

Driving progress: accelerating a zero-emission road transportation future

2022 ANNUAL REPORT



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Letter from the director

The past year has been full of remarkable achievements on our journey to 100% clean, electric transportation, including buses, 2- and 3-wheelers, cars, and trucks. Throughout 2022, our community of Drive Electric Campaign partners contributed to and celebrated new government and business commitments, increased public and private investments, and helped to drive key policy outcomes, many of which were years in the making.

This past year, our campaign has further refined our strategy, extended our geographic reach, and expanded the coalition of partners dedicated to reaching a zero-emission transportation future together. Around the world, our partners made the case for clean transportation: from environmental justice leaders in the U.S. demanding an end to dirty diesel truck pollution, to neighborhoods across Europe cheering cleaner air thanks to low-emission zones, to electric vehicle drivers connecting across six countries in Central America with the Ruta Eléctrica.

In 2022, the share of new EV sales grew dramatically in key geographies. This is no accident. Where Drive Electric partners have succeeded in securing durable government policies, we saw a rapid increase in electric vehicle sales. And the **policies that passed this year will set us on a path of even greater acceleration.**

For example, the European Union finalized an end to sales of polluting cars and vans by 2035 in favor of electric models, as part of the “Fit for 55” climate action package. In China, ambitious national and sub-national policies contributed to exponential growth in sales of electric cars and trucks and extended China’s leadership on e-buses. In India, fiscal incentives and other policy support at the national and state level have resulted in an explosion in the market for electric three-wheelers, and an encouraging expansion in the market for electric buses. In the U.S., after several years of antagonistic policy under the previous administration, President Biden reversed the rollback of vehicle emission standards and signed the landmark Inflation Reduction Act package that includes EV incentives, industrial policy, and market stimulus.

These ambitious policies are already transforming the market, so much so that I am pleased to share that Drive Electric has reached one of our key performance indicators four years early. **EV car sales, averaged across the four key markets of Europe, China, the U.S., and India, account for more than 15% of new car sales.** Just a few years ago, many industry analysts did not believe we would reach this milestone by the end of the decade, let alone in 2022.

The incredibly strong policy signals from these leading markets are starting to shift perceptions related to EVs around the world. Clean, zero-emission transportation is no longer seen as the technology of the future, but as the technology of today. In recognition of this shift and the immense potential for “leapfrogging” over dirty combustion to electric transportation, the Campaign has expanded our activities and support for partners working in emerging economies.

Throughout this progress report, we invite you to read and learn about the incredible outcomes and milestones from around the world. It was not easy to summarize the depth and breadth of the progress, so we look forward to continuing to share more stories with you throughout the year. To our partners, supporters, and the wider community of climate action: thank you for your dedication and your contributions to a year of previously unimaginable progress toward a clean transportation future.

Rebecca Fisher

Drive Electric
Campaign Director



2022 by the numbers

420

grants awarded

279

organizations
engaged

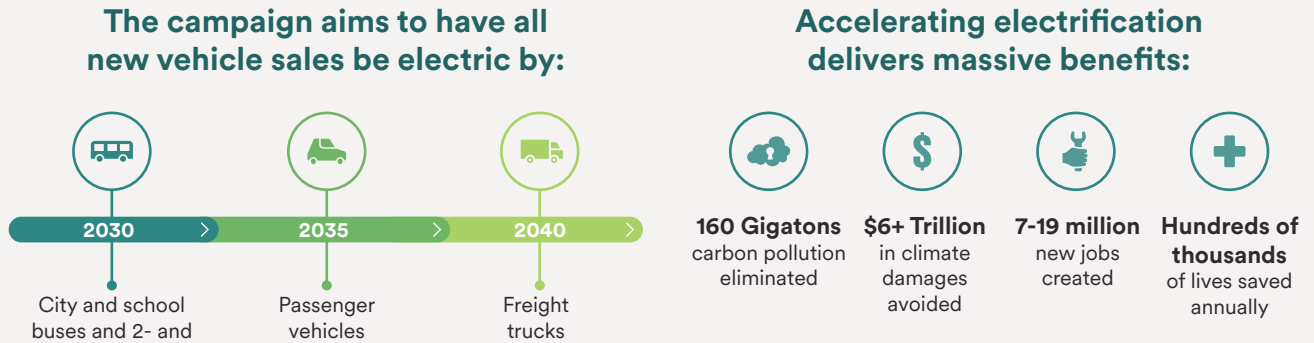
65+

countries with
active partners

122

total
policy wins


FIGURE 1: DRIVE ELECTRIC GOALS & BENEFITS

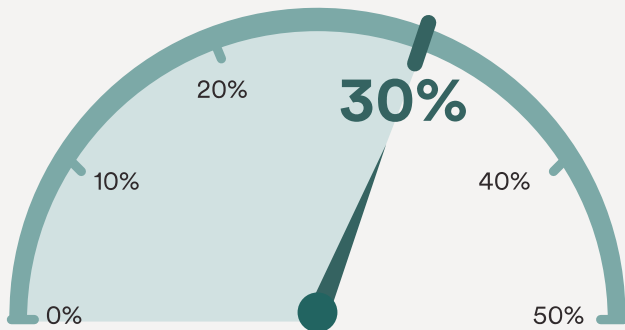


Source: Drive Electric technical analysis, completed in 2020 by ClimateWorks Foundation; emissions abatement data and benefits are calculated over 2020-2060 using a 2017 Business-as-usual scenario.

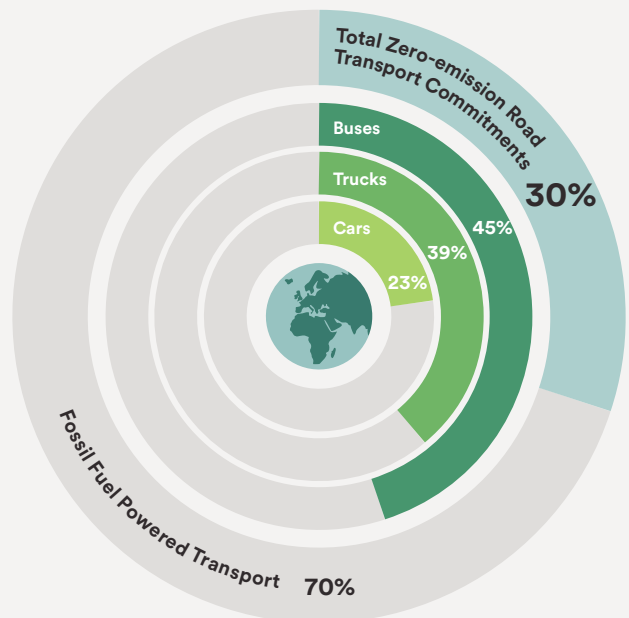
FIGURE 2: GLOBAL PROGRESS ON ZERO-EMISSION VEHICLES

How far are we to getting the majority of transportation demand committed to zero-emission vehicles?

30% 
of the world's transportation demand is now committed to **100% electric vehicles by 2050**



How much of the world's road transportation demand is committed to zero-emission vehicles?



Source: 2023 Annual Survey, IEA Energy Technology Perspectives 2017 data on transport energy use, and additional sources for state- and city- specific characteristics in the US, India, and China.

DRIVE ELECTRIC PARTNERS

Advance Smart Government Policies

Incentivizing electric transportation market growth through pollution regulations, government investment, publicly supported infrastructure, and more. Our partners develop targeted research, share technical know-how, and engage with policymakers at all levels, from cities, states and nations, to multinational partnerships.

