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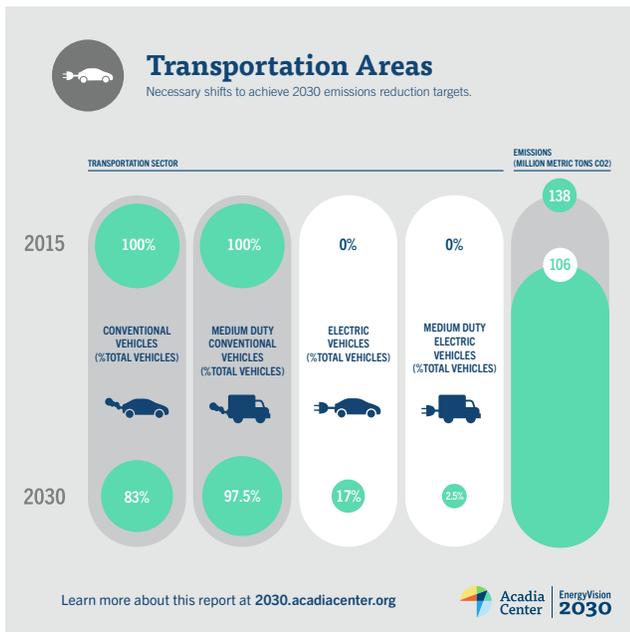
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EnergyVision 2030

Transportation
Companion Brief

Transportation

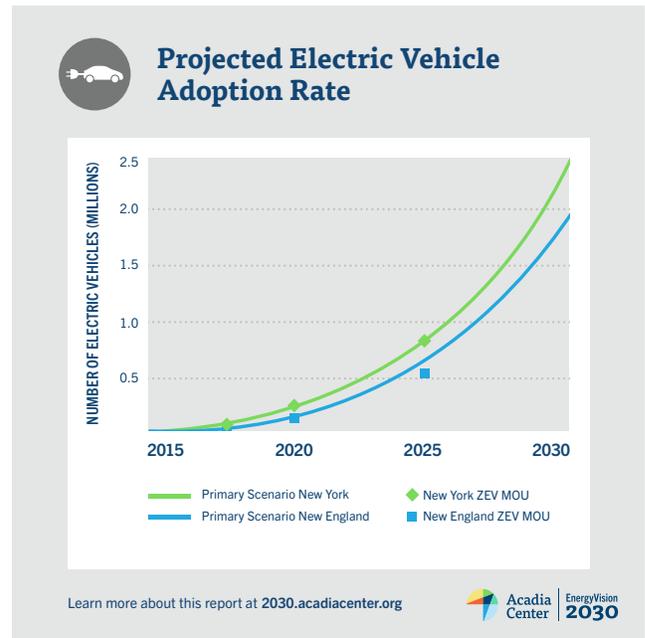
New York and New England must embrace clean transportation technologies to build a cleaner and more efficient regional transportation system. By adopting these technologies, states can also reduce greenhouse gas (GHG) emissions significantly, as fossil fuels burned for transportation represent the largest share of the region's GHG emissions (40%). New policy measures can build on already growing consumer interest in zero-emission vehicles (ZEVs), primarily electric vehicles (EVs), to replace more conventional cars and trucks. At the same time, the states can invest in alternative mobility options to create vibrant communities and reduce the need to drive in both urban and rural areas. The figure below shows some of the shifts necessary.



Electrifying Cars and Trucks

Zero-emission vehicles can reduce our carbon footprint, lower driving costs, and earn money for EV owners who participate in future electricity markets for battery storage. EVs are practical, commercially available cars and light trucks, which, even with low gas prices, can save consumers money on driving costs. Recognizing the consumer benefits of EVs, as well as their GHG advantage, five of seven¹ Northeast states signed an agreement to put nearly 1.4 million ZEVs on the road by 2025. Acadia Center modeling demonstrates that the agreement puts the region on the right track towards the 2030 emissions reduction goal, but that states can

advance progress beyond 2025 to **electrify 17% of the Northeast fleet by 2030**. California has demonstrated that rapid deployment of EVs is possible, achieving 3.6% of sales in 2016.²



States can pursue or enhance policies to promote the purchase of ZEVs in the Northeast by reducing ownership costs, increasing infrastructure, broadening public awareness, and ensuring consumer protections. Fortunately, many—but not all—states in the region have already started to implement these policies; nevertheless, success hinges on the ability of all Northeast states to pursue successful ZEV strategies.

