# ROADMAP TO 2030

## Enabling a Global Transition to Zero Emission Vehicles

**2024 UPDATE**

ZEV TRANSITION COUNCIL

International Assistance Taskforce

## THE ZEV TRANSITION COUNCIL (ZEVTC)

Launched in 2020, the ZEVTC is a political dialogue that convenes ministers and representatives from most of the world's largest and most progressive automotive markets to collectively address some of the key challenges in the transition to ZEVs. This includes work to strengthen international support for a truly global transition.

## THE ZEVTC INTERNATIONAL ASSISTANCE TASKFORCE (IAT)

Convening global technical and financial support providers and experts as well as governments, the IAT was established in 2022 to strengthen coordination of international development assistance by providing a platform for dialogue, knowledge exchange, and collaboration.

## THE BREAKTHROUGH AGENDA

Launched by world leaders at COP26, the Breakthrough Agenda is an international collaboration framework for countries, businesses, and civil society to join up and strengthen their actions across key emitting sectors, including road transport.

Cover Photo: Electric-powered auto-rickshaws in Kerala, India. *Photo via Getty Images.*

# EXECUTIVE SUMMARY

**At COP28, the outcome of the first Global Stocktake under the Paris Agreement called for accelerating the reduction of emissions from road transport — the single largest oil consuming sector today**[1] — as well as a doubling of the global average rate of energy efficiency improvements by 2030.[2] With electric vehicles (EVs) being two- to four-times more efficient than current internal combustion engine vehicles,[3] the switch to EVs (taken with the switch to solar photovoltaics) could provide one-third of the emissions reductions needed to meet the energy efficiency target by 2030.[4]

**In this context, the Global Zero Emission Vehicles Transition Roadmap[5] to 2030 was launched** at COP28 to outline the collective actions participants[6] intend to take with wider international partners to accelerate the transition to zero-emission vehicles (ZEVs[7]) in emerging markets and developing economies (EMDEs[8]). These actions are intended to help make ZEVs the most affordable, accessible, and attractive option in all regions by 2030. As the first annual update of the Roadmap, the following provides an overview of the progress made in 2024, as well as further actions we intend to take forward from 2025.

**The Roadmap recognises that current global ZEV uptake is still not enough to achieve the Paris Agreement's global temperature goal,** with the entrenchment of a multi-tiered global auto market — which sees some countries, particularly EMDEs, at risk of being left behind in the transition to ZEVs — continuing to present a significant risk.[9] Without additional ZEV policies[10] and stronger regional and international coordination, including with the energy sector to ensure vehicles are powered by renewable energy,[11] greenhouse gas emissions will continue to grow over the coming decades.

**This is not a forgone conclusion, however, as strong progress is being seen in some regions.** For example, there has been rapid electrification of two- and three-wheelers in South and Southeast Asia and of buses in India and Latin America — much of which has been supported and enabled by the organisations and initiatives named in the Roadmap.

**Evidence shows the benefits of an accelerated transition to ZEVs in EMDEs could be extensive.**[12] This includes improved air quality from reductions of tailpipe particulate matter and nitrogen oxide emissions by nearly 67%;[13] a reduction of $CO_2$ emissions in EMDEs by about 69% (in 2050 under an accelerated transition scenario compared with a business-as-usual 2050 scenario);[14] the avoidance of more than 4,400 million barrels of oil by 2050, almost equivalent to the total consumption in EMDEs in 2023;[15] and the creation of green jobs.[16]

**To make these benefits a reality, strong progress was made in 2024 to address the Roadmap's five strategic challenges, with further work planned from 2025.**

1. **To build capacity across EMDEs to develop and implement policy action,** the ZEV Rapid Response Facility's technical offer was expanded to more EMDEs, and pilots were launched for both the Country Cluster Initiative and Training Programme. In 2025, these pilots will be scaled, and the Twinning Capacity Building Programme and Roadmap's online platform will be launched — all as part of a new Global Technical Assistance Platform (TAP).
2. **To improve access to and scale finance**, existing funds and mechanisms were replenished and grown, with US$ billions in support being provided to EMDEs. In addition, the Collective for Clean Transport Finance convened its first annual investors' roundtable to match projects with finance. In 2025, in addition to expanding the ZEV Transition Council (ZEVTC) Country Partnership with India and launching new partnerships, the new Global Demand Aggregation Platform (GDAP) will be implemented to help scale up ZEV fleets in EMDEs.
3. **To increase the availability of ZEVs in EMDEs**, support for developing supply side regulations was provided across multiple programmes. In addition, the Global Electric Bus Aggregation Framework was announced as a flagship project under the GDAP, and the ZEV Emerging Markets Initiative's India Electric Freight Demand Aggregation Framework, another GDAP flagship project, was expanded and replicated in more markets. From 2025, as well as starting the implementation of both flagship projects, investment opportunities for ZEV-related manufacturing in EMDEs will be identified and technical support for importer countries will be ramped up.
4. **To accelerate charging infrastructure roll-out**, the ZEVWISE Coalition was announced, alongside their plans to advance the development of at least ten green corridors by 2026. A new 'harmonised pathway to deploying road transport charging infrastructure' was also published to assist countries with charging infrastructure strategies. From 2025, a new ZEVTC Global Infrastructure Policy Blueprint for EMDEs will be launched, coordination with the energy sector will be further enhanced, and more EMDEs will be invited to participate in the ZEVTC Charging Infrastructure Taskforce.
5. **To improve capabilities around the lifecycle management of ZEVs, EVs, and battery components**, UNEP's Global Electric Mobility Programme developed a new component on end-of-life EV batteries and launched multiple technical resources for countries, including under the TUMI Electric Bus Mission. From 2025, the TAP will support countries in defining and scaling up recycling standards, as well as identify opportunities to develop and coordinate on international standards for recycling, battery performance, and training for those interacting with end-of-life batteries.

**From 2025, a new strategic challenge — the promotion of a resilient and just transition in the road transport sector — will be addressed.** Examples of planned activities include exploring options to launch EV Centres of Excellence and Skilling Centres in EMDEs to support greater and more equitable access to safe and decent work; enhancing social dialogue and stakeholder engagement to ensure populations impacted by the transition are included in the process of change; identifying and addressing key data gaps; providing capacity building training, including on Labour Impact Assessments; and supporting local EV entrepreneurship and business opportunities. Informal transport[17] and gender equality will be key considerations throughout.

**The Roadmap continues to be shaped extensively by the unique experiences of many types of EMDE countries** throughout the work of the ZEVTC and partners over the last several years. Developed by the world-leading experts and initiatives of the ZEVTC International Assistance Taskforce (IAT), the Roadmap also continues to be informed by the Breakthrough Agenda's annual recommendations.[18]

**To deliver Roadmap actions to 2030, a Global ZEV Transition Delivery Framework is also being launched with implementation starting from 2025.** Developed by the ZEVTC and IAT, the Framework will provide an overarching governance and delivery structure to enhance cross-sectoral coordination and collaboration to ensure the international community can respond more quickly to the needs of EMDE countries. Building on and complementing existing structures and initiatives, the Framework will provide a centre of gravity for ZEV-related activities in the international assistance space.

**The next annual update of the Roadmap, to be published at COP30 in 2025**, will provide delivery updates as well as outline new actions that we intend to take forward to continue strengthening support for EMDE countries this decade.


Electric taxi charging in Mexico City. *Photo via Shutterstock.*

# State of the Transition

**The transition to ZEVs is accelerating, driven by a range of factors that include $CO_2$ mitigation policies such as stricter emissions standards and increased investments in EV and battery manufacturing, industrial development policies, concerns over air pollution and public health, and advancements in EV technologies.** In 2023, over 14 million electric passenger cars (3.5 million more than in 2022) were sold globally, representing 18% of all car sales (up from 14% in 2022).[19] In terms of oil use, this led to 1 million barrels per day being avoided (up from 0.7 million in 2022).[20] This is equivalent to nearly 2.3% of the total on-road vehicle oil consumption per day across the world in 2023.[21]

However, despite positive progress, analysis shows that the current pace of the global ZEV uptake is still not sufficient to achieve the Paris Agreement's global temperature goal.[22] In EMDEs, where the pace and nature of the transition often differs from high-income countries, providing adequate and targeted support is, and will continue to be, crucial — particularly support that reflects local contexts and needs but remains aligned with global climate targets.

EMDEs account for nearly a quarter of light-duty vehicle sales and one-third of all vehicle sales globally.[23] Recent evidence shows that the ZEV transition is no longer a phenomenon limited to China and high-income countries.[24] Particularly in places where there has been increased availability of low-cost EVs, such as in Brazil, India, Thailand, and Türkiye, the transition is progressing rapidly.[25] However, the transition is not uniform across all EMDEs, and is also progressing at varying speeds across different vehicle segments. For example:

- As of June 2024, year-to-date, EMDEs (excluding China) accounted for only 5.4% of global sales of zero-emission light-duty vehicles, compared with 90% of sales in the top six leading markets.[26] More than 74% of new zero-emission light-duty vehicles in EMDEs were sold in just seven countries (Figure 1). This can be attributed, in part, to low availability of low-cost options in the electric car segment.
- Within the medium- and heavy-duty vehicle segments, there has been some encouraging progress on electric buses (e-buses). Latin American cities, such as Bogota and Santiago, have deployed around 6,500 e-buses.[27] The Government of India launched the PM e-Bus Seva

Scheme in 2023, providing US$2.4 billion to deploy and operate 10,000 e-buses across up to 169 eligible cities.[28] India also launched its National Electric Bus Program in 2022, with the aim of deploying 50,000 e-buses by 2027.[29] Projects to electrify bus fleets have also been launched across multiple countries, including those in Mauritius and the Seychelles supported by UNDP[30] and in nearly 20 countries under UNEP's Global Electric Mobility Programme.

- Some countries are focusing on light and affordable transport modes — such as 2-wheelers (2W), 3-wheelers (3W) and micro cars — as promising segments for quick transition due to their resource efficiency, availability, lower capital costs, and lower power demand. Electrification across these segments continues to gain significant momentum in many EMDEs, particularly in China and India, and in countries that are members of the Association of Southeast Asian Nations (ASEAN). In India, the world's second-largest electric 2W market, 880,000 electric 2Ws were sold in 2023, a 40% growth over 2022, and 8% of overall 2W and 3W sales were electric.[31] Approximately 380,000 electric 2Ws were sold in ASEAN countries in 2023, of which 250,000 were in Vietnam, the leader within ASEAN countries in that vehicle segment with a 9% electric share of 2W sales.[32] India also became the biggest electric 3W market in the world in 2023 with over 580,000 sales, a 65% increase over 2022.[33] Whilst Africa currently has a lower electric adoption rate, a recent UNEP study projects that electric 2Ws and 3Ws could comprise 71% of the overall segments' stock in the region by 2040 — potentially mitigating 95 million tons of $CO_2$ annually.[34] Examples of countries where rapid growth in the use of electric 2Ws is currently being observed in Africa include Kenya, Rwanda, South Africa, and Zambia.
- Within the freight segment, several EMDEs are putting initiatives and mechanisms in place to accelerate the deployment of EVs. For example, in India, the Electric Freight Accelerator for Sustainable Transport (e-FAST) was launched as a platform to facilitate collaboration between

Figure 1. June 2024 year-to-date sales for zero-emission light-duty vehicles and electric buses in EMDEs.