Engage Business Leadership

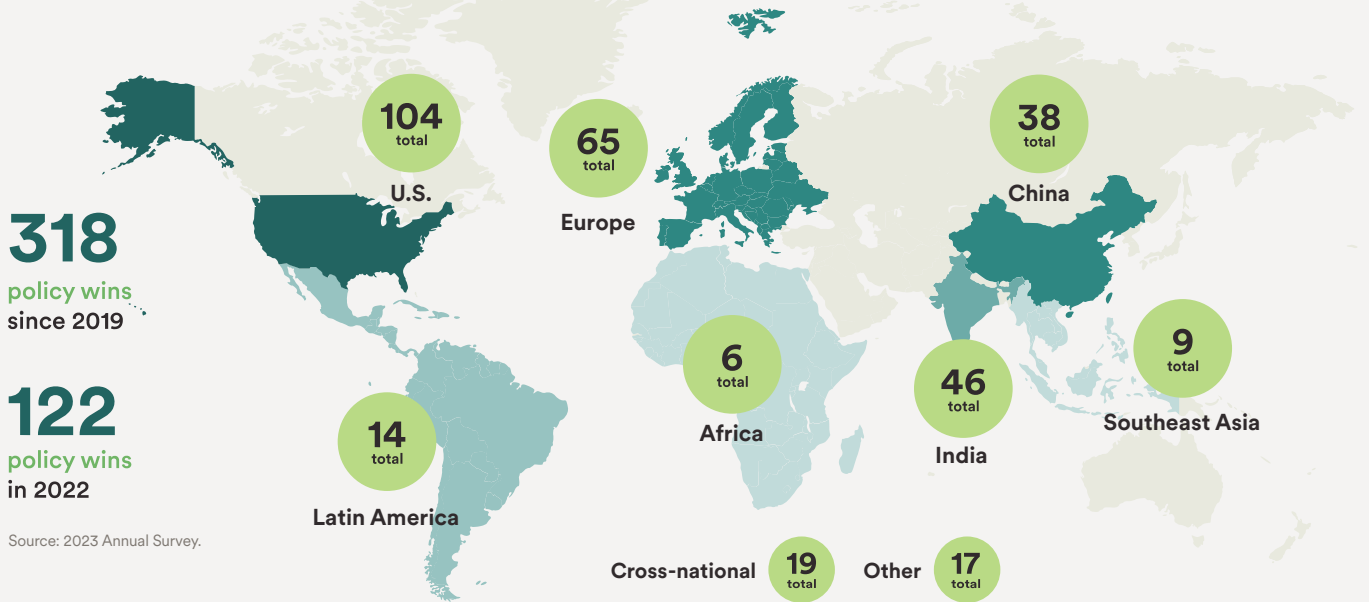
Across industries from vehicle manufacturers, infrastructure providers, corporate fleets, and investors, our partners are moving businesses to commit to increasing electric transportation investments, and to support smart government policies, which will drive more available and affordable products.

Support Diverse People-powered Coalitions

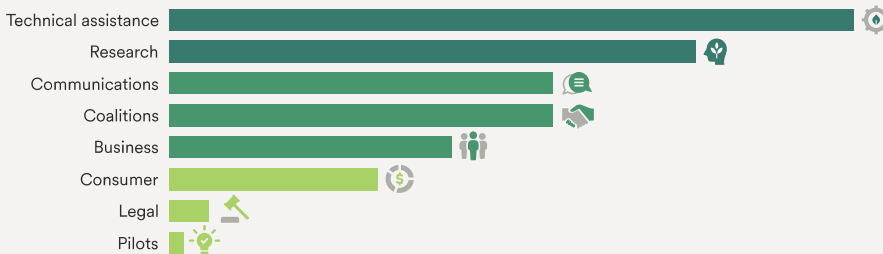
Increasing engagement from civil society to ensure accountability across government and businesses, and communicate the benefits of transportation electrification. With support from Drive Electric, coalitions have secured dozens of smart government policies and business actions that are driving adoption of zero-emission transportation.

These three interconnected levers of change, powered by philanthropy, collectively escalate the ambitions and actions needed for a zero-emission future by governments and businesses, with support from civil society.

FIGURE 3: GLOBAL PROGRESS ON ZERO-EMISSION TRANSPORTATION POLICIES



How Drive Electric partners are driving change








Technical assistance includes workshop participation, board engagement, and engagement in rule-making, among others. Research includes assistance with and development of papers and cost/benefit analysis. Communications includes assistance with op eds and social media. Coalition facilitates the sharing of information. Consumer includes support for public testimony, and sign-on letters, among others.

Drive Electric Campaign progress 2022: Summary charts

FIGURE 4: DRIVE ELECTRIC CAMPAIGN POLICY WINS IN 2022

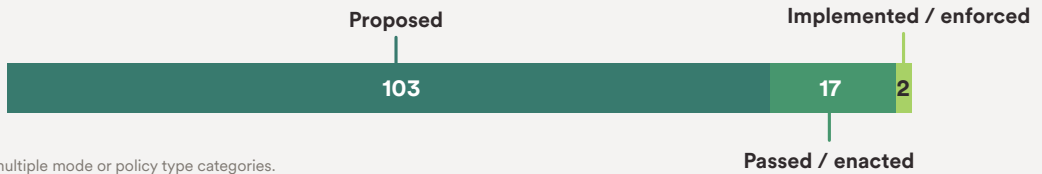
122
policy wins
in 2022

By mode

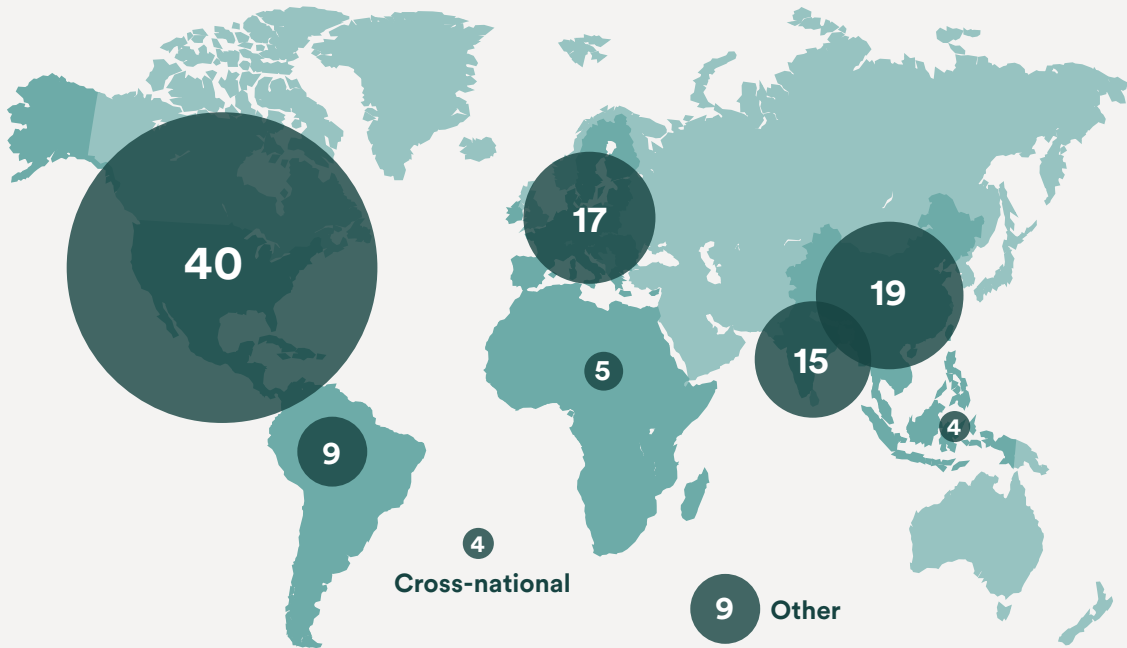
-  **84** Truck
-  **73** Car
-  **60** Bus
-  **32** 2/3 Wheeler
-  **5** Other

By policy type

-  **58** Vehicle regulation
-  **42** Charging
-  **54** Commitment
-  **28** Vehicle financial/other incentive
-  **26** Funding/investment
-  **13** EV access privilege
-  **7** Other



A single policy can be included in multiple mode or policy type categories.



