



# Principles for Fair and Equitable Investment in Electric Vehicles and Transportation Electrification

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## Introduction

By 2040, experts predict that 55% of global new car sales and 33% of the global vehicle fleet will be electric.<sup>1</sup> The transition to electric vehicles and electrified transportation is in progress, and prioritizing the needs of low-income consumers will be essential if the potential benefits of electric vehicles and electrified transportation are to be realized and shared.

The transition to electric vehicles (EVs) should move ahead in a way that is consistent with equity, strong consumer protections, sound electric utility rate design, and fair infrastructure investment cost allocation principles. Low-income consumers must not disproportionately bear expenses or risks that accompany the transition to electrified transportation. Positive outcomes for all, even the most vulnerable, will also help to earn support for the transition to EVs and broader electrification of transportation.

If the transition to electrified transportation is to attain fair and equitable results, transportation electrification policies, investments and programs must:

- Increase transportation access and security for low-income consumers,
- equitably allocate costs and benefits for low-income consumers,
- reduce air pollution, and
- reduce carbon and other greenhouse gas emissions

These principles should apply to policy and funding decisions that will be made to advance the electrification of transportation. Funding allocations, chiefly those made by utility regulators, are of particular importance since utility investments are generally funded by ratepayers. To the extent possible, investments in EV charging infrastructure should be financed with investor funds or other sources, such as the 2017 Volkswagen emissions settlement.<sup>2</sup> When these investments are paid for with electricity ratepayer dollars or other public funds, utility companies and regulators should strive for equitable outcomes and use these principles as guidelines.

***Affordability matters, because 31% of U.S. households report difficulty paying energy bills or sustaining adequate heating and cooling in their homes.***

Source: U.S. Energy Information Administration, Residential Energy Consumption Survey 2015

## Principles

### **1. Investment in transportation electrification must increase transportation access and security for low-income consumers.**

More accessible and affordable transportation options can help low-income consumers improve their economic, educational, and health status.<sup>3</sup> Yet, currently, low-income consumers are less likely to own vehicles than middle- and upper-income consumers.

For some low-income drivers, individual ownership of EVs could emerge as a more accessible option as EVs become more affordable. Since plugging in is almost always less expensive than filling a car's gas tank,<sup>4</sup> and repair and maintenance costs are lower for EVs than for gasoline-fueled cars, ownership may be within reach for some under-resourced households. The price for a new EV is gradually dropping to match the price of a new gasoline-fueled car,<sup>5</sup> and used EVs can be purchased for a relatively reasonable price (for example, a used 2015 Nissan Leaf can be purchased for less than \$10,000 in 2018). Incentives for the purchase or lease of new or used EVs should be tailored to do a better job of reaching moderate income and lower income families. Certain existing tax incentives are not likely to benefit low-income drivers. For example, the Federal Qualified Plug-in Electric Drive Motor Vehicle Credit is not likely to be used by low-income families as it is a non-refundable tax credit and only new cars are eligible. But these programs could be reconfigured to reach more low-income consumers, such as the programs offering enhanced rebates for low-income purchasers of new or used EVs in California and Oregon.

Even with purchase or leasing incentives, not all low-income consumers will be able to buy an EV or would choose to do so. Car ownership will not be the best solution for all consumers, and programs that are designed to assist low-income consumers can use other methods to serve their transportation needs. Subsidized EV car sharing programs, subsidized ride-hailing services, electrification of public transit and school buses, and electric scooter and bike sharing programs are being piloted in a few states to meet the mobility needs of low-income communities. Some utility EV programs have already helped to fund and establish these transportation options.<sup>6</sup>

Identifying the needs of varied low-income communities should be guided by the communities themselves. Transportation needs assessments should be used to identify those transportation security investments that would be most beneficial to low-income households in a specific geography. Models for such assessments are readily available<sup>7</sup> and some communities have already undertaken assessments.<sup>8</sup> Affected communities should be involved throughout the process of planning and developing targeted transportation electrification programs.

For middle income and higher income households and communities, the primary benefits of transportation electrification may be the environmental benefits of reduced pollution and lower carbon emissions. But for low-income households and communities, environmental benefits should be coupled with transportation improvements that will help these communities gain financial stability. Since greater access to transportation can help low-income families achieve their employment, education and health goals,<sup>9</sup> improved low-cost transportation options would have wide-ranging benefits.