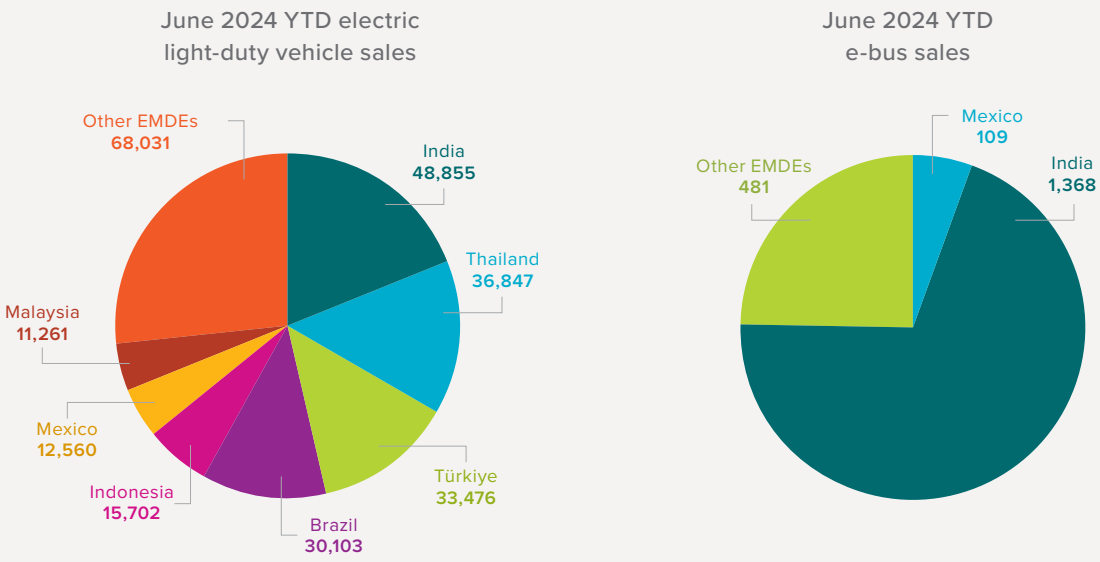
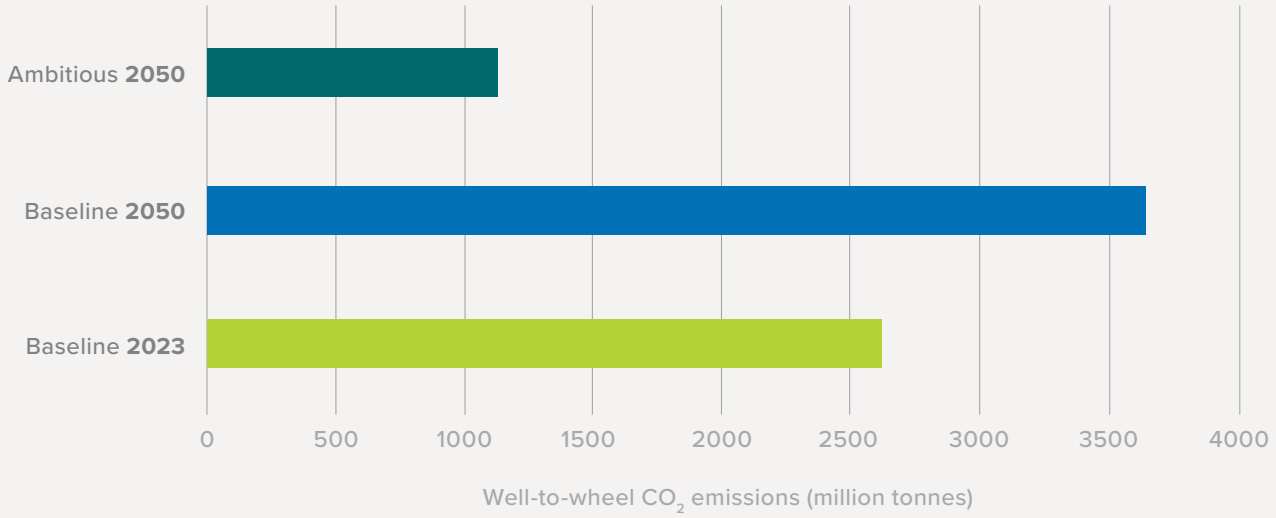


Figure 2. ICCT estimates of 2023 well-to-wheel $CO_2$ emissions (million tonnes per year) from cars, vans, buses, and trucks in EMDEs (excluding China) and projections for 2050 under various policy scenarios.




original equipment manufacturers, government, and other stakeholders for large-scale freight electrification. This spurred 16 major manufacturing and logistics companies to collectively signal market demand for the deployment of 7,750 electric freight vehicles in India by 2030.[36] In 2024, a pilot project was launched in Kenya to demonstrate the viability of zero-emission trucking along Africa's busy Northern Corridor, and further pilots are being planned across the wider region.

Some EMDEs also joined global efforts signaling their ambition to transition to ZEVs — for example, 18 EMDEs signed the COP26 ZEV Declaration on cars and vans, and 17 countries signed the Global Memorandum of Understanding on Zero-Emission Medium- and Heavy-Duty Vehicles (Global MOU).[37] Many of these countries are vehicle manufacturers and oil importers, which the IAT identified[38] as key factors in a country's proactiveness with ZEV-related policy making and implementation.[39]

The positive progress notwithstanding, projections (Figure 2) show that without additional ZEV policies beyond April 2024, well-to-wheel[40] $CO_2$ emissions from cars, vans, buses, and trucks in EMDEs are projected to increase more than 40% by 2050 over 2023 levels.[41] Growth in vehicular stock, driven by economic growth, will play a key role in this increase.

Developing the ZEV ecosystem — including a supportive policy landscape — will be vital for the decoupling of motorization growth and its environmental footprint. In such a scenario, with an accelerated ZEV transition, EMDEs could see almost 69% less $CO_2$ emissions in 2050, compared to the 2050 level without the accelerated transition.[42] Strong coordination with the energy sector will also be vital to fully realise the $CO_2$ emission benefits of the transition to ZEVs.[43]

Although such a transition could also unlock a myriad of co-benefits — such as improvements in air quality, reduced dependence on oil imports, as well as new and diverse employment opportunities — EMDEs face many complex and multifaceted challenges.[44] For example:

- There tends to be low availability of affordable and suitable ZEVs — which can go hand-in-hand with socioeconomic growth and development — which is presently often tied to the import of cheap used internal combustion engine vehicles in many EMDE.
- A robust and interoperable public charging infrastructure network, backed by national technical specifications and regulations, are critical for supporting an accelerated transition. This is particularly the case once the pace of car ownership starts to increase. Charging infrastructure deployment in EMDEs is currently at an early phase and development data is scarce — as of May 2024, approximately 160,364 public charging stations were installed across the 28 EMDEs where data is available. This accounted for only 5.6% of the global stock of public chargers installed.[45]
- The scale and complexity of informal transport[46] in EMDEs can create different challenges for providing state support, access to finance, and attaining economy of scale.
- There can be an absence of national-level standards and regulatory frameworks, which can also impact on industry's appetite to accelerate their ZEV manufacturing and sales.[47]
- There is often a lack of fiscal mechanisms in place to incentivise the growth of the ZEV market.
- There is often also a lack of regulatory and technical service capacity for the lifecycle management of ZEVs and battery components, end-of-life disposal, and battery manufacturing scrap recycling.
- There is often limited ability to access finance, particularly at the levels needed to be transformational. Reasons for this can include a lack of awareness around the finance opportunities available, not having the capabilities to access finance (e.g. by developing bankable projects), and having a lack of an enabling environment for investments to flow at scale.
- Not having a reliable electricity supply and distribution network, which can hinder the transition to ZEVs and the establishment of public charging networks.

Considering these multiple crucial and interrelated factors, accelerating the ZEV transition will require strengthened, integrated efforts to develop a solid infrastructural, regulatory, technical, and financial foundation. This includes a holistic and systemic approach that not only increases the amount of financing available, but also makes support easier to access and have greater coherence. This is in addition to enabling stronger coordination so catalytic change can be effectively targeted throughout the sector. Existing mechanisms,[48] including established initiatives, platforms, and funds, offer significant opportunities to do this whilst fostering dialogue across stakeholders.

**Developing the ZEV ecosystem — including a supportive policy landscape — will be vital for the decoupling of motorization growth and its environmental footprint.**

Overcoming these challenges and other strategic, capacity, political, institutional, and technical barriers, in addition to optimizing existing opportunities, will be key to accelerating the ZEV transition in EMDEs this decade. Delivery partners, financiers, and EMDEs all call for stronger coordination and targeted support so a resilient and just transition can occur that is in the interest of all stakeholders. The following are actions we intend to take forward to help make this a reality.

# Continuing to Accelerate Momentum This Decade

**This section sets out (1) actions achieved in the last year to address the five strategic challenges, as announced in the Roadmap launched at COP28 in 2023, and (2) new actions for delivery from 2025 to address these plus one new strategic challenge.**[49] All Roadmap strategic challenges and activities continue to be informed by the experiences and concerns raised by different types of EMDEs throughout the work of the ZEVTC and wider partners over the last several years. Building on this, the Global ZEV Transition Delivery Framework, described in the final section, will enable even greater and more frequent engagement with EMDEs and wider partners to inform existing and future priorities under the Roadmap.

## ROADMAP TO 2030: CHALLENGES & SOLUTIONS

### 1. Building capacity across EMDEs to develop and implement policy action

a. Launch and operationalise the Global Technical Assistance Platform (TAP)
b. Further scale the ZEV-RRF to enable more agile technical support for EMDEs
c. Triple the size of the Country Cluster Initiative and Training Programme
d. Launch the Twinning Capacity Building Programme
e. Launch the Roadmap's online platform
f. Utilise the Global ZEV Transition Delivery Framework to pool and elevate existing technical resources
g. Further scale the ZEV Island Taskforce

### 2. Improving access to and scaling finance

a. Continue to grow public and private sector finance
b. Launch and operationalise the Global Demand Aggregation Platform (GDAP)
c. Utilise the Global ZEV Transition Delivery Framework to strengthen the coordination of funding across the international provision
d. Convene a roundtable of public and private sector funders to mobilise and coordinate additional finance to address Roadmap actions
e. Develop and launch a tool to track collective levels of public and private sector finance
f. Explore options for launching new Global Facility to Decarbonise Transport (GFDT) regional and sub-regional financing facilities
g. Scale the ZEVTC Country Partnership with India and launch new partnerships by COP30

### 3. Increasing the availability of ZEVs in EMDEs

a. Continue to support EMDEs on supply-side regulations and policies
b. Prepare the GDAP's e-bus and e-truck flagship projects
c. Explore options for establishing GDAP projects across other transport segments
d. Support importer EMDEs under UNEP's Global Electric Mobility Programme
e. Continue to support UNEP's work to convene interested exporter countries
f. Identify opportunities to channel investment for ZEV-related manufacturing in currently under-invested regions
g. Support INTENT's work to disseminate information to more EMDEs on India's experience with mass EV procurement

### 4. Accelerating charging infrastructure roll-out

a. Continue advancing green corridors in the scope of the ZEVWISE Coalitions
b. Launch a ZEVTC Global Infrastructure Policy Blueprint for EMDEs by COP30
c. Continue strengthening the linkages between the ZEV and energy sectors
d. Support new activities under UNEP's Global Electric Mobility Programme on the integration of the power and transport sectors
e. Continue to identify and address key barriers impacting the rapid deployment of charging infrastructure across EMDEs
f. Invite EMDEs to participate in the ZEVTC Charging Infrastructure Taskforce