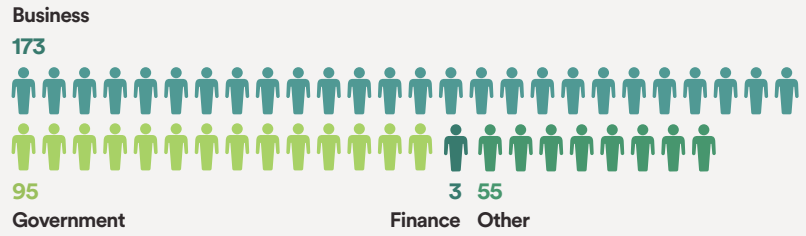
In 2022, Drive Electric partners contributed to at least 122 ZEV-enabling policies; by mode, most were focused on trucks, but cars, buses, and 2- and 3-wheelers also saw advancement.

Source: 2023 Annual Survey.

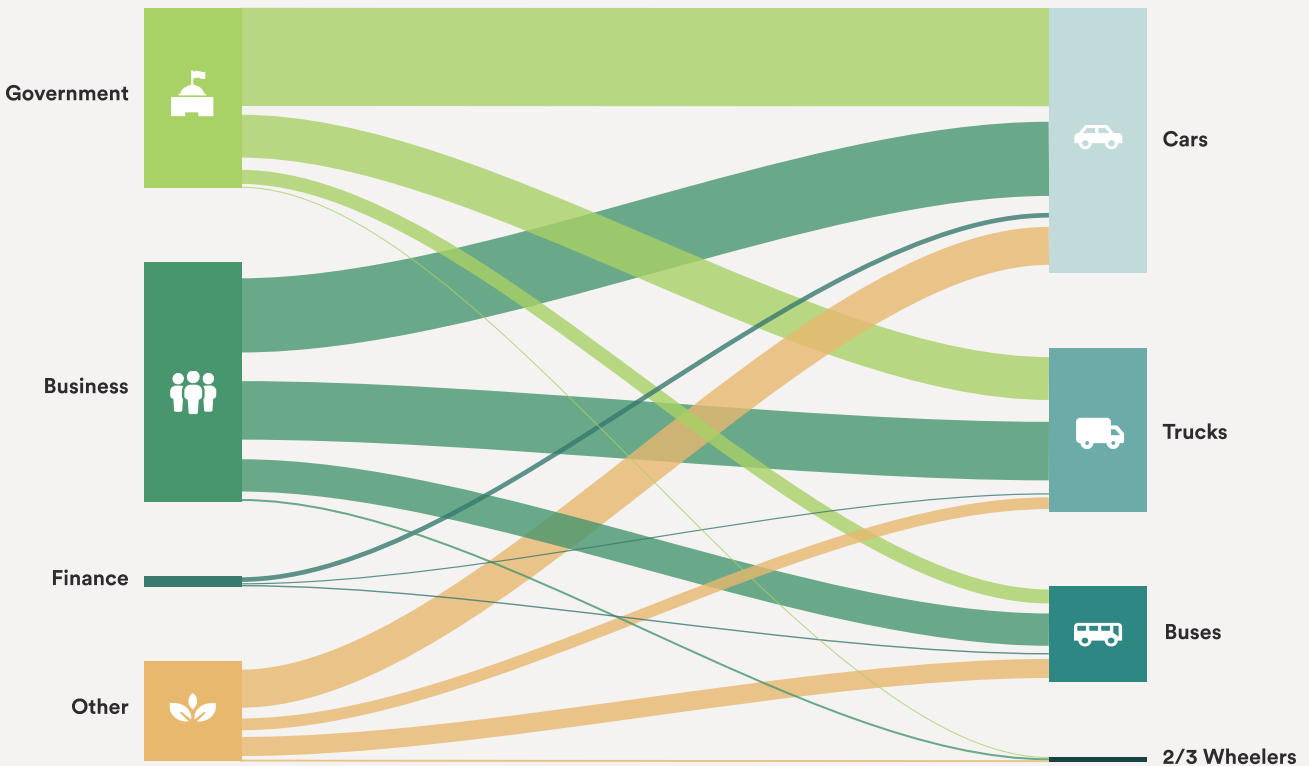
FIGURE 5: NEW STAKEHOLDERS COMMITTING TO ZERO-EMISSION TRANSPORTATION

326

new stakeholders publicly supporting the transition to 100% zero-emission transportation



Signatories by commitment type and mode

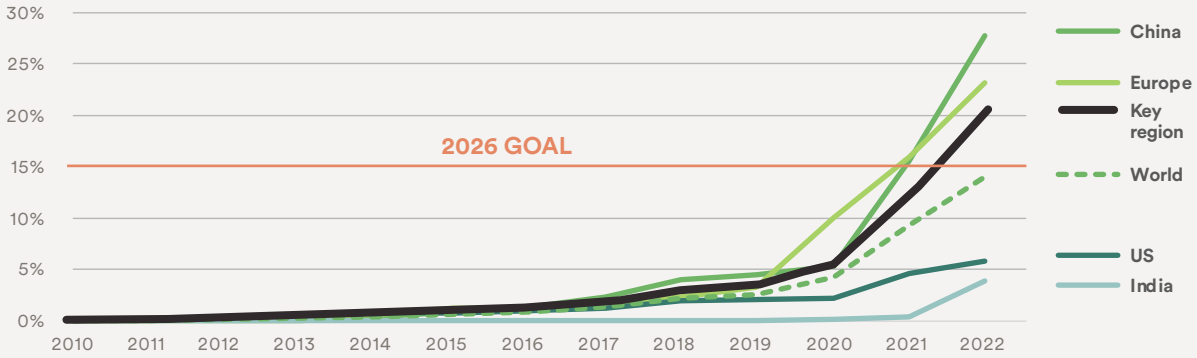


Source: 2023 Annual Survey.

Cumulatively, there are now 1,903 stakeholders committing to a 100% zero-emission transportation future, with 326 new signatories in 2022. Major stakeholder segments include governments of all levels, financial institutions, business, and other entities like non-governmental bodies, and these actors express their commitments to zero-emission cars, trucks, buses, and 2- and 3-wheelers. Examples of the new commitments to the transition to 100% EVs are summarized in the table of Global Platforms Highlights (p. 22).

FIGURE 6: GLOBAL PROGRESS OF ZEV CARS AND TRUCKS BY END OF 2022

Car ZEV Sales Share (light duty passenger)

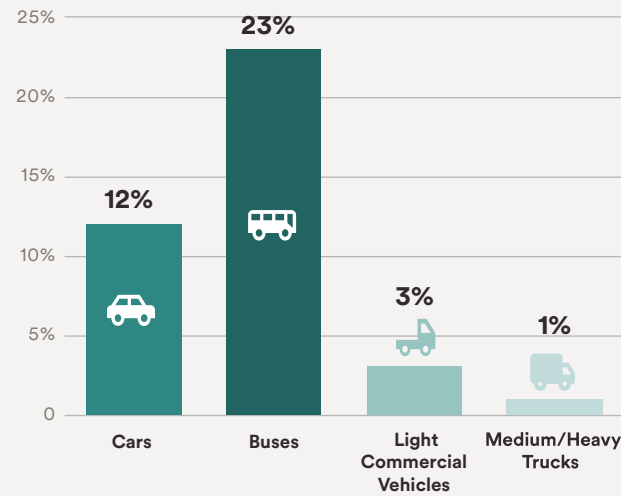


*Includes only passenger BEV and PHEV sales.

Source: IEA road database, ICCT sales, EV Volumes, Schmidt Automotive Research Europe 2022 sales. Passenger sales for 2022 are an estimate. (This chart is partially based on the historical data developed by the International Energy Agency, 2023 as part of its Transport project, all rights reserved, but the resulting chart has been prepared by ClimateWorks and does not necessarily reflect the views of the International Energy Agency.)

