energy.com/sites/default/files/EV-Impacts-June-2019-18-122.pdf>.

companies can send price signals to encourage customers to charge their EVs at certain times of day. PG&E's electric rates for EV owners send price signals encouraging residential and commercial EV customers to charge their vehicles overnight or during the sunny morning hours. And PG&E has proposed a dynamic electric rate for commercial customers that would encourage customers to charge at the lowest cost times of day by providing a day-ahead, hourly price signal. Beyond rates, PG&E has piloted various incentives to encourage customers to flexibly charge. Notably, we are completing a pilot with Pittsburg Unified School District that tested the ability of school buses to charge during the middle of the day, when there is excess solar generation on the grid.

Supporting Customer Adoption of Electric Vehicles

For all these reasons, PG&E supports California's efforts to build a low-carbon and clean energy future through the adoption of zero-emission vehicles, and we believe the utility sector can play an important role in advancing clean transportation options for our customers.

The role played by electric utilities is only one of many in the broader transportation electrification ecosystem. This ecosystem includes entities such as policy makers, automakers, EV charging companies, battery and component manufacturers, technology providers, and utilities. None of these entities can work in isolation and they all rely upon one another. But primarily, they all rely upon customers to purchase electric vehicles and install charging infrastructure. As part of this ecosystem, PG&E focuses on four areas in which we leverage our core competencies to thoughtfully expand transportation electrification, generate economically beneficial load growth and support hard-to-serve segments: 1) expand access to charging

infrastructure; 2) reduce the total cost of ownership; 3) engage and educate our customers about the benefits of electric vehicles; and 4) optimize use of the electric grid.

On charging infrastructure, PG&E is actively collaborating with automakers, charging equipment providers and state agencies to support the large-scale electric infrastructure needed to incorporate EV charging systems into the energy grid. These investments total more than \$400 million in approved infrastructure investments through 2025 – one of the largest utility-EV investments in the nation – which includes these programs:

- EV Charge Network: \$130 million to install 4,500+ level-2 charging ports to support light-duty vehicle charging at workplaces and multi-unit dwellings;
- EV Fleet: \$236 million to help 700+ organizations including school districts, transit agencies and small businesses electrify their fleet operations by supporting infrastructure for 6,500 medium- and heavy-duty EVs;
- EV Fast Charge: \$22 million to install infrastructure to support public Direct Current Fast Charging (DCFC); and
- EV Schools and Parks: \$12 million in charging infrastructure at schools and state parks.

Charging programs include incentives for and deployment targets in disadvantaged communities, helping to ensure customers can equitably access the benefits of EVs, and PG&E seeks to install up to 2,000 level-1 and level-2 home chargers for low-income customers by 2023. For example, Madera Unified School District, located in a disadvantaged community in California's Central Valley, received support from PG&E's EV Fleet Program in the form of rebates, infrastructure, and technical assistance which enabled them to install 10 EV charging stations, electrify five

electric busses in 2020, and support their plans for additional electric busses in the coming years. School districts across the state have begun to embrace electrification to reduce vehicle emissions that are especially harmful to children and are often more pronounced in disadvantaged communities. In addition, fleet electrification can reduce major expenses such as maintenance and fueling costs, especially for fleets with fixed routes and charging locations. For its EV Charge Network and EV Fast Charge programs, PG&E has received applications that far exceed resources available, demonstrating the strong demand from our customers for EV charging and the continued need for utility support. PG&E is working now on the next generation of programs, including a 10-year strategic plan on electric transportation investments that we will file with the California Public Utilities Commission (CPUC) in 2022.

For our customers, PG&E is also working to reduce the total cost of EV ownership through rebates and specialized electric rates that ensure owning and operating an EV can be cheaper than a gasoline-fueled alternative. In addition to federal tax credits, Californians are eligible for a point-of-sale price reduction of up to \$1,500 for the purchase or lease of a new EV through the California Clean Fuel Reward program. PG&E also offers residential and commercial EV charging rates, that provide predictable, simplified and affordable rates for customers. To help customers estimate the full costs of EV ownership, PG&E offers an online EV Savings Calculator for both residential and fleet customers where customers can browse EV models, discover incentives, compare rate plans, and locate charging stations.

Finally, through research and pilot programs, PG&E is optimizing charging infrastructure siting and usage to maximize grid benefits and support customer affordability. For example, PG&E is

testing how smart charging and battery storage can lower operating costs and maximize efficiencies for San Joaquin Regional Transit District. PG&E is testing, analyzing, and comparing the economics for charging at various times of the day using different models with and without battery storage. As part of the pilot, PG&E funded five new electric bus chargers and a battery energy storage system and funded and built the infrastructure from the electric grid to the chargers and storage system.

Federal Policy Can Complement and Accelerate Progress

Like the current pandemic, climate change is a global challenge that requires urgent and decisive action, including leadership by the federal government to provide businesses clear, durable policies and market-based incentives to act. PG&E believes federal policies can complement actions at the state level and help provide benefits to all customers who wish to electrify their transportation.

As we have witnessed through our own experience, customers are eager to adopt EVs and enjoy their benefits, but much more is needed to build out charging infrastructure, drive down the upfront costs of electric vehicles, particularly for disadvantaged communities, encourage fleet conversion, and promote the research and innovation needed to make further progress. While PG&E has made significant investments to accelerate EV adoption, our customers cannot alone shoulder all costs needed to advance transportation electrification. Given the economy-wide benefits of EVs, we believe there are key roles the federal government should play to support this transition, including:

Infrastructure Deployment:

- Provide grant funding for public EV and other clean fuel infrastructure, including for deployment along the national highway system and in disadvantaged communities, and ensure electric utilities are eligible to partner with grant recipients given their critical role in infrastructure deployment.
- Provide rebates for EV charging infrastructure in workplaces and multi-unit dwellings, and ensure electric utilities are eligible to partner with grant recipients given their critical role in infrastructure deployment.
- Update and extend the federal tax credit for alternative fuel infrastructure to encourage commercial and consumer investments in charging infrastructure.

Customer Adoption:

- Modernize existing federal transportation programs to encourage investments in electric transportation and charging infrastructure.
- Expand funding for zero- and low-emission school buses.
- Provide grants and other incentives for electrification at ports, airports and rail yards and for public transit agencies and state, local and tribal governments to electrify their fleets.
- Provide incentives for adoption of light-duty EVs through extension of the EV tax credit and examine opportunities to provide point-of-sale rebates and used EV incentives to promote greater equity and lower the upfront cost for all customers including those with limited tax liability.
- Accelerate electrification of medium- and heavy-duty vehicles by providing tax incentives for manufacturing and adoption of these vehicle classes.
- Expand federal procurement of electric vehicles.

Research, Development & Demonstration:

- Expand federal funding for research, development, and demonstration efforts to accelerate innovations necessary to continue reducing costs of light-, medium- and heavy-duty EVs and ensure successful integration with the electric grid.

Essential Partners in America's Transportation Future

The nation's energy sector is in the midst of a profound transformation. PG&E is continuing to make investments in smarter, more resilient energy infrastructure, providing even cleaner energy, and expanding the choices and energy solutions available to meet the changing needs of our customers. Electrifying the transportation sector is the gateway to a sustainable, clean energy future and an opportunity to collectively make progress to achieve extraordinary benefits for all Americans in the decades ahead.

PG&E is fully committed to working together with policymakers, customers and all stakeholders to make this opportunity a reality. Thank you again for having me here today. I look forward to your questions.