### 5. Lifecycle management of ZEVs, EVs, and battery components

a. Support the UNEP Global Electric Mobility Programme's new activities on end-of-life EV batteries
b. Consult with and elevate existing initiatives that are leading work to build skills and capacity in EMDEs on the safe reuse and recycling of EV batteries
c. Through the TAP, convene countries to share experiences and learn about defining and scaling up international recycling standards
d. Continue to identify and address the key barriers to embedding effective, safe, and sustainable end-of-life management and recycling capabilities

### 6. Promoting a resilient and just transition In the road transport sector

a. Explore options for launching EV Centres of Excellence and Skilling Centres in EMDEs
b. Support enhanced social dialogue and stakeholder engagement through the Global ZEV Transition Delivery Framework
c. Provide training and capacity building on Labour Impact Assessments through the TAP
d. Identify and address key data gaps to support policy-makers on issues related to the just transition in the road transport sector
e. Embed gender throughout the Global ZEV Transition Delivery Framework
f. Embed informal transport throughout the Global ZEV Transition Delivery Framework
g. Embed considerations regarding the just transition in the ZEVTC Country Partnerships work
h. Support local e-mobility entrepreneurship and business opportunities in EMDEs
i. Provide guidance on opportunities to consider nature and social equity throughout green and multi-modal freight corridors and urban hubs

## 1. Building capacity across EMDEs to develop and implement policy action

As detailed in the COP28-launched Roadmap, developing and implementing strong electric mobility (e-mobility) policy frameworks[50] at the national and sub-national levels enable a faster transition to ZEVs. To support EMDEs with establishing and implementing such frameworks, a breadth of activities were undertaken, in partnership with existing programmes and initiatives, in 2024.

- **The ZEV Rapid Response Facility (ZEV-RRF) was scaled** from 15 EMDE recipients at COP27 in 2022 to the current 27 EMDE recipients — all signatories of the ZEV Declaration and/or the Global MOU — at COP29. Current ZEV-RRF projects include developing a charging infrastructure curriculum in Kenya and a replicable charging infrastructure mapping tool for Nairobi, as well as the development of an EV curriculum for the Seychelles that includes sessions for new trainers covering EV repair, maintenance, and guidelines for roadworthiness inspection.

**Evidence shows countries with strong e-mobility policy frameworks in place see a much faster transition at the national and sub-national scales.**

- **The Country Cluster Initiative and Training Programme[51] pilots were launched.** Under this, five countries — all recipients of the ZEV-RRF — gathered for knowledge exchange and received targeted technical support, as well as resources from the IAT, on supply side regulations. Two more country clusters will be set up in January 2025.
- **The ZEV Island Taskforce (ZEVIT) doubled in size** — from four to eight countries — as island country signatories under the Global MOU increased. The ZEVIT brings together island nations to share knowledge and actively collaborate on truck and bus decarbonization.
- **The Global Electric Mobility Programme is now supporting 60 EMDEs,** with a total technical assistance budget of US$130 million. Led by UNEP and delivered in cooperation with several leading sustainable mobility and UN organisations, most country projects are funded by the Global Environment Facility (GEF) and combine operational programmes, such as the introduction of e-bus fleets, with national policies and roadmap development.
- **The Green Freight Support Program in Eastern Africa was launched by the Smart Freight Centre and Kühne Climate Center,** in partnership with Trademark Africa, UNEP and GIZ, amongst others. The Program is enhancing capacity and enabling peer-to-peer learning on foundational policies between the five countries in the region.
- **A collection of public-private collaboration models and best practices were published by the ZEV Emerging Markets Initiative (ZEV-EMI).**[52] Led by the World Business Council for Sustainable Development (WBCSD), this included policies and roadmaps that can be replicated across EMDE countries.
- **Electric mobility profiles were launched for an initial set of 10 countries under the Asian Transport Outlook (ATO) database.** A joint undertaking of the Asian Development Bank (ADB) and Asian Infrastructure Investment Bank (AIIB), the profiles provide a snapshot of a country's transport sector, status of e-mobility, and the policy landscape.[53]

- **The UN Economic and Social Commission for Asia and the Pacific (ESCAP) provided in-depth support** to Mongolia, Lao People's Democratic Republic, the Philippines, Sri Lanka, and Tajikistan on the implementation of e-mobility policies in public transport, with a focus on finance and gender equality.

Building on the above, in partnership with existing programmes and initiatives, we intend to do the following from 2025:

a. **Launch and operationalise the Global Technical Assistance Platform (TAP) to provide EMDE countries with support in developing and implementing strong policy frameworks.** As one of the three global functions of the Global ZEV Transition Delivery Framework, the TAP will be serviced by the ZEV-RRF and will host the Country Cluster Initiative, Twinning Capacity Building Programme, Training Programme, and Online Platform. This will be taken forward in close coordination with existing initiatives, such as the Global Fuel Economy Initiative, the Nationally Determined Contribution (NDC) Partnership, and UNEP's Global Electric Mobility Programme.

b. **Further scale the ZEV-RRF to enable EMDEs to access more agile technical support from an expanded network of world-leading experts and funders.** This includes: (1) increasing the number of ZEV-RRF country project requests to at least 18 from 8 in 2024; (2) expanding the ZEV-RRF's technical network of delivery partners and funders to at least 30 organisations from 22 in 2024; (3) growing funding for bespoke technical support; and (4) responding to the NDC Partnership's[54] country requests where relevant or appropriate.


Electric-powered haul truck, used to transport mining material in Indonesia. *Photo via Shutterstock.*

c. **Triple the size of the Country Cluster Initiative and Training Programme to at least 15 EMDEs by COP30** so more countries can access timely technical support, with this also being in contribution to the submission of more ambitious updated NDCs in 2025. This will be linked to the NDC Partnership's Global Call on NDCs 3.0 and Long-Term Low Emissions Development Strategies (LT-LEDS) as well as be coordinated with the Global Climate Action Partnership (including its Communities of Practice and Regional Platforms).

d. **Launch the Twinning Capacity Building Programme** to pair interested Country Cluster Initiative participants for deeper experience-sharing in policy action.

e. **Launch the Roadmap's online platform** to establish a clearer and fully coordinated international digital architecture that improves the accessibility of existing support. This includes hosting the training programme's curriculum to maximise accessibility and amplifying existing online platforms and technical resources to EMDE countries. These resources include the Global Electric Mobility Programme's Global Repository, the Transport Data Commons Initiative, the NDC Partnership's Global Practice Database, the TUMI E-bus Mission Knowledge Hub, the DigitalTransport4Africa's Data Repository, and INTENT's KnowledgeEx, amongst others.

f. **Utilise the Global ZEV Transition Delivery Framework to pool and elevate existing technical resources to countries** on topics related to the Roadmap's strategic challenges, including policy development and implementation. These resources include technical resources produced by the IAT's membership and wider partners. Where useful, existing technical resources will be replicated, tailored, or expanded to wider regions and EMDE countries.

g. **Further scale the ZEV Island Taskforce to bring in additional island nations committed to truck and bus decarbonisation through the Global MOU.** This will be led by CALSTART and the Government of the Netherlands.[55]

## 2. Improving access to and scaling finance

As detailed in the COP28-launched Roadmap, raising awareness within EMDEs of finance availability, ensuring there is the capability to successfully access such financing, and having finance in place to meet current and (Paris-aligned) future needs are crucial to the transition. To support these efforts, a breadth of activities has been taken forward, in partnership with existing programmes and initiatives, in 2024.

- **Public and private sector financing has been replenished and grown** for existing funding mechanisms and bodies active in the road transport sector. For example:
  - **The Drive Electric Campaign launched the Leapfrogging Partnership, with US$100 million of funding from the IKEA Foundation,** to help EMDEs in Southeast Asia, Africa, and Latin America turbocharge their transitions.
  - **The next phase of GEF support to UNEP's Global Electric Mobility Programme** will add at least 10 additional country projects, bringing the total to 60,[56] and will add US$31 million of funding, bringing the total to more than US$100 million GEF support for the programme.
  - **Vertelo, a fleet electrification solutions platform, was launched by Macquarie Asset Management to mobilise US$1.5 billion in India's e-mobility ecosystem** over 10 years. The Green Climate Fund (GCF) also provided anchor investment for this platform.

- **Nearly US$455 million was approved by the GCF for an Electric Mobility Program** that will provide technical assistance and investment in Armenia, Georgia, Indonesia, Kazakhstan, Kyrgyz Republic, Nepal, and Uzbekistan.
- **The ADB provided over US$1 billion in financial assistance for EV deployment,** including support for e-buses in China, India, Kyrgyzstan, Nepal, Pakistan, and Vietnam; for 2- and 3-wheelers in India and the Philippines; and for EV manufacturing facilities in the Philippines and Vietnam.
- **The Global Facility to Decarbonise Transport (GFDT) launched 11 new country projects, with US$1.18 billion of World Bank financing expected to be mobilised** by July 2025 for green mobility projects. It also completed several projects, including the establishment of a new Regional Financing Facility for Sub-Saharan Africa.

- **The Collective for Clean Transport Finance's (CCTF) was leveraged** to enable greater trilateral collaboration between the public sector, strategic finance groups and industry leaders. This includes embedding the CCTF as a key part of the Global ZEV Transition Delivery Framework and jointly organising the first annual 'C Level and Investors' Roundtable' in September 2024 to familiarise public and private sector leaders with investment opportunities in green on-road freight corridors in selected regions.
- **The ZEVTC Country Partnership with India[57] was expanded**, with new work including (1) the development of a capacity building programme[58] to support Indian States with accessing finance; (2) a three-pillar national strategy in response to the market demand signalling by 16 major manufacturing and logistics companies for the deployment of 7,750 electric trucks in India; and (3) the establishment of the India Charging Infrastructure Data-Sharing Platform. Linked to the CCTF and electric truck flagship (see below), a credit guarantee scheme and risk sharing facility for zero-emission trucking is also being established to unlock finance for fleet operators.[59]

**Scaling finance across the public and private sectors to meet future needs will be crucial.**

- **UNEP's Global Electric Mobility Programme provided more finance and technical support in the development of bankable projects.** Carried out in close collaboration with several global, multilateral, and regional funders,[60] the investment components of the Programme's 60 country projects are estimated to be US$300 million, with delivery taking place through the Programme's four Regional Support and Investment Platforms.
- **A report outlining ZEVs as a viable asset class was published by the Smart Freight Centre and Bloomberg New Energy Finance** to help provide greater comfort and enhance interest from financiers regarding larger-scale investments in e-mobility.