## **2. Investment in transportation electrification must equitably allocate costs and benefits for low-income consumers.**

“Equity” refers not to equal treatment of different groups, but rather treating different groups in a way that will bring them all to similar and fair outcomes. Equity in the context of transportation electrification means that the needs and limited resources of low-income consumers will shape the types of programs that are developed and the ways in which costs are allocated.

Widespread transportation electrification will continue to draw upon resources from public and private sources. Utility companies are eager to invest in the charging infrastructure that is needed to foster the use of EVs, and have sought to recoup these investment costs through utility rates. Consumer advocates have raised concerns that spreading costs “equally” among electricity customers will create a financial burden for families who are already struggling to pay for utilities and other basic necessities, imposing these costs on the consumers who are the least able to bear them and are the least likely to become early adopters of EVs. Fortunately, to date, bill impacts appear to be minimal,<sup>10</sup> but regulators and advocates should be prepared to address larger bill impacts if these occur during the transition to transportation electrification.

It is possible to invest in needed EV charging infrastructure without burdening low-income consumers. Utility rates can be designed to provide discounts for low-income customers that will offset the costs of EV infrastructure investment that are otherwise passed along in increased electric rates. One rate design option that has been adopted by utilities in some areas including California, Michigan and New York is a time of use (TOU) rate that sets a lower price for electricity use or electric vehicle charging during overnight hours or other times when electricity supply is most abundant. Where TOU utility rates are being considered as a way to manage EV charging and balance the demands on the electric grid, EV-only TOU rates may be a more consumer-friendly option than a whole house TOU rate in some instances. Or where TOU rates apply to both EV charging and household use, structuring these as rebates with “hold harmless” price protections for low-income consumers in the first year or more would help protect these households from unexpected and unaffordable utility bill fluctuations.<sup>11</sup>

While EVs and related technology should be accessible to low-income consumers in ways that address their mobility needs, energy, and transportation cost savings should be shared equitably as well. According to some forecasts, increased EV use is predicted to lower electricity rates for consumers over the next decade or more, after infrastructure spending has slowed and EV use increases. Low-income consumers must be able to share in the future electric rate benefits, if they emerge as predicted.

## **3. Transportation electrification investments must reduce air pollution.**

Transportation electrification can reduce emissions from the transportation sector, and can help reduce pollution overall when coupled with the increased use of renewable energy for power generation.

Low-income communities are disproportionately burdened with pollution from power generation and transportation sources. Communities of color are also more likely to have environmental justice concerns, often bearing an excessive share of pollution from manufacturing, power generation, highways, and public transportation hubs.<sup>12</sup> Transportation electrification should be

implemented in a way that addresses the environmental justice concerns of these communities and provides public health benefits.

#### **4. Transportation electrification investments must reduce carbon emissions and other greenhouse gas emissions.**

Transportation electrification is a key component of state plans to reduce greenhouse gas emissions and fight climate change. In the United States, transportation has become the largest source of carbon emissions, exceeding the emissions from power plants. The U.S. transportation sector now produces 1.9 billion tons of carbon emissions per year, slightly more than the 1.8 billion tons of carbon emissions per year released by the electric power sector.<sup>13</sup>

Advocates for low-income consumers recognize the threat of climate change. Climate change is anticipated to disproportionately hurt low-income consumers.<sup>14</sup> Elders and small children are more vulnerable to the harmful health effects of extreme temperatures.<sup>15</sup> Disadvantaged communities may be the least equipped to cope with the impacts of extreme weather, as the poor may lack the resources to pay for climate mitigation measures or to relocate after natural disasters.<sup>16</sup> Addressing climate change is therefore a consumer justice issue. However, equity demands that the economic costs of addressing climate change – including the upfront costs associated with transportation electrification – should not be disproportionately borne by those least able to absorb those costs.

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Since 1969, the nonprofit National Consumer Law Center® (NCLC®) has worked for consumer justice and economic security for low-income and other disadvantaged people, including older adults, in the U.S. through its expertise in policy analysis and advocacy, publications, litigation, expert witness services, and training. <http://www.nclc.org>

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## Endnotes

<sup>1</sup> Bloomberg New Energy Finance, *Electric Vehicles, Global Sales Outlook* (2018), <https://about.bnef.com/electric-vehicle-outlook/>.

<sup>2</sup> *U.S. v. Volkswagen AG et al.*, Case No. 3:16-cv-00295, Environmental Mitigation Trust Agreement for State Beneficiaries, Appx. D-2: Eligible Mitigation Actions and Mitigation Action Expenditures (Oct. 2, 2017).

