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Electric vehicle adoption in California could increase GSP by more than $140 billion, create half a million jobs in just 10 years

Report finds avoided fuel costs will boost the state economy, with disadvantaged communities seeing the biggest relative gains

SAN FRANCISCO—Electrification of light-duty vehicles in California could be a potent catalyst for economic growth over the next ten years. That's according to a new study of the impact on the California economy if the state achieves electric vehicle (EV) adoption that is consistent with its climate goals.

"This data shows that an increase in electric vehicles could pay dividends to Californians across the board—increasing real income and gross state product by billions of dollars by 2030," said F. Noel Perry, the founder of think tank Next 10 which commissioned the report. "Transitioning to electric vehicles is not just an investment in mitigating climate risk. It's an investment in the economy."

The report, *Clean Transportation: An Economic Assessment of More Inclusive Vehicle Electrification in California,* was prepared by Berkeley Economic Advising and Research and assesses the economic implications of the projected increase in electric vehicle use with a long-term economic forecasting model—focusing on the policy milestone years of 2030 and 2050. Even under a relatively conservative baseline scenario that assumes no improvement in EV costs in the coming ten years, EV adoption could result in significant economic benefits by stimulating the overall economy, reducing harmful pollution, and improving public health outcomes. Other scenarios that consider anticipated drops in price and increase in innovation show even greater gains.

"Consumer spending is the number one driver of the state economy. When people stop spending money at the pump, they will invest most of those dollars that otherwise would have gone to out-of-state oil companies on in-state goods and services - creating jobs," said David Roland-Holst, BEAR Managing Director and Economics professor at UC Berkeley, and lead author of the report.

Key findings include:

- Successfully hitting California's 2030 GHG reduction goals with the scale of increased EV adoption modeled in this study would create more than **390,000 new jobs** under a relatively

conservative scenario—and **more than half a million new jobs** in the scenarios that account for steeper declining costs and increasing model choices.

- By 2030, the Gross State Product would increase between **$82 billion to $142 billion**, depending on the scenario analyzed.

- Real income (income adjusted for inflation) is projected to increase substantially, ranging between **$311 billion to $357 billion** in 2030.

- This overall economic expansion has significant fiscal benefits–**generating billions in additional revenue per year** from existing tax instruments.

- Looking out to 2050, **the economic benefits increase by up to seven to eight times** over those in 2030, depending on the scenario. Even under a relatively conservative estimate, California's GSP stands to increase by about five percent by 2050. Under scenarios that reflect more likely vehicle cost reductions—the gains are almost twice as large.

The report notes that the manufacturing of fuel-efficient vehicles is already associated with 14,776 jobs in California —and more indirect employment could be generated through increased demand for charging infrastructure and utility load. The projected job growth and economic benefits noted in the study come from avoided fuel costs alone.

Disadvantaged Communities Will See Biggest Economic and Health Gains from EV Adoption

While the adoption of electric vehicles in California has thus far been concentrated in higher-income segments and areas, the state recently amended its incentive programs to focus on increasing uptake in traditionally disadvantaged areas.

To help quantify the potential impacts of a more equitable distribution of EV uptake in the state, this study modeled the impacts of an "Equity" scenario that assumes EV purchasing would become equal among income groups by 2030—meaning the same overall deployment of EVs, but more rapid adoption among lower-income groups.

Across all of the scenarios modeled in the study, disadvantaged communities saw the greatest relative benefits - with higher proportional job growth and larger per capita economic gains compared to the rest of the state's population. But when adoption is concentrated in lower-income communities, the gains are even larger, and higher income groups experience the same benefits across scenarios.

"It shouldn't be surprising that populations most impacted by pollution are also lower-income," noted Perry. "EV adoption in these communities can help improve health, reduce costs, and create real economic benefits. Regardless of whether or not you own an EV, you stand to benefit from more clean vehicles on the road."

Other findings include:

- Employment and income benefits are proportionately higher among Disadvantaged Communities (DAC) even though they represent only 25 percent of the state's population. This is because the dollars spent from fuel savings will go primarily to goods and services industries—sectors that disproportionately employ DAC workers.

- By 2050, the Innovation scenario—which assumes greater cost savings through improved technology costs—creates 1.182 million additional jobs across the state, with more than 36 percent benefiting DAC households.

- The study focused on Los Angeles County and the Central Valley as 75 percent of the state's DACs are in these regions. By 2050, under the Innovation scenario, DACs in both regions would see substantial incremental employment benefits (192 jobs created per DAC in LA County and 216 per DAC in the Central Valley).

- Air pollution reductions from large-scale electric vehicle adoption also benefit DAC households more than higher-income groups. The study found that in an Equity scenario, the economic value of health benefits from the reduction in pollution would amount to $2 billion by 2030—including $800 million from avoided mortality and $1.2 billion from averted medical costs.

"The benefits to GSP and income are much larger than some other climate policies, including California's cap-and-trade program and far exceed the funds committed thus far to clean vehicle incentive programs," noted Roland-Holst. "Studies have shown that incentives are successful in helping car buyers opt for cleaner alternatives, and what we see here is that increased EV adoption, especially in lower-income communities, can have a measurable and lucrative payback."

Currently, the state is planning to significantly curtail budgeting for electric car and light-duty SUV incentives.

"As the state considers how best to ensure the adoption of electric vehicles, this research paints a clear picture of the tremendous economic and health benefits of a more extensive and equitable distribution of EVs," added Perry. "If we achieve only a fraction of the benefits described in the study—Californians across the state and across income levels stand to gain significantly from accelerating the uptake of electric cars."

Methodology

This study utilizes the Berkeley Energy and Resources (BEAR) model to evaluate the long-term economic and other impacts of plug-in electric vehicle adoption in California. The BEAR model is a detailed and dynamic economic forecasting model that traces the complex linkage effects across the California economy as they arise from changing policies and external conditions.

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About Next 10

Next 10 is an independent, nonpartisan organization that educates, engages and empowers Californians to improve the state's future. With a focus on the intersection of the economy, the environment, and quality of life, Next 10 employs research from leading experts on complex state issues and creates a portfolio of nonpartisan educational materials to foster a deeper understanding of the critical issues affecting our state.

About BEAR

Berkeley Economic Advising and Research is a California professional partnership dedicated to quality economic analysis. The three founders and principals are internationally recognized experts with over 75 years of combined experience at the forefront of economic policy research and assessment.