Building on the above, in partnership with existing programmes and initiatives, we intend to do the following from 2025:

**a. Continue growing public and private sector finance** for existing funding mechanisms and bodies that are active in the road transport sector. As part of this, the GFDT will become a global finance mobilisation hub and form one of the three global functions in the Global ZEV Transition Delivery Framework.

b. **Launch and operationalise the Global Demand Aggregation Platform (GDAP) to help more EMDE countries access the financing needed to grow their EV fleets.** As one of the three global functions of the Global ZEV Transition Delivery Framework, the GDAP will begin implementation of its two flagship projects involving e-buses and electric trucks by COP30 and convene a second 'C Level and Investors' roundtable' to collect, curate, and connect demand for ZEV projects in EMDEs to potential investors. The CCTF's leadership of the GDAP will also further solidify collaboration with ZEVTC and the Breakthrough Agenda.

c. **Utilise the Global ZEV Transition Delivery Framework to strengthen the coordination of funding, including processes and timings, across the international finance landscape.** This will initially focus on opportunities to embed more transparent and accessible funding routes for EMDEs, as well as opportunities for streamlining the coordination of resources across governments and wider funders. This will link to and complement wider international climate finance discussions, including on Multilateral Development Bank (MDB) evolution and finance alignment with the goals of the Paris Agreement.

d. **In coordination with the CCTF, convene a roundtable of public and private sector funders** to identify opportunities for mobilising and coordinating more finance to address the Roadmap's strategic challenges.

e. **Develop and launch a tool to track collective levels of public and private sector finance in EMDEs to support the ZEV transition.** Hosted by the Roadmap's online platform, use the tool to inform international discussions on current and future sector-specific spending levels and needs. In addition, use the tool and wider online platform to raise awareness of existing funding options and opportunities with EMDEs.


E-bus charging in India. *Photo courtesy of the World Business Council for Sustainable Development.*

f. **Explore options for launching new GFDT regional and sub-regional financing facilities in currently underrepresented regions and countries**[62] Drawing from the experiences of establishing a Regional Financing Facility in Sub-Saharan Africa, look to establish further facilities that convene EMDEs, existing initiatives, and the private sector to support the development of high-quality projects with sufficient scale and risk levels required for private sector investment. Continue identifying opportunities to link this to existing initiatives, such as the ZEVTC Country Partnerships and CCTF.

g. **Continue scaling the ZEVTC Country Partnership with India and lay the groundwork for new partnerships to be launched by COP30.** As part of this, begin implementation of the India Access to Finance Capacity Building Programme and look to disseminate its learnings, experiences, and knowledge outputs to wider countries and regions.

## 3. Increasing the availability of ZEVs in EMDEs

As detailed in the COP28-launched Roadmap, ensuring an adequate and affordable supply of new and second-hand ZEVs across all vehicle segments, and having supportive policies and regulations in place, will be crucial for scaling global fleets and meeting current and future demand. To help meet EMDE countries' supply needs for ZEVs across segments, a breadth of activities have been taken forward, in partnership with existing programmes and initiatives, in 2024.

- **Support was given to EMDE countries in the development and implementation of supply side regulations and policies**, such as through the UNEP Fuel Economy Standards and EV Credits Technical Assistance Initiative;[63] The Climate Group's EV100 and EV100+ Peer Networks to show business support for strong regulations that drive the supply of affordable EVs; and the Country Cluster Initiative pilot, which convened countries for knowledge exchange and experience sharing on supply side regulations.
- **The E-bus Flagship: The Global Electric Bus Aggregation Framework was announced** as a flagship project under the new Global Demand Aggregation Platform (GDAP) to scale e-bus deployment in EMDEs.
- **The E-truck Flagship: The ZEV Emerging Markets Initiative (ZEV-EMI) India Electric Freight Demand Aggregation Framework was scaled**, also as a flagship project under the GDAP, with efforts on track to deploy 5,000 e-trucks by 2027 and at least 7,750 e-trucks by 2030 in India. Smart Freight Centre, WBCSD, and CALSTART — under the eFAST platform in India — initiated work to match this collective demand signal with the financial instruments required to overcome investment barriers. Also under the eFAST platform, The Climate Group — alongside the World Resources Institute (WRI), civil society, corporates and EV100+ companies — led projects to enable large-scale e-truck adoption.
- **The ZEV Emerging Markets Initiative (ZEV-EMI) replicated its demand aggregation framework in Mexico.** This included launching its first collaborative arrangements with 10 companies to scale up investments in ZEVs and charging infrastructure along primary US-Mexico travel corridors and selected cities.
- **UNEP's Global Electric Mobility Programme supported the local production and assembly of EVs through its country projects**, with a focus on electric 2- and 3-wheelers and e-buses. UNEP has also supported several countries with regulating the import of used EVs, including setting state-of-health standards for EV batteries.

Building on the above, in partnership with existing programmes and initiatives, we intend to do the following from 2025:

a. **Continue supporting EMDEs in the development and implementation of strong supply-side regulations and policies.** For example, under the expanded UNEP Global Electric Mobility Programme, Leapfrogging Partnership, and Country Cluster Initiative.

b. **Prepare the Global Demand Aggregation Platform's e-bus and e-truck flagship projects so that full implementation can begin from COP30.** As part of this, the Collective for Clean Transport Finance's (CCTF) 3x5 process will be fully embedded into the delivery of the flagship projects.[64] Work will also take place with existing partners, including via the Global Technical Assistance Platform and Global Facility to Decarbonise Transport, to support EMDEs in establishing enabling policy environments and market conditions for the successful adoption and scale up of EVs. Linked to the e-truck flagship project, The Climate Group will also convene EV100 and EV100+ stakeholders to encourage conducive policy and regulatory support for supply-side zero-emission truck regulations in India.

**Strong enabling policies and innovative business models are key to increasing ZEV availability in EMDE markets.**

c. **Explore options for establishing a new Global Demand Aggregation Framework(s) for other transport segments**, such as 2- and 3-wheelers and informal transport vehicles, utilising lessons learned from the e-bus and e-truck flagship projects.

d. **Support importer EMDE countries under UNEP's Global Electric Mobility Programme.** Working with UNEP and wider programme partners, utilise the Global ZEV Transition Delivery Framework to (1) help further support countries in developing and implementing policy frameworks on used EV trade and (2) assist efforts in disseminating the Programme's best practices, experiences, and tools to wider countries.

e. **Continue supporting UNEP's work to convene interested exporter countries** to scope collaboration opportunities on export standards development, with the next meeting planned for early 2025.

f. **Identify opportunities to channel investment for ZEV-related manufacturing in currently under-invested regions**, starting initially with Africa as well as Central and South America,[65] with new actions to be included in future Roadmaps. Through the Country Cluster Initiative and ZEV-EMI, facilitate country-to-country and country-to-industry dialogues on ways to stimulate growth in domestic manufacturing sectors through policies, regulations, standards, and financial incentives, amongst other mechanisms.

g. **Support INTENT's work to disseminate information on India's experience with mass EV procurement so more EMDEs can replicate and scale their own EV fleets.** This includes utilising the Global ZEV Transition Delivery Framework to elevate INTENT's KnowledgeEx, a new interactive knowledge exchange programme, and coordinating on capacity building.

## 4. Accelerating charging infrastructure roll-out

As detailed in the COP28-launched Roadmap, ZEV deployment goes hand-in-hand with charging infrastructure deployment.[66] However, EMDEs can face multiple obstacles, such as a lack of grid capacity, data access, financing, and interoperability, amongst other challenges. To accelerate the roll-out of climate-resilient charging infrastructure, a breadth of activities has been taken forward, in partnership with existing programmes and initiatives, in 2024.

**Encouraging greater harmonisation and standardization of charging infrastructure could present significant opportunities to encourage much greater vehicle uptake across all segments.**

- **The ZEVWISE coalition[67] was launched and plans were announced to advance the development of at least ten green charging infrastructure corridors, including transboundary corridors, by 2026.** As part of this, the energy sector was mobilised to accelerate investments along some of the corridors in scope.
- **The Global Electric Mobility Programme's Charging Infrastructure Working Group developed tools on the links between electricity loads and EV charging grids.** This was led by the International Energy Agency, in coordination with wider partners. Many of the Programme's country projects also focus solely or partly on charging infrastructure.
- **The ZEV Emerging Markets Initiative (ZEV-EMI) launched the India Charging Infrastructure Data-Sharing Platform,** under the ZEVTC Country Partnership with India, to create a digital action framework for EV charging and operations.
- **Coordination between the ZEV and energy sectors was enhanced** with the IAT and ZEV Rapid Response Facility now involving more energy-related initiatives. This includes the Energy Transition Council (ETC), the ETC Rapid Response Facility (ETC-RRF), Sustainable Energy for All (SEforALL), the Clean Energy Ministerial Electric Vehicle Initiative (CEM EVI) and the Energy Sector Management Assistance Program (ESMAP).


Electric scooters parked outside metro station in Delhi, India. *Photo via Shutterstock.*

- **The ZEV Rapid Response Facility developed a charging infrastructure curriculum in Kenya and a charging infrastructure mapping tool for Nairobi,** with plans to replicate these across wider countries and regions.
- **A new *'harmonised pathway to deploying road transport charging infrastructure'* was launched to assist countries with charging infrastructure strategies.** A deliverable under the Road Transport Breakthrough, the pathway — led by CALSTART, the CEM EVI, ICCT, WBCSD, and the UN Economic Commission for Europe (UNECE) — provides a framework for coordinating research, policy recommendations, pilot projects, and discussions around public and private charging infrastructure.

Building on the above, in partnership with existing programmes and initiatives, we intend to do the following from 2025:

a. **Continue advancing the green corridors in scope of the ZEVWISE Coalition.** This will include organising dedicated sessions to profile the corridors, providing a platform to attract new stakeholders interested in their development, as well as sharing best practices and solutions to the challenges encountered.

b. **Launch a ZEVTC Global Infrastructure Policy Blueprint for EMDEs by COP30.** This will (1) showcase developments in charging infrastructure policy globally and (2) provide recommendations for EMDE governments on key policies and actions that could be taken at various EV adoption stages and for different country characteristics.

c. **Continue strengthening the linkages between the ZEV and energy sectors,** including through inviting more energy-related initiatives to participate in the Global ZEV Transition Delivery Framework and strengthening the relationships with those already involved.

d. **Support new activities under UNEP's Global Electric Mobility Programme on the integration of the power and transport sectors.** Working with UNEP and wider Programme delivery partners, utilise the Global ZEV Transition Framework to (1) support technical assistance on charging infrastructure and (2) help disseminate the Programme's best practices, lessons learnt and tools on this topic to wider countries and regions.

e. **Continue identifying and addressing key barriers impacting the rapid deployment of charging infrastructure across EMDEs.** Engage countries and the private sector — including through the Global ZEV Transition Delivery Framework — to develop further Roadmap actions that also consider topics such as battery swapping, infrastructure needs across specific segments, enabling greater finance for public infrastructure, standardisation, and addressing gaps on adaptation and resilience.

f. **Invite EMDEs to participate in the ZEVTC Charging Infrastructure Taskforce,** starting with the recipients of the ZEV Rapid Response Facility. Explore opportunities for also coordinating the Taskforce's activities with UNEP's Global Electric Mobility Programme.

## 5. Lifecycle management of ZEVs, EVs, and battery components

As detailed in the COP28-launched Roadmap, the recycling of ZEVs and EV battery components, including for the manufacturing of new batteries, presents a breadth of economic, social, and environmental benefits for countries as well as challenges. To support EMDEs in embedding effective, safe, and sustainable end-of-life management and recycling capabilities, various activities have been taken forward, in partnership with existing programmes and initiatives, in 2024.