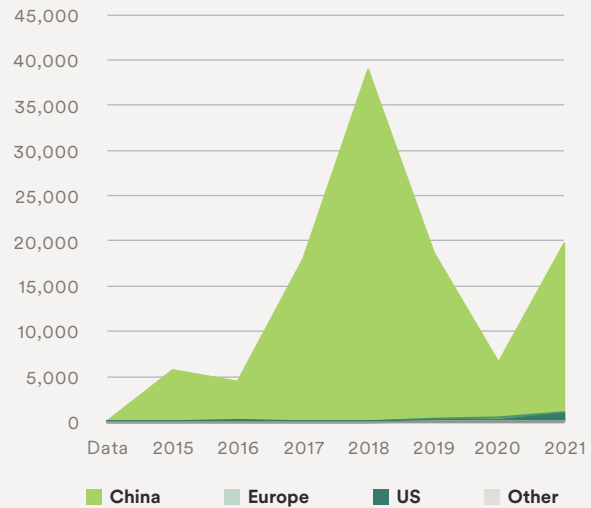
Drive Electric tracks the market share of electric vehicles in key regions and around the world, working toward our goal of 15% by 2026 in key regions as an indicator of progress. In 2022, car EV sales surpassed that goal when averaged across China, Europe, the U.S., and India — 4 years ahead of our target; yet, as can be seen in the graph, the trajectory of each market is unique and not all are on an accelerated adoption curve. This graph shows zero-emission light-duty passenger car sales.

Share of EV Sales in Key Regions in 2021



Source: IEA road database. (This chart is partially based on the historical data developed by the International Energy Agency, 2023 as part of its Transport project, all rights reserved, but the resulting chart has been prepared by ClimateWorks and does not necessarily reflect the views of the International Energy Agency.)

Global Progress of ZEV Trucks in Key Markets



Truck EV sales include Medium and Heavy BEV, FCEVs, and PHEVs only.

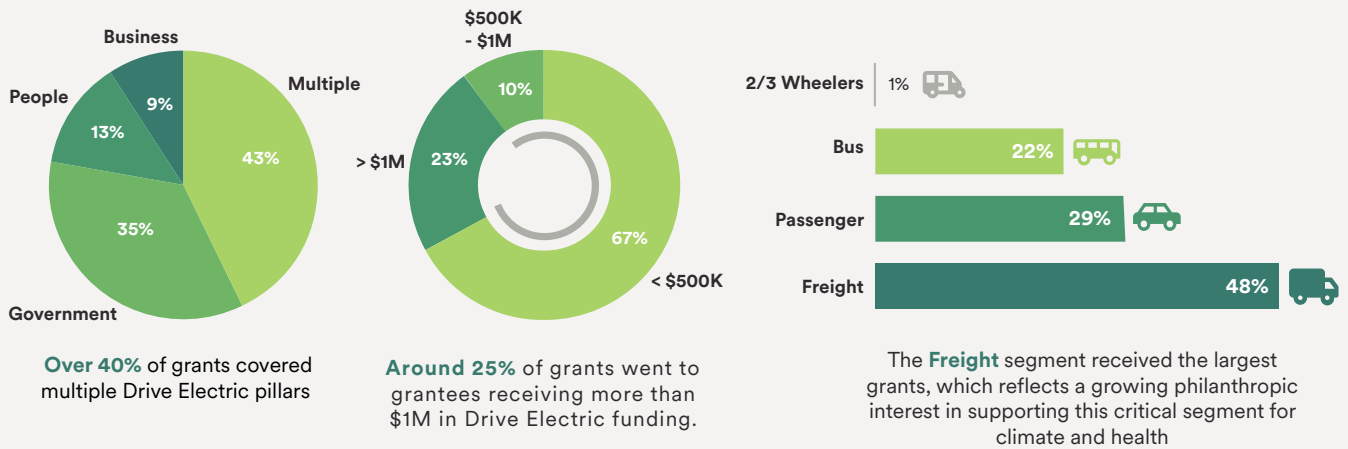
Source: 2023 Annual Survey, IEA road database. (This chart is partially based on the historical data developed by the International Energy Agency, 2023 as part of its Transport project, all rights reserved, but the resulting chart has been prepared by ClimateWorks and does not necessarily reflect the views of the International Energy Agency.)

Drive Electric tracks the market growth of electric vehicles in key regions and around the world. This graph shows zero-emission medium- and heavy-duty commercial truck sales, in thousands.

Accelerating philanthropic investment

Drive Electric is a global campaign powered by philanthropy to end the polluting tailpipe and accelerate the transition to 100% clean electric vehicles. Hosted by ClimateWorks Foundation, Drive Electric is a collaborative ecosystem of more than 100 partners around the world, including over 25 foundation partners. By mobilizing philanthropic resources with a shared strategy, audacious goals, and connected campaign resources, we are supporting on-the-ground experts to effect change and accelerate our path to a clean transportation future. According to ClimateWorks Foundation data, the entire transport sector had historically received an average of 3% of all tracked foundation funding for climate change mitigation from 2015-2021, with less than \$10M invested in electric transportation globally in 2015. With increased collaboration and investment from philanthropy, Drive Electric has helped expand support for these activities to over \$160 million invested globally in 2022. Drive Electric tracks grant-making by our campaign partners, including the regional climate foundations and aligned Drive Electric funders (see below). Data presented here represent grants reported in the calendar year 2022 from participating foundations.

FIGURE 7: DRIVE ELECTRIC CAMPAIGN GLOBAL GRANTMAKING OVERVIEW IN 2022

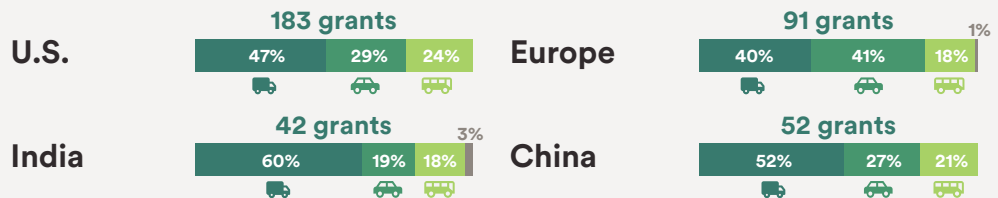


420

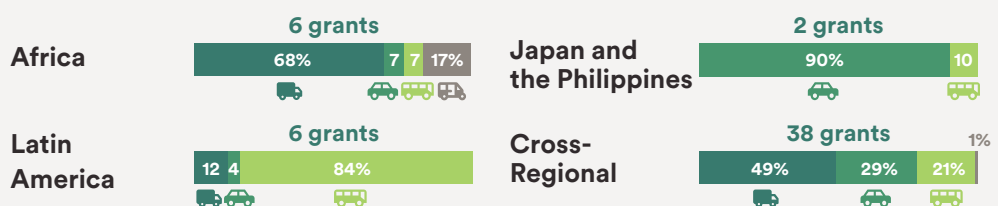
grants were made to support work in key areas

Drive Electric reviewed and analyzed grants data as provided by participating foundation partners, including grants made directly by ClimateWorks Foundation, regional foundations, and aligned donors and foundations that have agreed to share their grants data with ClimateWorks. This data is not exhaustive of all Campaign grant-making, and does not capture all investments in the Campaign to date.

Major geographies



Additional geographies



Breakthroughs: January - December 2022

In 2022, our partners contributed to and supported incredible outcomes around the world. Here we summarize and highlight key drivers of progress from national policies to regional advancements and more. We also track the full scope of progress, from policy wins and new stakeholders joining the journey to 100% electric road transportation, to the subsequent market responses in the share of electric cars, trucks, and buses in key markets.

After a four-year lull, the U.S. re-enters the EV race with breakthrough state and national climate policies, unlocking major industry investments

Drive Electric partners informed ambitious Federal incentives and State regulations to electrify all forms of road transportation

Thanks to years of coalition-building and groundwork, Drive Electric partners were able to seize the opportunity and make transportation electrification a key component of the landmark Inflation Reduction Act (IRA) and the earlier Infrastructure Investment and Jobs Act (IIJA). In total, transportation-related line items in the IRA and IIJA add up to more than \$100 billion of investment in tax credits, grants, and loans. Key provisions in the IRA include the Commercial Clean Vehicle Credit which aids private fleets and leasing consumers; grants to states, local governments, and nonprofit school associations to replace buses and heavy-duty vehicles with zero-emission models; \$2 billion in competitive grants for domestic manufacturers to retool existing auto manufacturing facilities to manufacture clean vehicles and batteries; the Used EV Vehicle Credit, which works to develop a secondary market for clean vehicles; and an extended Clean Vehicle Credit. These investments completely change the calculus of the economic benefits and deployment timeline for electric cars, trucks, and buses.