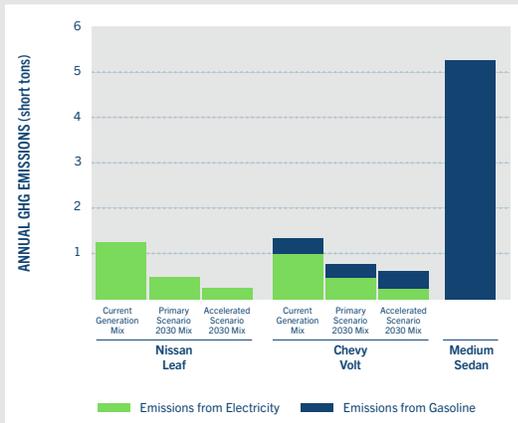
Making ZEVs Affordable for All

There are two primary strategies for promoting ZEVs: (1) decrease the vehicle's purchase price and, (2) in the case of EVs, decrease charging costs. To cut the price of buying a ZEV, many states now offer rebates or other incentives ranging from \$500 to \$3,000, depending on the state and type of vehicle (e.g., whether a car is an EV or a fuel cell vehicle). In order to spur the development of EV markets that will lead to better economies of scale, states that do not offer rebates should adopt these programs, and all states should work to ensure robust, consistent policies and long-term sources of funding. In addition, states should establish rebate programs for income-eligible participants that provide incentives for both new and used vehicles.



Electric Vehicle Comparison

Based on 15,000 miles of driving annually



Learn more about this report at 2030.acadiacenter.org



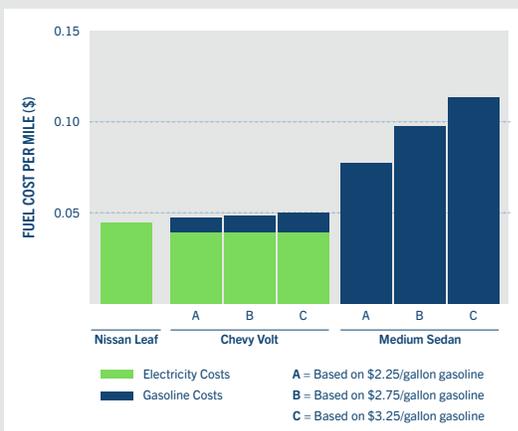
Source: see note 3

States can lower the cost to operate an EV by establishing electric rates that take advantage of low nighttime electricity costs. Currently, in almost all states, residential customers are charged a flat electric rate, regardless of when they use electricity. Rates that vary by time of day can optimize use of the electric grid. State public utility commissions should pursue time-of-use charging rates for electric vehicles in order to benefit consumers and the grid.



Fuel Cost Comparison

All based on \$0.1523/kWh of electricity



Learn more about this report at 2030.acadiacenter.org



Source: see note 4

Increasing Availability of EV Charging Stations

While most of today's EVs provide enough range for an average driver's daily needs, consumers will more readily accept EV technology if charging stations are more widely available. To overcome EV range concerns, states should invest in charging infrastructure and minimize barriers to building new charging stations. State leaders should increase the convenience and visibility of EVs by investing in fast charging stations along designated corridors, public charging at state and municipal buildings, and charging facilities in workplaces. In addition, reducing or eliminating electricity demand charges for EV station hosts will remove another barrier to building EV infrastructure.

Consumers must be protected as the electric vehicle charging market grows. States should ensure that consumers have open access to public charging stations with fair and transparent pricing, and they should prohibit vendors that require a subscription fee. Public utility commissions should also thoroughly evaluate any proposals by utilities to pay for charging infrastructure with ratepayer funds.

Broadening Public Awareness

Despite the growing popularity of EVs, many consumers are not aware of the benefits of owning an EV. States can increase EV awareness by adding electric vehicles to their fleets and installing public charging stations at municipal buildings. Adoption by the public sector helps promote these vehicles and lowers operating and fuel costs borne by taxpayers. Similarly, by providing incentives for private entities to purchase EV fleet vehicles, states can further increase the visibility of EVs. Workplace and public charging infrastructure also serve to increase awareness and start discussions around EVs and owner experiences.