- **UNEP's Global Electric Mobility Programme developed a new component on end-of-life EV batteries.** Supported by the Global Environment Facility and several other donors, this component will (1) develop capacity, including through the development of tools and delivery of training; (2) support (currently) 26 countries with the inclusion of an EV battery end-of-life component in their country projects; and (3) launch a global partnership to promote the reuse and circularity of end-of-life EV batteries.
- **Linked to the above, UNEP, in cooperation with the United States government, organized the first African workshop on end-of-life EVs and batteries and circularity.** Attended by 17 countries, the results from this workshop will feed into the newly expanded UNEP Global Electric Mobility Programme and the development of its global partnership.
- **The TUMI E-Bus Mission led activities on the circular economy,** including launching a *'Measure Catalogue for improving the circularity of E-Bus Batteries,'* and organising a series of workshops — attended by 18 countries — on the circular economy and e-buses.

**The recycling of ZEV and EV battery components presents a breadth of economic, social, and environmental benefits.**

- **The Global Battery Alliance (GBA) launched a 'Call to Action' on bridging the cooperation gap in critical battery minerals with harmonised data and transparency.** Part of the Road Transport Breakthrough, this outlined recommendations to policy makers, as well as proposals that are relevant to the Roadmap and enhancing support for EMDEs.

Building on the above, in partnership with existing programmes and initiatives, we intend to do the following from 2025:

a. **Support UNEP's Global Electric Mobility Programme's new activities on end-of-life EV batteries.** Working with UNEP and wider Programme delivery partners, utilise the Global ZEV Transition Framework to (1) support technical assistance on lifecycle management and (2) help disseminate the Programme's best practices, lessons learned, and tools on this topic to wider countries and regions.

b. **Consult with and elevate existing initiatives that are leading work to build skills and capacity in EMDEs on the safe reuse and recycling of EV batteries.** This includes the World Bank's Resilient and Inclusive Supply-Chain Enhancement (RISE) Partnership and UNEP's Extended Producer Responsibility for Batteries, amongst other activities led by the IAT and wider international community.

c. **Through the Global Technical Assistance Platform (TAP), convene countries to share experiences and learn about defining and scaling up international recycling standards.** This includes opportunities to develop and coordinate on recycling standards, battery performance standards, and training standards for those interacting with end-of-life batteries.

d. **Continue identifying and addressing the key barriers to embedding effective, safe, and sustainable end-of-life management and recycling capabilities.** This includes working with the IAT and wider partners to develop evidence-based actions for future Roadmaps, linking this also to the Roadmap's new action on manufacturing.[68]

The complexity of each strategic challenge, coupled with the need to ensure solutions are evidence-based and fully reflect each country's unique requirements, reinforces the vital need for continued and extensive international collaboration and coordination. From 2025, the Roadmap will continue to support international efforts to address the five strategic challenges and start work to address a new strategic challenge, as detailed below.

## 6. Promoting a resilient and just transition in the road transport sector that considers workforce implications and the inclusion of vulnerable groups

A resilient and just transition[69] is vital to achieving an equitable and Paris-aligned global transition to ZEVs. This means promoting a green economy in a way that is as fair, inclusive, and safe as possible to everyone concerned — workers, enterprises and communities — by creating decent work opportunities and leaving no one behind.[70] For instance, ensuring those who will be impacted are involved in the shaping of policies and strategies so their needs and experiences are reflected.[71] This includes considerations of the socioeconomic and industrial development opportunities and challenges that come with an accelerated transition.

**Promoting a green economy in a way that is as fair, inclusive and safe as possible to everyone concerned is crucial for a just and resilient transition.**

It also includes considerations of informal transport, which provides a livelihood to hundreds of thousands of people around the world — usually as small or medium sized enterprises — and likely moves more people globally than all formal transport modes combined.[72] This includes providing a vital service to many vulnerable and underserved communities.

The addition of this new strategic challenge will require further collective work to refine achievable deliverables, for which we — in partnership with existing programmes and initiatives — intend to collectively do the following from 2025:[73]

a. **Explore options for launching EV Centres of Excellence and Skilling Centres in EMDEs to support greater and more equitable access to safe and decent work.** In coordination with the IAT and wider partners, utilise the Global ZEV Transition Delivery Framework to deliver this work. Ensure each Centre helps to build the skills and capacity of those working in the manufacturing, retrofitting, maintenance, and operations of road vehicles in EMDEs. In addition, formalise a stronger understanding of the (1) key drivers and barriers behind upskilling, including digitalisation, and (2) opportunities to strengthen assistance in areas enabling workers to fully benefit from and utilise the transition.

b. **Support enhanced social dialogue and stakeholder engagement** (for example, between vulnerable groups, initiatives, governments, employers, trade unions and industry), by utilising the Global ZEV Transition Delivery Framework to ensure those impacted by the transition are included in the process of change

c. **Provide training and capacity building on Labour Impact Assessments**[74] through the new Global Technical Assistance Platform (TAP). Linking this also to the Roadmap's work on informal transport, support efforts to ensure that just transition considerations are taken into account and embedded throughout policy and project design.

d. **Identify and address key data gaps to support policymakers in making evidence-based and place-specific decisions on issues related to the just transition in the road transport sector,** including those related to informal transport and the inclusion of vulnerable groups. As part of this, also use the TAP to build the knowledge and skills needed by countries to utilise this data to inform policies, strategies, and projects according to internationally recognised best practice and local needs. In addition, look to help countries and initiatives find and analyse disaggregated data that are important for programme design, management, monitoring, evaluation, and learning related to this strategic challenge.

e. **Embed gender throughout the Global ZEV Transition Delivery Framework.** This includes working closely with IAT members and wider (including local) stakeholders to: (1) pool knowledge to help strengthen awareness of the gender, transport and climate change nexus, with this also being used to identify knowledge gaps and the obstacles to be addressed for women as users and workers; (2) provide training on the adoption of gender-based analysis and tools (including those considering transport decarbonisation policies and gender equality in employment); and (3) enhance knowledge sharing, capacity building and communication between governments and stakeholder groups to support gender mainstreaming in ZEV policies. Activities will also consider the gender-informal transport intersection and be expanded to other vulnerable groups in future.

f. **Embed informal transport throughout the Global ZEV Transition Delivery Framework.** This includes working closely with the IAT members and wider stakeholders, including local representatives, to: (1) pool knowledge to help strengthen awareness of the informal transport and climate change nexus, with this also being used to identify the key knowledge gaps and the obstacles to be addressed; (2) enhance knowledge sharing, capacity building and communication between governments and stakeholder groups; and (3) identify where further, tailored financial support might be required by countries, linked also to wider Roadmap activities on access to finance.

g. **Embed considerations regarding the just transition into the ZEVTC Country Partnerships work.** This includes working closely with IAT members and wider stakeholders, including local representatives, to ensure considerations, such as workers and end users, are embedded throughout. Where within the scope of a Partnership, co-develop place- and segment-specific solutions that can help informal transport providers go electric. This also includes exploring models of SME business incentives and organisational support, as well as ensuring opportunities, including financial support, are disseminated to local stakeholders.

h. **Support local e-mobility entrepreneurship and business opportunities in EMDEs,** such as through ZEV-EMI and UNEP's Global Electric Mobility Programme, with a focus on building local-level capacity to create and grow local businesses. Through activities, identify financing frameworks that support the creation of sustainable enterprises and ownership models, while not placing additional economic burdens on owner drivers and informal workers.

i. **Provide guidance on opportunities to consider nature and social equity throughout green and multi-modal freight corridors and urban hubs.** This will be led by WBCSD, with participation by the ZEVWISE Coalition, IAT, and the private sector, amongst others.

# The Global ZEV Transition Delivery Framework

**In its first report in 2022, the Breakthrough Agenda identified considerable fragmentation and lack of coordination regarding international assistance in the road transport sector.** In response, the IAT completed research[76] to better understand where targeted collective action could be impactful, resulting in the COP28-launched Roadmap and a proposal to launch a governance and delivery model to take action on the Roadmap this decade.

Building on the initial delivery framework detailed in the COP28-launched Roadmap, the IAT have developed the Global ZEV Transition Delivery Framework to provide an overarching structure for existing initiatives to more easily coordinate and collaborate. The individual parts of the Framework have been designed to be flexible and scalable so that each can iteratively respond to the evolving needs of EMDEs, whilst recognising the heterogenous and unique nature of countries' experiences and requirements. The Framework, which will begin implementation from 2025, consists of the following components:

1. **Political oversight:** Oversight will be provided by the ZEVTC member governments and the Road Transport Breakthrough endorser governments, both of which include some of the world's largest Official Development Assistance donors. The Framework will enable far easier collaboration and dialogue, providing governments with greater opportunities to collectively strengthen coordination of resources, as well as funding processes and timings, across the international provision. Oversight will be informed by Framework activities and the recommendations from the partners and countries involved throughout.

Figure 3. Illustrating the delivery Framework to strengthen coordination among international initiatives.

2. **Steering group:** Noting its existing key role as a coordination platform for international assistance and Roadmap activities, the IAT will now consist of two groups.
   - A delivery group to convene the ZEVTC co-chairs (the United Kingdom and the United States), other interested country governments and organisations, the ZEVTC/IAT secretariat (the International Council on Clean Transportation), and the operational leads of the three global functions (see below). This group will be operational focused, and tasks will include monitoring delivery progress and risks. It will also lead on providing updates, in coordination with the expanded IAT, to the political oversight groups.
   - An expanded IAT with a broadened membership encompassing, for example, more EMDEs, philanthropy organizations, private companies, multilateral development banks, and others. The group will continue to focus on coordination and information sharing, including in relation to actions outlined in the Roadmap and the wider Framework. The group will also lead on identifying opportunities to strengthen and build new partnerships with non-ZEV initiatives and sectors, including health, other forms of mobility (including active mobility), energy, trade, and others.

3. **Three global functions:** Where appropriate, these will implement Roadmap actions. For example, through pooling and coordinating expertise and resources to respond to EMDE countries' needs and requirements.
   - The Global Technical Assistance Platform (TAP) will deliver Roadmap activities related to the development and implementation of policy action, including standards, regulations, and fiscal instruments. It will also pool, elevate, and amplify existing technical support to help strengthen the coordination and visibility of existing activities and resources, as well as identify gaps to be addressed. Serviced by the ZEV-RRF, the TAP will have two core functions: (1) country-to-country dialogues, consisting of the Country Cluster Initiative and Twinning Programme, and (2) training and capacity building to respond to the needs identified in country-to-country dialogues, consisting of the Training Programme and Online Platform.
   - Global Demand Aggregation Platform (GDAP) will deliver Roadmap actions related to improving access to and scaling private finance, as well as those related to increasing the availability of ZEVs in EMDEs. Supported through the Collective for Clean Transport Finance (CCTF), the GDAP will (1) lead the development and implementation of global aggregation frameworks, starting with e-buses and e-trucks; (2) provide a platform to pool and coordinate existing demand creation efforts to support regional harmonization across the existing provision; and (3) replicate the ZEV Emerging Markets Initiative (ZEV-EMI) across several geographies, drawing from experiences in India and Mexico.
   - Global Facility to Decarbonise Transport (GFDT) will be the Framework's global finance mobilisation hub. Its functions include (1) pooling and improving access to finance; (2) strengthening in-country project pipelines; (3) aggregating demand in coordination with the GDAP; (4) catalysing World Bank financing for green mobility (currently projected to be over US$1bn by July 2025); and (5) exploring options to establish further regional financing facilities.