Even before President Biden took office, U.S. partners were laying the groundwork for robust EV investments with Congress. After years of education, strategic communications, and coalition sign-on letters, the IRA included nearly all the provisions partners had been advocating for. Drive Electric partners provided critical input to help shape the IRA and IIJA, including, for example, Chispa informing heavy duty incentives, the Moving Forward Network informing zero-emission truck and ports programs, the Union of Concerned Scientists (UCS) and many others informing the implementation of IIJA charging programs, the International Council on Clean Transportation (ICCT) providing technical analysis on EV costs for the design of the IRA's clean vehicles tax credits, and Energy Foundation partners convening monthly calls reaching nearly 100 organizations to provide information and share strategies.

The IRA is an encouraging political breakthrough because it puts the U.S. back in the manufacturing game for EVs, batteries, and related components. It introduced new and notable programs for domestic sourcing requirements, which have ignited national and international discussions, as well as increased investment as countries advance their own programs of domestic industrial investment to capture the growing global market.

Just weeks after the IRA was finalized, another major policy advanced as California set 2035 as the official end date for sales of new fossil-fueled cars, with the adoption of the Advanced Clean Cars II (ACCII) regulation. A strong coalition

Drive Electric partners were able to seize the opportunity and make transportation electrification a key component of the landmark Inflation Reduction Act (IRA) and the earlier Infrastructure Investment and Jobs Act (IIJA).

including more than 20 partners and dozens of local groups supported the development of ACCII. Partners held bi-weekly meetings and their advocacy significantly increased the near-term ambition of the rule, with the final standards requiring that 35% of vehicles sold in California be zero-emission by 2026 — resulting in up to 1.5 million more EVs on the road by 2030 than what was outlined in the initial proposal. The policy will deliver tens of billions of dollars in health benefits and improve millions of lives in California by making the air cleaner while setting a path for other states to adopt similar plans. By the end of 2022, Oregon, Washington, and Vermont had already joined California in adopting this ambitious policy.

To meet climate goals, more effort will still be needed to decarbonize U.S. road transportation. While the IRA and IIJA will have a significant climate impact and save American families money, the latest analysis from ICCT and Energy Innovation shows that further regulatory action is needed to meet the U.S. and global climate goals. Fortunately, if the IRA and IIJA are paired with national regulations that mirror the policies such as the ACCII and ACT for trucks (see next section), the U.S. can reach its decarbonization targets.



Photo: Gilbert Rosas via the Electric School Bus Initiative



China soars in EV sales and manufacturing across cars, trucks, buses, 2-wheelers

Despite an overall decline in car sales, China saw record-shattering EV sales following significant policies on air pollution and targets for new energy vehicles

The Chinese market has been leading on EVs, and 2022 was no exception as the proportion of electric vehicles raced ahead of Europe. The latest data show that EV sales grew for each mode, reaching nearly 28% cars in 2022, as well as 32% buses, 6% trucks, and 1.7% medium- and heavy-duty trucks in 2021 (see Fig. 6, p. 8).

China's national carbon peaking plan for 2030, released at the end of 2021, proposed several targets for transportation, including to peak the oil consumption of road vehicles and to reduce the carbon intensity of commercial vehicles by 9.5% compared to 2020 -- and electric transport is key to meeting these targets. The carbon peaking plan policy confirms for the first time that new energy vehicles (NEVs), which include plug-in battery electric and hydrogen fuel-cell electric models, should account for at least 40% of sales in 2030. These targets, along with the continuation of regulatory and fiscal incentives have enabled sustained growth in NEV sales.

Government agencies advanced other important new policies in 2022 that will drive zero-emission vehicles for all segments. The Ministry of Industry and Information Technology significantly raised zero-emission vehicle requirements for cars and commercial vehicles, with the passenger car target translating into a 25-31% NEV market share in 2025. The second phase of the National Clean Diesel Action Plan requires that 70-80% of bulk freight in key industries be transported by low-carbon modes by 2025, and the Carbon-Pollution Co-Control Plan issued jointly in mid-June by several ministries requires a 50% NEV sales share in key pollution control regions by 2030. Moreover, the Ministry of Ecology and Environment ranked the environmental performance of manufacturers like steel, power plants, and cement, including their cargo transportation, which could serve as a basis for limiting emissions from these facilities during high-pollution days. Such policies drive these producers to deploy electric trucks for their cargo transportation.

Drive Electric partners have supported work in China via extensive technical support and research. For example, Energy Foundation China (EFC) engaged key think tanks involved in decision-making around the transition to EVs. They supported policy research on the benefits of full vehicle electrification, built alignment on the urgency and necessity of transport carbon emissions peaking before 2030, and showed the impact zero-emission road transport has on improving carbon emissions, air quality, and the economy. EFC also funded policy research that highlighted the importance of continuing fiscal and regulatory incentives, especially the vehicle purchase tax exemption that had been set to expire in 2022, and the need to keep tightening tailpipe pollution and fuel efficiency vehicle standards.



Photo: Haugenzhays Zhang

Europe becomes the first continent to advance regulations to ensure the end of polluting vehicles

When fully implemented, the EU policy will shift new car and van sales to nearly 100% zero-emission vehicles by 2035

In 2022 we saw major progress toward 100% zero-emission sales of cars and vans by 2035 across Europe, as the European Commission's "Fit for 55" CO₂ standard was passed by the European Parliament in June and agreed to by European governments in October.

This policy progress required a high degree of coordination with an extended network and national-level research and advocacy made possible with support from Drive Electric partners. For example, Transport & Environment engaged in direct advocacy with policymakers and published timely studies, op-eds, and social media on the EV market and on the multitude of benefits of shifting to EVs including improved health, fuel savings, and jobs. More than 50 partner organizations from all member states have made important contributions with press articles, studies, events, and discussions to ensure that a majority of the Parliament and the Council have signaled approval for the legislative package. The ICCT provided key research and technical support to policymakers, including in France, where representatives of the ZEV Transition Council held one-on-one meetings with government officials during France's 2022 EU Council presidency.

"This is an historic moment in the transition towards zero-emission road transport, given that in the weeks leading up to this vote, the automotive and oil industry lobbied just enough Members of European Parliament to potentially tip the balance in favor of a [weaker target]," noted one partner. "A coordinated final push from key grantees, national partners, and European Climate Foundation country and communications colleagues defeated these efforts."

The ripple effect of the policy is already influencing global markets. Setting these standards in the EU is critical because it immediately impacts 27 markets, sets an example for other countries around the world, and provides a pathway for others to follow as they pursue their own climate policies. The policy could help shift South Africa's automotive sector, for example, as their key export market is the EU.

Going forward, there are windows where oppositional interests are likely to try to weaken and delay the shift. For example, an unprecedented intervention in March 2023 during the final approval process of the CO₂ standards threatened to derail this historic victory. Despite a majority of member states having pledged at an earlier stage to approve the standards, the German liberal party — a junior partner in the German coalition government, along with Italy and Poland — threatened to vote down the entire legislation unless they secured support for use of e-fuels for combustion vehicles past 2035. Drive Electric partners sprang into action, and the final compromise text, while not perfect, has now been approved, retaining nearly all of the benefits of the original proposal.