<sup>3</sup> E.g., N.Y. Times, *Transportation Emerges as Crucial to Escaping Poverty* (May 7, 2015); The Atlantic, *The Transportation Barrier* (Aug. 9, 2015).

<sup>4</sup> Mia Yamauchi, Plugless, *Driving on Electricity Is Cheaper than Gas in All 50 States*, <https://www.pluglesspower.com/learn/driving-electricity-cheaper-gas-50-states/>.

<sup>5</sup> Bloomberg New Energy Finance, *Electric Vehicles* (2018), <https://about.bnef.com/electric-vehicle-outlook/>.

<sup>6</sup> E.g., California Public Utility Commission, *Decision on the Transportation Electrification Standard Review Projects*, No. A.17-01-020 (May 31, 2018)

<sup>7</sup> Greenlining Inst., *Electric Vehicles for All: An Equity Toolkit*, <http://greenlining.org/publications-resources/electric-vehicles-for-all/#tab4-section1>.

<sup>8</sup> E.g., OPAL, *Community-based Assessment of Smart Transportation Needs in the City of Portland* (April 2018), [http://www.opalpdx.org/wp-content/uploads/2018/05/Community-Assessment-of-Smart-Mobility-OPAL\\_PSU\\_Forth-Final.pdf](http://www.opalpdx.org/wp-content/uploads/2018/05/Community-Assessment-of-Smart-Mobility-OPAL_PSU_Forth-Final.pdf).

<sup>9</sup> See, Rolf Pendall, Christopher R. Hayes, Taz George & Zachary J. McDade, *Driving to Opportunity: Understanding the Links among Transportation Access, Residential Outcomes, and Economic Opportunity for Housing Voucher Recipients*, The Urban Institute (March 31, 2014).

<https://www.urban.org/research/publication/driving-opportunity-understanding-links-among-transportation-access-residential-outcomes-and-economic-opportunity-housing-voucher-recipients>

<sup>10</sup> For example, in a proposal pending in Maryland, the highest estimated bill impact is \$0.42 per month for one utility service area, less in other service areas. Maryland Public Services Commission, *Petition for Implementation of a Statewide Electric Vehicle Portfolio*, PC44, Case No. 9478 (Jan. 22, 2018).

<sup>11</sup> See also Jones, Philip B, Jonathan Levy, Jenifer Bosco, John Howat, and John W. Van Alst, *The Future of Transportation Electrification: Utility, Industry and Consumer Perspectives*. Ed. Schwartz, Lisa C. (2018), available at <https://emp.lbl.gov/projects/feur>.

<sup>12</sup> Michelle L. Bell and Keita Ebisu, *Environmental Inequality in Exposures to Airborne Particulate Matter Components in the United States*, Environmental Health Perspectives, National Institutes of Health U.S. Dept. of Health and Human Services, ehponline.org (Aug. 10, 2012) (documenting racial and income disparities in exposures to specific particulate pollutants linked to cardiovascular disease, asthma, and cancer); Gregory C. Pratt, Monika L. Vadali, Dorian L. Kvale, & Kristie M. Ellickson, *Traffic, Air Pollution, Minority and Socio-Economic Status: Addressing Inequities in Exposure and Risk*, Int'l Journal of Environmental Research and Public Health (May 2015).

<sup>13</sup> U.S. EIA, *Total Energy Data Browser*, <https://www.eia.gov/totalenergy/data/browser/>.

<sup>14</sup> Dept. of Economic and Social Affairs of the United Nations Secretariat, *The World Economic and Social Survey 2016: Climate Change Resilience—an Opportunity for Reducing Inequalities* (2016).

<sup>15</sup> See, e.g., National Institute on Aging, “Hypothermia and Older Adults”, <https://www.nia.nih.gov/news/hypothermia-and-older-adults>; Centers for Disease Control and Prevention, “Heat and Older Americans,” <https://www.cdc.gov/disasters/extremeheat/older-adults-heat.html>; Children’s Hospital of Wisconsin, “Heat Related Illnesses in Children,” <https://www.chw.org/medical-care/sports-medicine/sports-medicine-and-rehab-services/heat-illness>.

<sup>16</sup> Higher income communities may suffer the largest financial impacts overall when expensive property is damaged, while low-income communities are already more vulnerable and are at risk of suffering more immediately harmful impacts.