Each function will dock into each other and play a complementary role that together targets the full pipeline of action required for an accelerated transition — from policy development and implementation to accessing finance and pooling investors around a flow of bankable projects. Cooperation with and strengthening of existing programmes, as well as strengthening the coordination of existing support, will be key across all aspects of the Framework. Updates on progress, including regarding the delivery and scaling of activities under the Framework, will be provided in the next iteration of the Roadmap to be launched at COP30 in 2025.


Electric vehicle charging station in São Paulo, Brazil. *Photo via Shutterstock.*

# ENDNOTES

[1] International Energy Agency, Net Zero Roadmap: A Global Pathway to keep the 1.5°C goal in reach (September 2023), page 88, https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-0c-goal-in-reach.

[2] Outcome of the first global stocktake, 13 December 2023 — paragraph 28 (a) and (g).

[3] International Energy Agency, Net Zero Roadmap, page 117.

[4] International Energy Agency, Net Zero Roadmap, page 55.

[5] The Roadmap is not legally binding and participating countries are not necessarily involved in each activity listed.

[6] The ZEV Transition Council (ZEVTC) and participants in the Road Transport Breakthrough priority action 2.

[7] Zero emission refers to at the tailpipe and includes fuel cell vehicles and battery electric vehicles. Where electric vehicles are mentioned in the Roadmap, it refers to battery electric and plug-in hybrid electric vehicles.

[8] Emerging Markets and Developing Economies (EMDEs) encompass all the following groupings: Upper-Middle Income Countries; Lower-Middle Income Countries; Low Income Countries; and Least Developed Countries. OECD, Development Assistance Committee List (2023), https://www.oecd.org/en/topics/sub-issues/oda-eligibility-and-conditions/dac-list-of-oda-recipients.html.

[9] BloombergNEF, Electric Vehicle Outlook (2022, 2023, 2024) https://about.bnef.com/electric-vehicle-outlook/; Arijit Sen and Josh Miller, Vision 2050: Update on the global zero-emission vehicle transition in 2023 (2023), https://theicct.org/publication/vision-2050-global-zev-update-sept23/.

[10] BloombergNEF Electric Vehicle Outlook; The International Council on Clean Transportation (ICCT) Roadmap model, 2023 — please see here (NB: two- and three-wheelers were outside the scope of $CO_2$ emissions modeling due to data limitations).

[11] SLOCAT Partnership on Sustainable Low Carbon Transport, SLOCAT Partnership Transport, Climate and Sustainability Global Status Report, 3rd edition (2023), https://tcc-gsr.com/.

[12] Breakthrough Agenda Report, 2022, 2023 and 2024. The figures included in this paragraph are from multiple sources and based on a 2050 timeframe. Please see the 'State of the Transition in 2024' chapter for references and links to sources.

[13] International Council on Clean Transportation, ICCT Roadmap model, https://theicct.github.io/roadmap-doc/versions/v2.2/.

[14] International Council on Clean Transportation, ICCT Roadmap model.

[15] International Council on Clean Transportation, ICCT Roadmap model.

[16] International Energy Agency, "World Energy Employment Report" (2022), https://www.iea.org/reports/world-energy-employment.

[17] Defined as transport services "offered by private individuals or groups and are often not planned by a centralized government authority or are managed under limited regulations, without formal contracts. Because of this, they tend to lack set fares and schedules — unlike city buses, metro rails and other types of "formal" mass transport." World Resources Institute (2023).

[18] Please see the Breakthrough Agenda reports for 2022, 2023 and 2024.

[19] International Energy Agency, Global EV Outlook 2024, (2024) https://www.iea.org/reports/global-ev-outlook-2024.

[20] International Energy Agency, Global EV Outlook 2024.

[21] International Council on Clean Transportation, ICCT Roadmap model.

[22] International Energy Agency, Global EV Outlook 2024; BloombergNEF, Electric Vehicle Outlook 2024; Sen and Miller Vision 2050: Update on the global zero-emission vehicle transition in 2023.

[23] International Energy Agency, Global EV Outlook 2024; BloombergNEF, Electric Vehicle Outlook 2024; Sen and Miller Vision 2050: Update on the global zero-emission vehicle transition in 2023.

[24] BloombergNEF, Electric Vehicle Outlook 2024.

[25] BloombergNEF, Electric Vehicle Outlook 2024.

[26] EV VOLUMES.COM, https://www.evvolumes.com/; China is the only EMDE that is competitive with other leading markets and is the global leader across all segments.

[27] International Energy Agency, Global EV Outlook 2024.

[28] "India Rolls Out 10,000 Electric Buses in Dozens of Cities," World Resources Institute, https://www.wri.org/outcomes/india-rolls-out-10000-electric-buses-dozens-cities.

[29] Through leveraging private sector participation and deploying innovative aggregation and financing mechanisms. More information can be found at "Electric transportation in India: Accelerating the deployment of e-buses," International Energy Agency, https://www.iea.org/reports/india-case-study/electric-transportation-in-india-accelerating-the-deployment-of-e-buses.

[30] UNDP Mauritius & Seychelles," UNDP, https://www.undp.org/mauritius-seychelles/projects/promoting-low-carbon-electric-public-bus-transport-mauritius.

[31] International Energy Agency, Global EV Outlook 2024.

[32] International Energy Agency, Global EV Outlook 2024.

[33] International Energy Agency, Global EV Outlook 2024.

[34] UN Environment Program, Electric two-and three-wheelers: Global Emerging Market Overview (2023), https://sustmob.org/EMOB/pdf/Global_EmergingMarketsReport_ElectricTwoThreeWheelers.pdf.

[35] Caitríona Palmer, "Kigali's Big Shift to Small Electric Motorcycles Brings More Than Just Climate Benefits," May 6, 2024, International Finance Corporation, https://www.ifc.org/en/stories/2024/kigali-shift-electric-motorcycles-brings-climate-benefit.

[36] Caitríona Palmer, "Kigali's Big Shift to Small Electric Motorcycles Brings More Than Just Climate Benefits."

[37] ZEV Declaration commitment: "working towards all sales of new cars and vans being zero emission globally by 2040, and by no later than 2035 in leading markets." Global MoU commitment: "working together to enable 100% zero-emission new truck and bus sales by 2040 with an interim goal of 30% zero-emission vehicle sales by 2030."

[38] Cazzola, Ramji, and Santos Alfageme: 'Facilitating a transition to zero-emission vehicles in the Global South' (2023), https://zevtc.org/facilitating-a-transition-to-zero-emission-vehicles-in-the-global-south/. This research, which was funded by the FIA Foundation, was produced for the International Assistance Taskforce to inform the actions outlined in this Roadmap.

[39] Cazzola, Ramji, and Santos Alfageme: 'Facilitating a transition to zero-emission vehicles in the Global South' (2023).

[40] Well-to-wheel emissions include well-to-tank and tank-to-wheel emissions, where well-to-tank emissions represent emissions from fuel production, processing, distribution, and use, and tank-to-wheel emissions are the tailpipe emissions. These well-to-wheel emissions are different from life-cycle analysis which additionally includes upstream emissions related to vehicle production and end-of-life emissions such as from material recycling, recovery, and disposal.

[41] ICCT Roadmap model/; two- and three-wheelers were outside the scope of $CO_2$ emissions modeling due to data limitations.

[42] Sen and Miller, 'Vision 2050: Update on the global zero-emission vehicle transition in 2023'.

[43] SLOCAT Partnership on Sustainable Low Carbon Transport, SLOCAT Partnership Transport, Climate and Sustainability Global Status Report, 3rd edition.

[44] Cazzola, Ramji, and Santos Alfageme: 'Facilitating a transition to zero-emission vehicles in the Global South' (2023); Tanzila Khan et al., 'A critical review of ZEV deployment in emerging markets' (International Council on Clean Transportation, 2022), https://theicct.org/publication/zev-market-review-global-feb22/.

[45] EV VOLUMES.COM (2023), https://www.evvolumes.com/.

[46] Defined as transport services "offered by private individuals or groups and are often not planned by a centralized government authority or are managed under limited regulations, without formal contracts. Because of this, they tend to lack set fares and schedules — unlike city buses, metro rails and other types of 'formal' mass transport." World Resources Institute (2023). https://www.wri.org/insights/informal-transport-climate-benefits.

[47] E.g. a central strategy or roadmap, fuel economy and emissions standards, ZEV mandates, ICE phase-out targets, and fuel taxation (noting also the link between subsidising transport fuels with energy security and e-mobility competitiveness).

[48] Such as grants, loans, technical and policy assistance, and tools and knowledge sharing products from various international agencies and organisations, philanthropic institutions, multilateral development banks and regional partnerships/initiatives.

[49] The new strategic challenge is 'promoting a resilient and just transition in the road transport sector that considers workforce implications, the inclusion of vulnerable groups' — this was highlighted in the COP28-launched Roadmap as an area for further consideration by the IAT for inclusion in a future Roadmap.

[50] Particularly laws and mandates that build on a national roadmap or strategy and include foundational regulations that boost the supply of ZEVs (such as ZEV sales requirements, emissions regulations, fuel economy or greenhouse gas emission standards), as well as import duty exemptions and transport fuel taxation, amongst others.

[51] The Country Cluster Initiative, Twinning Capacity Building Programme, Training Programme and scalable Online Platform were all initially announced as part of the COP28-launched Roadmap.

[52] ZEV-EMI public-private collaboration models and best practices — please see here.

[53] ATO E-mobility Profiles — Asian Transport Outlook — please see here

[54] The NDC Partnership facilitates access to expertise and dedicated resources for countries to align, update and enhance their NDCs and Long-Term Low Emissions Development Strategies (LT-LEDS), in line with the Paris Agreement.

[55] Activities during 2025 will focus on two topics that are yet to be decided by participants — options include demand aggregation, infrastructure planning, innovative financing and supply side regulations, amongst others.

[56] Of which 43 are with GEF support.

[57] Currently led by the governments of the United Kingdom and United States as well as the World Business Council for Sustainable Development (WBCSD).

[58] Informed by the research and recommendations in Aditya Ramji, Aakansha Jain, Chaitanya Kanuri, and Pawan Mulukutla, Navigating India's EV Financing Landscape (UC Davis and WRI India, 2024), https://zevtc.org/navigating-indias-ev-financing-landscape/.

[59] This also builds on the Payment Security Mechanism (PSM) that was launched in 2023 by the governments of the United States and India to facilitate the deployment of 10,000 made-in-India electric buses in Indian cities.

[60] This includes the Global Environment Facility (GEF), International Climate Initiative (IKI), World Bank, European Bank for Reconstruction and Development (EBRD), Asian Development Bank (ADB), African Development Bank (AfDB), amongst others.

[61] This will also link to and compliment wider international discussions, including on Multilateral Development Bank (MDB) reform and finance alignment with just transition principles.

[62] Underrepresented in this context means those countries and regions that are currently not a major focus for existing international financial and technical support initiatives, based on 2023 research conducted by the IAT.

[63] That is a new addition to the Global Fuel Economy Initiative.

[64] The Collective for Clean Transport Finance's mission is to institutionalise trilateral collaboration to reduce the risks and increase the scale of transition finance deals for transport — the 3x5 process (3 sectors and 5 steps).

[65] International Energy Agency, Advancing Clean Technology Manufacturing (2024), https://www.iea.org/reports/advancing-clean-technology-manufacturing.

[66] From multiple sources, such as the IEA Global EV Outlook 2024, multiple ICCT publications (2022–2024), World Bank analysis (2022–2024) and the UC Davis-led IAT report on 'Facilitating a Transition to ZEVs in the Global South' (2023).