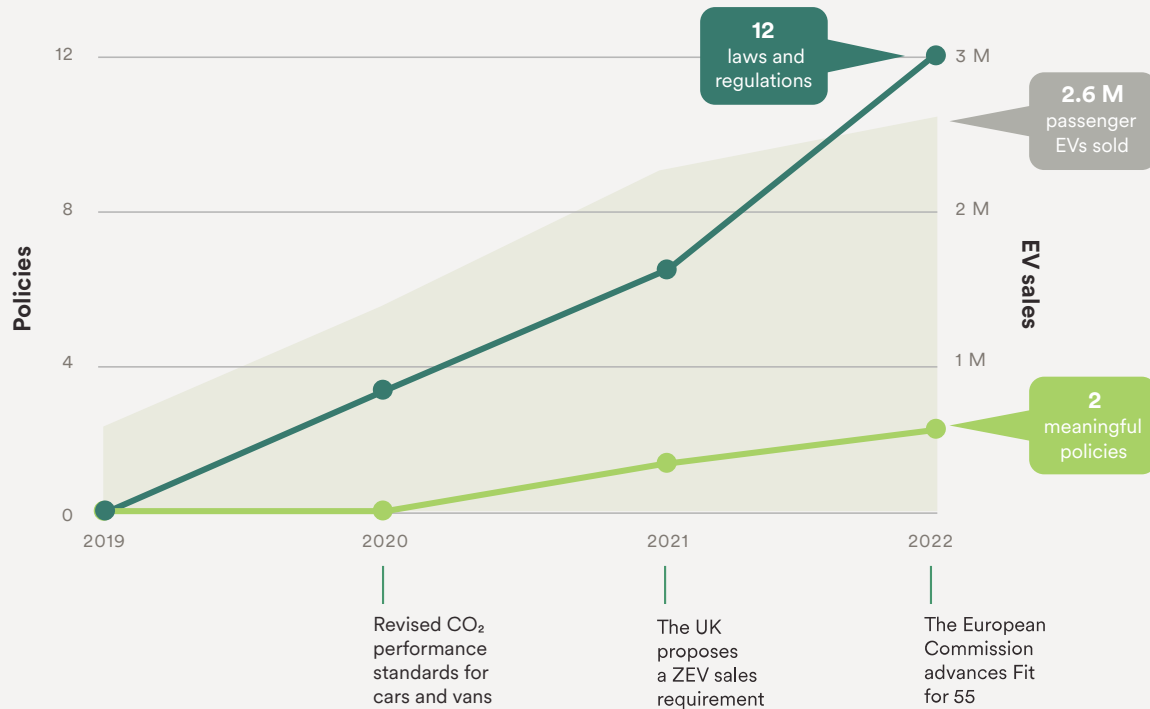
Such developments demonstrate the necessity of Drive Electric partners sustaining pressure and protecting wins as opposition rises. Oppositional interests are also expected to resurface during the review period for these standards in 2026.

"This is groundbreaking, no other major market worldwide has decided yet on a binding regulation that will enforce 100% fully electric vehicles by 2035."

Drive Electric Campaign partner

But celebration is still warranted. The transition to 100% zero-emission vehicles is the core goal of the global strategy, and the EU is extremely close to realizing that goal. “This is groundbreaking, no other major market worldwide has decided yet on a binding regulation that will enforce 100% fully electric vehicles by 2035,” one partner observed at the time of the vote. Drive Electric and its European partners are now gearing up to ensure a similar outcome is achieved for medium- and heavy-duty vehicles.

FIGURE 8: PASSENGER EV POLICIES AND SALES IN EUROPE



Meaningful policies refer to government acts designed to make a significant and positive impact on the EV market. Laws and regulations are those passed by an elected body to require an increased share of EVs.

Policy counts for this figure are cumulative for European passenger car policies from 2019. Passenger EV sales are annual and include BEVs and PHEVs.

Source: 2023 Drive Electric partners survey, IEA road database, ICCT sales, EV Volumes, Schmidt Automotive Research Europe 2022 sales. Passenger sales for 2022 are an estimate. (This chart is partially based on the historical data developed by the International Energy Agency, 2023 as part of its Transport project, all rights reserved, but the resulting chart has been prepared by ClimateWorks and does not necessarily reflect the views of the International Energy Agency.)

Clean trucks and buses gain ground with regional policies and global ambition

Communities and clean air advocates continue to push for an end to the disproportionate impacts of dirty diesel pollution

Trucks, while fewer in number, use a disproportionate amount of fuel and contribute the majority of transportation-related pollution that harms human health. For example, in the U.S., medium- and heavy-duty trucks make up just 5% of vehicles on the road but account for nearly a quarter of greenhouse gas emissions and a majority of particulate and nitrous oxide pollution from transportation; globally, these trucks consume more than a third of on-road oil consumption.

In 2022, research from Drive Electric partners around the world found that electric trucks, in addition to their climate and health benefits, increasingly make economic sense. For instance, experts at the University of California (UC) conclude that on average, all electric truck categories will have a 10-20% lower total cost of ownership on a per-mile basis than their diesel counterparts with savings rising over time. Another UC study showed that stronger regulations at the state and federal level supporting a transition to a 100% electric truck fleet could translate into \$1 trillion of savings to operators by 2050, and that electric freight trucks will provide benefits wherever they are deployed at scale.

A recent study by NITI Aayog and RMI, “Transforming Trucking in India,” found that “road freight accounts for more than 25 percent of annual oil imports. Zero emission truck (ZET) adoption can avoid 838 billion liters of diesel consumption cumulatively by 2050, resulting in upward of \$1.5 trillion of reduced oil expenditures.” Further, the report showed that “widespread ZET adoption can reduce associated trucking particulate matter and nitrous oxide pollution by nearly 40 percent by 2050, substantially improving air quality.” Lawrence Berkeley National Laboratory similarly noted in research released in October 2022 that “recent dramatic improvements in battery costs and energy density have created opportunities for truck electrification that were seldom thought possible just a few years ago.” To date, urban freight is undergoing the fastest transition, with many new manufacturers coming into the market, and delivery fleets making commitments to and investments in the shift to electric mobility (see Global Platforms on p. 4).

Beyond making the economic rationale, Drive Electric partners are raising ambition and policy action through the Global Commercial Vehicle Drive to Zero and its Global Memorandum of Understanding on Zero-Emission Medium- and Heavy-Duty Vehicles (Global MOU). The MOU had a year of historic momentum, adding 21 new government signatories in 2022 (for a total of 27 signatory nations, along with more than 75 endorsers from subnational governments and the private sector). The addition of the United States as a Global MOU signatory marked a significant milestone, committing the world’s second-biggest emitter to a 2040 target for 100% clean trucks and buses. New signatories further expanded the geographic reach of the MOU, from Ukraine to Uruguay, Switzerland, and four Caribbean island nations. This expansion now creates a diverse set of peer nations that can both support and challenge each other, and help recruit others.

As it is with cars, smart government policies are the driving force of an accelerated market transformation for electric trucks. By the end of 2022, the Advanced Clean Truck (ACT) policy, which requires an increasing proportion of zero-emission truck sales over several years, had been adopted in six U.S. states accounting for an estimated 20% of the U.S.

“Heavy-duty vehicles are the main sources of harmful transport pollutants in our region [of Latin America]. Tackling this segment is crucial to meeting our climate goals but also to reduce the health burden of the sector.”

Drive Electric Campaign partner

truck market. Partners including the Moving Forward Network, Union of Concerned Scientists, Sierra Club Foundation, Ceres, National Resources Defense Council, CALSTART, and many others helped to secure ACT wins, bringing significant climate and health benefits, especially to the most impacted communities. According to a 2022 report from the American Lung Association, U.S. counties that are home to the nation’s most heavily impacted truck routes could see \$735 billion in public health benefits in the transition to zero-emission trucking.

In Europe, a key development in 2022 was the Eurovignette, a road charging reform legislation that incentivizes infrastructure for zero-emission trucks by providing discounts of at least 50% on distance-based road tolls. Transport & Environment had been working to build support for many years, and the European Clean Trucking Alliance – whose members hold a collective road fleet of 380,000 vehicles and 2.3 million employees – joined truck makers and green organizations across Europe to urge members of the European Parliament to support the reform.

Clean truck sales continue to be strongest in China, where expanded national and local policies increased electric truck sales to 6% by end of 2021. The latest policies will help drive the market even further, as the 14th Five-Year Plan for Green Transport includes a requirement that 20% of urban delivery trucks be electric by 2025. Our partners are also working toward increased uptake of zero-emission trucks in Latin America, with several trial fleets in Chile, Columbia, and Brazil. As one Drive Electric partner recently noted, “heavy-duty vehicles are the main sources of harmful transport pollutants in our region. Tackling this segment is crucial to meeting our climate goals but also to reduce the health burden of the sector.”