Medium-duty Vehicles

Beyond passenger cars and light trucks, medium-duty vehicles, such as buses and delivery trucks, can also be electrified. For example, at the end of 2015, FedEx had already placed nearly 1,200 electric vehicles in service in its global fleet. **Converting 2.5% of the medium duty fleet to electric vehicles by 2030** will help the region meet its clean energy goals. By promoting the benefits of these vehicles, including reduced fuel and maintenance costs, states can achieve greater adoption of commercially available electric alternatives in the medium-duty fleet.

EV Batteries as a Grid Resource

Increasing the number of EVs also increases the number of batteries plugged into the electric grid, opening the door for innovative load management through vehicle-to-grid integration. For example, when EVs are plugged in, their batteries can help to integrate renewable energy by charging at times of peak renewable production and discharging that energy back into the grid at times of peak energy demand. While this type of integration depends upon modernizing the electric grid, states should require that EVs be considered in grid planning, both as a resource and a new source of load, to keep utilities working toward these goals. Managed charging and demand response programs, as well as rates that vary by time, can also help facilitate vehicle-grid integration by creating incentives for customers to charge at desired times.

Transportation Climate Policy

The Regional Greenhouse Gas Initiative (RGGI) offers a model for addressing emissions in the transportation sector while creating a revenue stream for reinvestment in state infrastructure. Since RGGI began, the region has achieved a 40% drop in emissions.⁵ RGGI-funded energy efficiency programs have helped produce over \$3.6 billion in lifetime customer savings on energy bills,⁶ and \$5.7 billion in avoided health costs from removing toxic emissions.⁷ Five Northeast states and Washington, D.C., have committed to exploring a similar policy for transportation emissions.⁸ States should collaborate through the Transportation and Climate Initiative and other venues to make meaningful, enforceable commitments to implement climate policies for transportation. These policies would create an additional incentive to meet the 2030 target by setting a concrete ceiling on transportation emissions, while raising hundreds of millions of dollars to support clean transportation solutions.

Increasing Mobility Options

By increasing and improving transportation choices, states can reduce the number of miles driven (vehicle miles traveled or “VMT”) by conventional cars and trucks. Designing communities to be more walkable and bikeable can decrease driving, as can increasing alternatives like ridesharing and public transportation.

To meet emissions targets by 2030, the region can **slow projected VMT growth from 8% under current policies to 3%, reducing annual VMT 5% over a 15-year period.**

To put this in perspective, VMT in the Northeast dropped 5% in the period of 2007 to 2011, an equivalent reduction in only 4 years.⁹ States can reach this target in several ways: urbanized states with below average numbers of public transportation commuters such as Connecticut and Rhode Island can increase their transit programs; rural areas can expand bus and on-demand ride services to improve connectedness; and municipalities in all states can improve zoning regulations to help create more walkable, transit-friendly communities.

References

- 1 CT, MA, RI, VT, and NY, as well as CA, MD and OR, signed a memorandum of understanding in October 2013 committing to putting 3.3 million zero-emission vehicles on the road by 2025. Separately, these states, as well as Maine, have signed on to California’s clean car standards.
- 2 California ZEV data available at <http://drivingzev.com/zev-state/california>
- 3 Acadia Center Analysis of EnergyVision 2030 Modeling results, U.S. EPA, U.S. DOE, and EIA data.
- 4 Acadia Center Analysis of U.S. DOE, U.S. EPA, and EIA data.
- 5 RGGI emissions data available at <http://www.rggi.org/market/tracking/public-reporting>
- 6 The Investment of RGGI Proceeds Through 2014, RGGI, Inc., September 2016. Available at: https://www.rggi.org/docs/ProceedsReport/RGGI_Proceeds_Report_2014.pdf
- 7 Analysis of the Public Health Impacts of the Regional Greenhouse Gas Initiative, 2009-2014, Abt Associates, January 2017. Available at: <http://abtassociates.com/AbtAssociates/files/7e/7e38e795-aba2-4756-ab72-ba7ae7f53f16.pdf>
- 8 Connecticut, Delaware, New York, Rhode Island and Vermont joined Washington, D.C., in their commitment to pursue market-based climate policy for transportation. See: <http://www.georgetownclimate.org/articles/five-northeast-states-and-dc-announce-they-will-work-together-to-develop-potential-market-based-policies-to-cut-greenhouse-gas-emissions-from-transportation.html>
- 9 State VMT data available from the Federal Highway Administration Highway Statistics Series. Available at: <https://www.fhwa.dot.gov/policyinformation/statistics.cfm>

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