[67] The ZEVWISE Coalition brings together governments and international organisations to collectively address the finance and infrastructure challenges of establishing green road corridors that span multiple countries. It includes the Netherlands, CALSTART's Drive to Zero program, ICCT, Smart Freight Centre, United States, United Kingdom, The Electric Vehicles Initiative, The World Bank, WBCSD, International Transport Forum, and the United Nations Environment Programme.

[68] We also intend to continue to identify new Roadmap actions to support the development of sustainable battery supply chains by working with the Global Battery Alliance and other leading initiatives under the Road Transport Breakthrough priority action 3. This includes identifying opportunities to link this to broader international discussions and work underway, such as to create a global standard for battery health in regard to second-hand ZEVs.

[69] 'Vulnerable Groups' as defined by the United Nations here.

[70] International Labor Organizaiton, Achieving a just transition towards environmentally sustainable economies and societies for all (2023), https://www.ilo.org/ilc/ILCSessions/111/reports/reports-to-the-conference/WCMS_876568/lang--en/index.htm.

[71] Stockholm Environment Institute, 2023, https://www.sei.org/perspectives/a-just-transition-for-climate-adaptation/.

[72] A Closer Look at Informal (Popular) Transportation: An Emerging Portrait, UNDP and GNPT (2024).

[73] From 2025, we also intend to identify opportunities for new Roadmap actions that further support a just transition throughout the road transport sector. This includes topics such as: Ensuring equitable (and affordable) access and use of electric mobility across communities and vulnerable groups that are in rural and hard-to-reach areas; Rolling out climate resilient, accessible and equitable charging infrastructure — this includes the role of charging infrastructure (including battery swapping for two- and three-wheelers) in accelerating the electrification of informal transport; Deeper coordination across sectors to ensure a holistic approach to the just transition; Socioeconomic and industrial development opportunities and challenges presented by a just transition, including in the development and deployment of ZEV technologies; Options for reducing the financial barriers faced by operators and end users currently unable to participate in the deployment of ZEVs and associated infrastructure — this includes reducing undue economic pressures on operators and drivers and identifying novel financing solutions that can better support informal transport workers; The role of industry reform as a prerequisite to electrification; Linkages between informal transport electrification and human health, including air quality and road safety (including potential disproportionate and adverse impacts on vulnerable groups); and the formalisation of informal transport in terms of the role in plays in the just transition and decarbonisation.

[74] To measure employment and decent work impacts, as outlined under International Labor Organization,"Conclusions on the future of decent and sustainable work in urban transport services" (2021), https://www.ilo.org/resource/record-decisions/conclusions-technical-meeting-future-decent-and-sustainable-work-urban.

[75] As each Partnership is country driven.

[76] Since 2022, the IAT has mapped existing global- and regional-level ZEV-related international assistance activities to identify gaps and areas of potential duplication. The initial findings informed this Roadmap. Mapping will continue from 2025, expanding to new geographies and stakeholders, including not-for-profits and private consultancies.

# ANNEX

## OVERVIEW OF EXISTING INITIATIVES AND THEIR PLANS FOR 2025

**The following presents a non-exhaustive list of global- and regional-level initiatives** that, as of 2024, are actively supporting Emerging Markets and Developing Economies (EMDEs) in their transitions to zero-emission vehicles (ZEVs) and electric mobility, including support related to charging infrastructure and supply chains. The list also summarizes the recent activities of the initiatives and plans for the coming year.

We intend to continue identifying opportunities through the ZEV Transition Council International Assistance Taskforce and wider Roadmap delivery framework to further strengthen support and enhance coordination across the international landscape in 2025 and beyond.

### Accelerating to Zero (A2Z) Coalition

Launched at COP26 by a leadership group of more than 100 countries, businesses, and organisations, the Zero Emission Vehicles (ZEV) Declaration commits to working towards all sales of new cars and vans being zero-emission globally by 2040, and by no later than 2035 in leading markets. At COP27, the Accelerating to Zero (A2Z) Coalition was launched to host the ZEV Declaration and provide a platform for the growing number of signatories — now over 230 — to showcase their commitments, provide access to support and resources (including an international community of best practice), and track progress. For EMDE countries that have signed the ZEV Declaration, additional bespoke support — including via the ZEV Rapid Response Facility (see further details below) — is provided to help countries meet their ambitions. In 2024, multiple new signatories have signed the ZEV Declaration, including Colombia, Costa Rica, and Nigeria.

### Asian Infrastructure Investment Bank

The Asian Infrastructure Investment Bank (AIIB), a multilateral development bank with over 100 members, focuses on financing sustainable and technology-enabled infrastructure for the future. AIIB's transport sector strategy emphasizes carbon emission reduction, fleet electrification, and adoption of green transport technologies in its projects. For instance, through the GreenCell Electric Bus Financing project, AIIB contributes to the mitigation of urban air pollution in India by providing a US$20.5 million loan for the acquisition of 255 electric buses and the development of electric vehicle (EV) charging station infrastructure. Similarly, through the Lionbridge Leasing EV Transport Green Transition Facility, AIIB promotes the adoption of EVs and the decarbonization of China's logistics fleet by providing a US$60 million loan for the purchase of EVs to be leased to self-employed truck drivers, and supports Lionbridge Leasing to facilitate its pace towards a Science Based Target Initiative (SBTI) certified Paris-aligned net-zero transition target.

### Asia-Pacific Initiative on Electric Mobility

Launched in 2022 and coordinated by UN Economic and Social Commission for Asia and the Pacific (ESCAP), the Asia-Pacific Initiative on Electric Mobility aims to help accelerate the transition to electric mobility across the region. With a focus on public transport fleets, activities include enhancing regional and multi-sectoral collaboration, as well as strengthening countries' capacity to formulate national policies and strategies. Since its launch, the Initiative has convened regional and sub-regional knowledge exchange meetings as well as delivered training and capacity building sessions, including in collaboration with research and academic institutions. Implementation of the 2023-launched Electric Mobility in Public Transport: A Guidebook for Asia-Pacific Countries also got underway as its principles will be used to guide the development and implementation of electric mobility in public transport policies in Lao People's Democratic, Philippines, Sri Lanka and Tajikistan.

### Climate Compatible Growth (CCG) Programme

The CCG Programme, which is funded by the UK Government, supports investment in sustainable energy and transport systems to meet development priorities in EMDE countries. It carries out a range of research and capacity building activities to help countries develop economic strategies, plans, and policies to attract investment in low-carbon growth. This is done through convening research organisations, local researchers, governments, multilateral development banks (MDBs), and international organisations to identify appropriate low-carbon development pathways. In 2024, CCG worked on several country-level projects, including in Kenya, Zambia, Lao PDR and Vietnam, as well as regional-level partnerships, such as with the Asian Development Bank on decarbonisation pathways for Asian countries. In June 2024, the UK government announced a £57m extension of the programme to 2030. Planned activities for 2025 include a series of capacity building courses and trainings for countries on energy and transport in Asia and Africa.

### Climate Group Transport Initiatives

Climate Group unites corporate and subnational governments to drive the transition to ZEVs. This includes through the EV100 network (which has over 120 members who are committed to transitioning more than 5.5 million vehicles (up to 7.5 tons) in their fleets to electric by 2030), the EV100+ network (a global initiative where companies pledge to switch their fleets (over 7.5 tons) to electric or green hydrogen vehicles by 2040) and the ZEV Community (which brings together all levels of governments to share and learn about ZEV initiatives taking place around the world). In 2024, Climate Group worked with committed companies to raise ambition around CO2 standards for trucks in the US and EU as well as ZEV mandates and corporate fleet mandates across the UK, France and the EU. In India, as part of the EV100+ campaign, Climate Group has been working with three pioneering businesses (JSW Steel, Flipkart and IKEA) to implement e-truck pilots in their India business operations — efforts that aim to help create an evidence base for fleet scalability in India and globally. In 2025, Climate Group and corporate stakeholders from the EV100 and EV100+ networks will work together to address existing knowledge gaps and promote an enabling environment for regulatory decisions on zero emission trucks (ZETs) in India. A Model Policy and Regulatory ZET Framework will also be developed for States to build momentum for ZET regulation and mandate adoption.

### Clean Technology Fund (CTF)

The CTF, a sub-fund of the Climate Investment Funds (CIF), is scaling its support for cleaner transportation in EMDEs, including through improving public transits, vehicle efficiencies, and grid systems, as well as supporting modal shifts to help individual countries adopt cleaner technologies. Currently active projects include accelerating the shift to electric mobility in Colombia and Costa Rica as well as financing sustainable electric transport solutions in Ecuador and Peru. Preparations to develop the Climate Smart Urbanisation Programme, which will include electric mobility and wider sustainable transport, also continue.

### Climate Technology Centre and Network (CTCN)

Hosted by the UN Environment Programme, the CTCN is the implementation arm of the Technology Mechanism of the UN Framework Convention on Climate Change (UNFCCC). The CTCN, which celebrated its 10-year anniversary in 2024, helps to accelerate the transfer of environmentally sound technologies for low carbon and climate resilient development at the request of countries. By leveraging a global network of technology companies and institutions, the CTCN provides countries with technology solutions, capacity building, and advice on policy, legal, and regulatory frameworks. Recent projects include the development of a framework for real-time public transport information systems in Greater Dhaka and technical capacity enhancement for planning an urban public transport system in Vientiane, Lao PDR. Projects on sustainable mobility will continue to be implemented in 2025, as aligned with the CTCN's 2023–2027 Work Programme.

### Collective for Clean Transport Finance (CCTF)

Launched at COP27, the CCTF convenes the public sector (authorities, policymakers, market regulators, and governments), strategic finance groups (asset owners and managers, banks, and development finance institutions), and relevant industry leaders (original equipment manufacturers and industry networks) to collaborate on zero emission transport projects. In 2024, the CCTF has continued work to scale investments in zero-emission technologies. This includes convening its first annual 'Investors Roundtable' (in collaboration with the Sustainable Markets Initiative) in September 2024 to connect public sector ambitions with private sector leaders' interest in green on-road freight corridors. Preparations for the CCTF's two demand aggregation flagship projects — on electric buses and electric trucks — will begin their implementation from 2025.

### Digital Transport for Africa (DT4A)

Established in 2017 by World Resources Institute (WRI), French Development Agency (AFD), Columbia University and MIT, DT4A is a community initiative dedicated to improving African urban transport through digital data. Open to individuals and organisations committed to ethical data collection principles, including the Digital Principles for Development, DT4A prioritises end-user value, open standards, innovation, and peer-to-peer learning. The initiative promotes transit mapping with a gender lens and emissions focus, emphasising collaboration and community building across African cities. It encourages and curates standardized paratransit datasets in General Transit Feed Specification (GTFS) format. To date, DT4A has mapped and curated about 20 datasets, all available in an open GitLab repository. Many mapping efforts involve local participation, such as students and local professionals, and provide training for city officials and technical staff. The initiative also runs the DT4A Innovation Challenge, supporting innovative local open data projects for sustainable and equitable transport outcomes. In 2025, DT4A will explore new ways to further enable paratransit data creation, stewardship, and dissemination through its network.