Photo: Courtesy of Drive Electric Campaign partners

Policies shape increased battery production and greater sustainability

Partners celebrate groundbreaking EU policy and increasing global industry commitments

For a stable climate, it's essential that we rapidly shift from fossil-fuel powered transportation to electric vehicles that run on the growing sources of renewable energy. As the technology stands today, battery-electric vehicles can dramatically reduce lifetime carbon emissions compared to fossil-fuel powered combustion vehicles, even when accounting for mining, battery production, and electricity production. Moreover, the batteries themselves have an advantage over petrol and diesel in that they can be reused and/or recycled at the end of their usable life. With the help of Drive Electric partners, government policy is being adopted that further improves battery sustainability while increasing the benefits of the transition.

A new battery law in the EU, for example, is a first-of-its-kind battery sustainability policy that regulates the battery value chain, including for electric vehicles. The policy sets carbon footprint rules for batteries, ensures their key materials are recycled, sets transparency and due diligence rules on key metals, and introduces a battery passport for data disclosure. The policy also sets requirements for batteries to contain an increasing percentage of recycled minerals. Research supported by Drive Electric has shown that recycling could eventually supply up to 55% of the minerals needed for EV production. The new law will also help to ensure that companies that produce batteries for use in the EU respect human rights, including Indigenous Peoples' rights, in their sourcing of key minerals. Drive Electric partners were very engaged on this policy, including the Environmental Coalition on Standards, Transport & Environment, and Environmental Action Germany (DUH), which led to an ambitious negotiating position for the European Parliament. The resulting policy package is now a model for sustainable battery regulations globally.

In addition to the EU battery policy, partners are providing additional paths to improve battery supply chains. For example, the Initiative for Responsible Mining Assurance (IRMA) has seen a growing number of electric vehicle producers join including BMW, Ford, General Motors, Mercedes-Benz, Tesla, and Volkswagen. The IRMA Standard for Responsible Mining is a one-of-a-kind standard that measures global mine sites against a set of best practices developed over a decade through multi-stakeholder dialogue, and IRMA is also a key stakeholder in helping governments develop regulations for improved mining practices.

In 2022, India released several draft policies focused on electric vehicle battery supply, including on recycling, battery swapping, and a \$2.5 billion government investment program to incentivize domestic battery manufacturing and innovation. To help fill research gaps, several Drive Electric partners provided technical assistance on these policies to NITI Aayog, the government think tank. The new battery policy requires collection for recycling or refurbishment, while new rules for battery swapping address key technical, regulatory, institutional, and financing challenges that will support large-scale adoption.

The latter half of the year saw a surge of interest in the U.S. as battery supply chain investments made headlines after passage of the IRA and IIJA. Some \$73 billion in planned U.S. battery manufacturing plants were announced in 2022, according to our partner Atlas Public Policy, with much of the activity occurring after passage of the IRA. The Department of Energy projects that U.S. battery manufacturing will be 20 times greater in 2030 than in 2021.



Fast Clips: Drive Electric Campaign global highlights

Beijing and Shanghai municipal governments set sites on accelerated zero-emission pathways with support from Energy Foundation China. Beijing adopted a very ambitious EV target of 2 million by 2025, and established a phased plan toward a zero-emission zone that requires nearly all buses, taxis, and light-duty trucks to be electric by 2025. Shanghai shifted its free license plate allowance, removing plug-in hybrids and only allowing fully zero-emissions vehicles. The city also adopted a target of 40% of cars on the road to be electric by 2035, with nearly all public service vehicles electric by 2030.

Photo courtesy of Zhang Kaiyv



European cities clear the air by expanding low-emission zones, such as London's Mayor announcing an expansion of the ultra-low emission zone, which has driven a rapid shift from dirty diesels and their asthma-inducing exhaust to cleaner EVs. The Clean Cities Campaign has also been championing this work in Spain, which is set to roll out low-emission zones in roughly 150 municipalities, while C40 Cities worked with Milan to launch a pilot project that uses electric cargo bikes to cover last-mile delivery in the city center.

Photo by Jess Daniels, ClimateWorks Foundation



Governments in central Africa increase support for EVs, deploying fiscal, legal, and policy solutions with support from UNEP, and localized data provided by Clean Technology Hub and Clean Air Initiative Africa. For example, Kenya reduced import taxes for EVs in 2022, while Nigeria released a draft EV Policy Roadmap that outlines enabling conditions and catalysts for further growth, innovation, and climate and social impact. In Uganda, a presidential announcement on the Transition to Electric Vehicles promotes an accelerated shift to e-mobility and is paired with an Energy and EV policy that will establish infrastructure and build local capacity.

Photo by James Wachira



Fast clips: Drive Electric Campaign global highlights

São Paulo signals a shift to 100% zero-emission buses, a powerful market signal given it is one of the largest fleets in Latin America, with more than 13,000 buses. Just ahead of the C40 Cities Summit hosted in Buenos Aires, São Paulo's mayor pledged that by the end of 2024, the city will have at least 2,600 e-buses operating on municipal lines. This follows several years of coordination and support by the ZEBRA Partnership and other partners, and is aligned with the city's Climate Action Plan.

Photo courtesy of ZEBRA



Mexican cities pilot zero-emission, last-mile delivery systems in Mexico City and Monterrey, after a working group of business and government leaders reached an agreement to design and test zero-emission delivery areas. Environmental Defense Fund (EDF) has been supporting business engagement and collaborating with local partners to build this concept and design roadmaps that will reduce pollution in heavy traffic areas.

Photo by Orbon Alija



Chile moves forward with its ambitious Electromobility Strategy from 2021 covering cars, trucks, buses, and off-road machinery – with the goal that key segments shift to 100% zero-emission by 2035. This strategy aligns efforts in Chile leading global markets and is one of the first from an emerging economy to include off road machinery. Partners including Centro de Movilidad Sostenible have engaged with policymakers to secure the effective implementation.

Photo courtesy of Centro de Movilidad Sostenible



Fast clips: Drive Electric Campaign global highlights

EV drivers caravan across 5 borders in Central America with the Ruta Eléctrica Centroamericana, dispelling misconceptions and showing the expanded capability of the charging network in Latin America. More than 10 electric vehicles journeyed through Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama, stopping to charge and discuss the benefits of EVs along the way. The caravan was organized by the Costa Rican EV Association, a DEC partner, and they met government officials in each country - calling for strong EV policies. This tour is the first of its kind in Latin America and was supported by the UNEP MoveToZero campaign, the Latin American Association of Sustainable Mobility (ALAMOS), and the Central American Bank for Economic Integration.

Photo by Jone Orbea



Indonesia supercharges EV transition across multiple modes, with a national policy that will provide incentives for electric cars and two-wheelers, and a new zero-emission fleet mandate for buses in Jakarta. Local partners including Katadata and KPBB have been collaborating with the Institute for Transportation and Development Policy (ITDP) and ICCT to provide technical assistance, share best practices, and support media outreach.

Photo by Lina Fedirko, ClimateWorks Foundation



Delhi backs pollution-free fleets for delivery drivers and more, with a new policy that requires a phased transition to electric models for all 2-, 3-, and 4-wheel vehicles owned or operated by aggregators with fleets over 25, such as ride-hailing, food delivery, and e-commerce businesses. This first of a kind measure in India was supported by several partners who made the case through research, stakeholder convenings, and more.

Photo courtesy of Drive Electric partner



Fast clips: Drive Electric Campaign global highlights

Indian states sweep the EV policy landscape, with almost 33 of 36 states or Union territories having a notified or draft EV policy in place. With a push from the government in the form of National Electric Mobility Mission 2020, today every state in India is striving for a strong EV policy. Drive Electric partners are supporting states to set up EV accelerators to drive the electric mobility campaign in India. Meanwhile, EV sales have increased fourfold in the last two years, with electric two-wheelers showing a steep adoption curve.

Photo courtesy of Drive Electric partner



Shoonya Campaign doubles membership and completes 70 million electric deliveries in Delhi, while continuing to expand their model with public education and engagement about the benefits of zero-emission last-mile deliveries through podcasts, video, and a partnership with the MyGov platform. Shoonya is supported through a partnership with NITI Aayog and RMI India, and completed 40 million electric rides with their growing cohort of 140 companies like fleet owners and mobility providers.

Photo courtesy of Shoonya Campaign






























World's largest coalition for zero-emission transportation launches at COP27, with the Accelerating to Zero Coalition or A2Z Coalition bringing together more than 200 stakeholders that pledged to work together toward all sales of new cars and vans being zero-emission no later than 2035 in leading markets and 2040 globally. The A2Z Coalition builds off the COP26 Zero Emission Vehicles Declaration spearheaded by the UK COP Presidency, the High Level UN Climate Champions, and The Climate Group. To emphasize the importance of such ambition, Drive Electric supported BloombergNEF to produce a Zero-Emission Vehicles Factbook, showing that the ZEV transition is key to ending our dependence on oil and that more commitments are needed to keep our Paris Agreement climate goals within reach.

Photo courtesy of Accelerating to Zero Coalition



Drive Electric Campaign global platforms highlights in 2022

Platform Partner	Mode	Stakeholders	Goal & focus	Members & Signatories
 <p>Accelerating to Zero Coalition (A2Z)</p>			All new cars and van sales zero-emission no later than 2035 in leading markets and globally by 2040.	>200 members with 56 new members in 2022 that included governments (France, Greece, Spain), auto manufacturers, investors/finance, + more
 <p>EV100 and EV100+</p>			Brings together companies leading the EV transition, committing to transition fleet and service contracts to EVs by 2030 and install workplace and customer charging. EV100+ focuses on medium- and heavy-duty vehicles to send a strong demand signal for zero-emission vehicles.	EV100 has 127 members with 10 new members in 2022 including Virgin Media O2, Barclays PLC, The Estée Lauder Companies Inc., EV100+ launched in 2022 with 5 founding members: A.P. Moller – Maersk, GeoPost/DPDgroup, Ingka Group (IKEA), JSW Steel Limited, Unilever
 <p>Global Commercial Drive to Zero</p>			Make zero-emission commercial trucks commercially viable by 2025 and dominant by 2040.	170 members with 21 new signatories to the Global MOU in 2022, including governments (U.S., Ukraine, Sweden, Uruguay, and more), fleets, and a utility
 <p>C40 CITIES</p>			Supports cities to procure only zero-emission buses from 2025 and ensure a major area of the city is zero-emission by 2030	63 city signatories, with 2 new industry members in 2022 (Scania and Volvo)
 <p>The International Zero-Emission Vehicle Alliance, iZEVA</p>			International government collaboration to achieve 100% zero-emission passenger vehicle sales as quickly as possible as and no later than 2050.	25 government signatories, with 5 new members including New Zealand, observers Austria, Switzerland, Portugal, Sweden
 <p>UNEP E-Mobility Program</p>			Support low- and middle-income countries with the shift from fossil fuel to electric vehicles.	50 low- and middle-income countries are supported with the introduction and shift to electric mobility. The programs also works at a regional level with communities in Africa, Asia & the Pacific, Central and Eastern Europe, West Asia and Middle East, and Latin America & the Caribbean

- | | |
|--|--|
|  Cars |  Government |
|  Vans |  Business |
|  Medium/Heavy-duty Trucks |  Finance |
|  Buses |  NGO |
|  2- and 3- wheelers | |

Challenges on the journey

The success of electric vehicles in major markets can feed the perception that the transition to 100% electric transportation is inevitable, and that supportive government policies are no longer needed. We wish this were true. Unfortunately, the electric mobility market is still nascent, unevenly distributed, and facing significant barriers even in leading markets. Challenges remain, such as higher upfront cost of vehicles in some markets, availability and user experience of charging infrastructure, EV model availability, and a well-resourced opposition.

Successful implementation — and expansion — of ambitious policies will need ongoing technical expertise, support, and coalition work to fully realize the potential and to shift the global market at the speed the climate crisis requires. The true impact and accessibility of these policies will be determined by how we collectively expand and implement them, including through increased adoption, effective enforcement, and targeted incentives.

As our partners work to solidify durable policies, industry players accustomed to the profits from fossil fuels and combustion continue to push to roll back hard-won gains. They are increasingly sowing misinformation, opposing and stalling key policies, and attempting to thwart forward progress. Look no further than Europe, where “the [fossil] fuel industry is going all-in to push for the inclusion of e-fuels into this [Fit for 55] regulation. It is their last chance,” observed a Drive Electric partner in Europe. As discussed above, efforts to water down Europe’s commitment to a zero-emission future came to a head as Germany succeeded in temporarily delaying a final vote on the rule.

Fortunately, our partners are growing in number and power — the coalitions driving this change continue to expand — with new partners focused on improving public health, the economy, and a just transition. Drive Electric’s collaborative approach means that around the world our partners are learning from each other to address emerging challenges and opportunities.

“The [fossil] fuel industry is going all-in to push for the inclusion of e-fuels into this [Fit for 55] regulation. It is their last chance”

Drive Electric Campaign partner



Looking ahead

This past year has seen exciting progress around the world advancing the transition to electric transportation. We achieved our goal for EVs reaching 15% average new car sales in our key markets four years early, with the highest percentage occurring in those markets where our partners have secured commitments and key policies. This is a clear signal that our approach is working. As such, we are increasingly confident that through the continued work of the Drive Electric Campaign partners, we can reach our goal of a global tipping point for all of road transport in the next four years — leading to 100% electric road transportation in time to save the climate. That said, we still have much work to do.

We know that in the decades leading up to 2050, a vast majority of the world's population growth — and expected travel demand growth— is forecast to occur in emerging markets. Through our discussions and work with partners on the ground, we have found that many countries are absolutely ready for, and want, this shift sooner, and there are impressive developments already underway.

However, given the strength and inertia of incumbent oil, gas, and combustion vehicle interests, the gap in EV uptake grows wider. According to BNEF, without additional effort, the gap between EV adoption in leading markets and emerging markets will grow from less than 5% today to over 45% by 2040. This leads to real, daily differences in lives around the world, as well as in the pace and ability to meet our goals for a stable climate and to do so equitably. That is why in 2022, Drive Electric began to expand our strategy and network of partners to invest in accelerating the transition to electric mobility in emerging markets, including through the launch of our [LEAP Fund](#) with 10 partners in Latin America, Africa, and Southeast Asia.

We are also increasingly turning our attention and resources to increase ambition for medium- and heavy-duty trucks, which are the second biggest source of road transport greenhouse emissions globally, and often one of the largest sources of local pollution that directly contributes to poor air quality. In 2022, we began to see growing momentum toward clean trucks, and in the next two years there are a number of key policy windows opening that could catalyze this shift.

The past year's successes and challenges have made it clear that with sustained support from philanthropy, we can steer the course toward the clean, zero-emission transportation future we need. We have made tremendous progress, but there is no time to waste. We are, as always, so grateful to have such a powerful community of supporters, partners, and experts all working toward this audacious goal together.



Photo: James Wachira

Drive Electric is made possible through the coordinated investment of our philanthropic supporters and Steering Committee, which includes representatives from the Energy Foundation, Energy Foundation China, the European Climate Foundation, Shakti Sustainable Energy Foundation, ClimateWorks Foundation, and several Drive Electric foundation partners. Drive Electric fosters collaboration across regions and strategies, which accelerates ambition in this important work. By aligning our community toward shared goals, we seek to end the polluting tailpipe and deliver massive benefits to the climate, health, and the economy.

Drive Electric Campaign Steering Committee



Learn more at www.DriveElectricCampaign.org

 [@Drive_Electric_](https://twitter.com/Drive_Electric)

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