### Decarbonising Transport Initiative

Coordinated by the International Transport Forum (ITF), the Decarbonising Transport Initiative (DTI) promotes carbon-neutral mobility by providing decision makers with tools to select $CO_2$ mitigation measures that deliver on their climate commitments, thereby helping governments and industry — including in EMDE countries — to translate climate ambitions into actions. It does this through continually building its catalogue of effective $CO_2$ mitigation measures on the Transport Climate Action Directory, providing targeted analytical assistance for countries and partners, gathering and sharing evidence of best practice, as well as building a global policy dialogue. In 2024, the DTI supported countries by tracking progress, providing in-depth sectoral and focal studies, assessing policy levers to support national pathways, and organising global dialogues through high-level roundtables, policy briefings, and technical workshops. As part of this workstream, the ITF also launches a biennial Transport Outlook report that looks at global projections for transport demand and $CO_2$ emissions under different policy scenarios. In 2025, the next edition of the Transport Outlook will be published, and the DTI will evolve into a new 'Sustainable Transport Systems Initiative' to provide a more systemic approach to resolving sustainable transport challenges necessary for delivering the Sustainable Development Goals.

### E-mobility Program for Sustainable Cities in Latin America and the Caribbean

Led by the Inter-American Development Bank, the E-mobility Program continues to support the shift to low-emission and resilient transportation systems across the region. Over its lifetime (2022–2030), the Program will provide US$450 million in concessional loans and grants to nine countries (Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay, Uruguay), including US$200 million concessional finance from the Green Climate Fund (US$145 million in loans and US$55 million in grants). In 2024, the Program has continued to focus on outreach activities and missions to initiate the identification, preparation, and consolidation of projects to be considered. One of its first projects — which is in the due diligence stage — will implement the largest electric bus fleet so far in the City of Panama, with a focus on the adaptation of public transportation and charging infrastructure to climate change impacts and extreme weather events. Other projects in the identification phase are being discussed with authorities in several countries, including Chile, Colombia and Costa Rica. Regarding the knowledge agenda, the Program also developed EMOVILAC, a regional digital platform to virtually connect electromobility stakeholders, promote technical training, foster knowledge sharing, and establish multi-sectoral communities of practice. In 2025, work across these areas will continue with new projects also starting their implementation across the region.

### Energy Sector Management Assistance Programme (ESMAP)

ESMAP is a partnership between the World Bank and over 20 donors, aiming to ensure universal access to affordable, reliable, and modern energy services by 2030; accelerate the transition towards a sustainable, just, and decarbonized energy system; and ensure the resilience and adaptation of the energy sector to the growing impacts of climate change and other shocks. ESMAP supports e-mobility projects across regions, focusing on various energy dimensions such as charging tariffs, charging infrastructure deployment, integrated power system planning, the battery value chain, and the role of utilities. In its previous business plan, ESMAP supported more than 20 countries and produced technical reports, notably on the impacts and mitigation strategies of E-Mobility on power systems in developing countries. ESMAP is scaling up its contributions to meet the increasing demand for energy-specific technical assistance and investments for e-mobility in EMDEs.

### The Global Electric Mobility Programme

The Programme is being funded by the Global Environment Facility (GEF) and other donors, with implementation being led by the UN Environment Programme, the International Energy Agency, the Asian Development Bank, the European Bank for Reconstruction and Development, and Centro de Movilidad Sostenible. In 2024, the Programme consisted of over 50 country projects, four regional support and investment platforms, and four global thematic Working Groups. This year also saw the agreement of a funding replenishment from the GEF, which will enable the programme to scale to at least 10 additional country projects (bringing the total to 60) and US$31 million of additional funding (bringing the total to more than US$100 million GEF support to the programme) from 2025. This will also result in the incorporation of new component into the programme on end-of-life electric vehicles (EV) and EV batteries.

### Global Facility to Decarbonize Transport (GFDT)

The GFDT, a World Bank multi-donor trust fund, aims to accelerate innovation and investment that enables EMDE countries to build safe, modern, inclusive, and resilient transport systems that are not emissions intensive. To help EMDE countries achieve low-carbon pathways to development, the GFDT supports in areas related to the development and delivery of knowledge products as well as project preparation. The GFDT launched its first tranche of projects at COP27, which included activities to accelerate energy transitions in transport through new energy vehicles, electrification, the promotion of public transport and active mobility, and the development of innovative financing and funding frameworks. This included projects in Egypt, Ghana, India, Pacific Islands, Peru, the Sahel, and Sub-Saharan Africa. In 2024, the GFDT's second tranche of projects got underway and included supporting green transport in Nepal and Nigeria, exploring climate friendly solutions to traffic congestion in Iraq, and financing e-mobility transitions across Latin America and Caribbean. In 2025, as well as continuing the implementation of existing projects, the GFDT's next tranche of projects will be launched.

### Global Fuel Economy Initiative (GFEI)

The GFEI is a partnership of organisations (including the FIA Foundation, the International Council on Clean Transportation, UN Environment Programme, International Energy Agency, International Transport Forum, and the University of California, Davis) that supports transport decarbonisation at the global, regional, country, and sub-national levels. In addition to data development and analysis of fuel economy potentials, the initiative provides support for national and regional policy-making efforts as well as outreach to stakeholders. In 2024, the GFEI updated its toolkit, led on several global networking events, continued its capacity-building work across regions, published research into global vehicle trends and provided expert input into the ZEV Transition Council and International Assistance Taskforce — work that will continue in 2025.

### Global Memorandum of Understanding on Zero Emission Medium- and Heavy-Duty Vehicles (Global MOU)

Launched at COP26, the Global MOU has been signed by 38 countries committed to working together to enable 100% zero-emission new truck and bus sales by 2040, with an interim goal of 30% zero-emission vehicle sales by 2030. Fifteen of the signatories are EMDEs who are currently being supported — including by the ZEV Rapid Response Facility as well as CALSTART's Drive to Zero Program, the Government of the Netherlands, and wider partners — through capacity building and technical assistance to deliver against this ambition. In 2024, the ZEV Island Taskforce also doubled in size — to eight countries — and continues to provide small island state MOU signatories with a platform for experience and knowledge sharing. In 2025, this work will be further scaled, with formalised linkages continuing to be made with wider existing initiatives.

### Global Platform for Sustainable Cities (GPSC)

Funded by the Global Environment Facility (GEF) as part of a broader Sustainable Cities Impact Program, the GPSC is a knowledge platform that supports cities and local governments in undertaking integrated urban planning, implementing policies, and investing in nature-positive, climate-resilient, and carbon-neutral urban development. Led by the World Bank in partnership with several international and regional organisations, a key focus of the GPSC is the development and delivery of multiple learning activities on nature-positive urban development, including sessions on greening cities and urban heat. In 2024, the GPSC's activities have contributed to policy development, planning, implementation, and capacity-building programs at the local, national, regional, and global levels. In 2025, the GPSC will continue to focus on supporting integrated and inclusive urban planning, multilevel action policy development, and municipal finance, as well as knowledge-sharing and capacity-strengthening. In total, the GEF's Sustainable Cities program works with 50 cities across 17 countries, through US$310 million in GEF grants, leveraging nearly US$4 billion in co-financing.

### Global Sustainable Mobility Partnership (GSMP)

GSMP is a network of independent, not-for-profit organisations with decades of practical, real-world experience implementing zero emission mobility. Current partners include Cenex, Cenex NL, Forth, uYilo and the electric MISSION. GSMP provides trusted strategic advice; information and training to build local capacity; supports the design and delivery of high-impact trial and demonstration projects; and provides assistance with programme implementation and evaluation. GSMP has produced reports and case studies highlighting electric mobility strategies that centre around community needs and equity in EMDEs, as well as foundational approaches that focus on equity in charging and vehicle programs. In 2025, GSMP will focus on opportunities to help bring together expertise in electric mobility from the global north and south and share the lessons learned from our experiences to enable an effective, just and equitable transition to zero-emission transport for all.

### Green Climate Fund (GCF)

The GCF aims to accelerate transformative climate action in EMDEs through a country-owned partnership approach that uses flexible financing and climate investment expertise. Several GCF projects have a focus on road transport. For example, the India E-mobility Financing Program launched in 2022 has a total of nearly US$1.3bn co-financing with the private sector and is the GCF's first purely private sector transport programme. In late 2023, the second GCF replenishment process took place for its 2024–2027 strategic period, with transport being a key sector considered for future financing. In July 2024, the GCF approved a US$215.6 million loan for the Small Industries Development Bank of India's (SIDBI) Financing Mitigation and Adaptation Projects (FMAP) — the goal being to help Indian micro, small, and medium enterprises (MSMEs) adopt climate-resilient and low-emission technologies. Electric Mobility is one of the core areas of this initiative. From 2025, the GCF will continue funding a range of projects related to transport and electric mobility, including across Latin America, the Caribbean and Asia.

### High Volume Transport (HVT) Applied Research Programme

The Programme — funded by the UK Government's Foreign, Commonwealth and Development Office (FCDO) — provides transport research that aims to make transport safer, greener, more affordable, accessible, and inclusive in low-income countries. The Programme supports policy, engineering, and technical research into a range of cross-cutting areas, such as climate change mitigation and adaptation, inclusion, gender, road safety, policy and regulation, technology and innovation, and fragile and conflict-affected states, as well as research uptake and capacity building. In 2024, HVT implemented nine research projects based in Africa and South Asia that aimed

to improve aspects of transport systems in low- and middle-income countries. In addition, it also launched support tools, organised several events to spotlight the challenges of achieving inclusive and greener transport, and produced the second series of its Reimagining Motion podcast. The Programme is due to come to a close in 2025, with learnings being used to inform future FCDO and wider UK Government programmes in the road transport sector.

### KPMG's Country Work

KPMG member firms have supported the financing and implementation of several projects on electric vehicles and road transport across the world. This includes supporting Kenya in the development of a framework for assessing investments in sustainable mass modes of urban transportation; India with various sub-national e-mobility projects including a roadmap for an EV skilling centre and upskilling of women drivers; Tunisia with its electric bus strategy; Malaysia with its electric bus transition roadmap; and various projects in the UK for private sector and regional authorities on the funding and financing of EV charging infrastructure (for light vehicles, heavy vehicles, and buses). KPMG has also played a key facilitation and operational role in the ZEV Emerging Markets Initiative, including its activities in India. In 2025, KPMG will continue this work and further support efforts to implement the Global ZEV Transition Roadmap.

### Leapfrogging Partnership

The Leapfrogging Partnership is an initiative of the Drive Electric Campaign to accelerate access to clean vehicles and reduce harmful emissions at local and global scales. Between now and 2050, most new vehicle demand growth will be in EMDEs. While electric vehicles are on the rise globally, the fastest growth is in the places with strong and clear government policies. To close the gap between leading and emerging markets, the Leapfrogging Partnership is working with regional and local leaders to enable strong government policies, business leadership, and diverse coalitions. Powered by philanthropy, the Leapfrogging Partnership has been catalysed by a US$100 million investment from IKEA Foundation, announced in 2024, and was seeded by support from Quadrature Climate Foundation and the Robertson Foundation. In 2025, implementation and scale up of Leapfrogging Partnership's activities will continue.

### Mitigation Action Facility (MAF)

The MAF — previously called the Nationally Appropriate Mitigation Actions (NAMA) Facility — enables EMDE countries to reduce their emissions through implementing sectoral decarbonisation projects as building blocks of Nationally Determined Contribution (NDC) implementation. The MAF awards grant funding through competitive annual calls for project proposals, in which applicants, in partnership with Governments, can request up to approx. £20m (EUR 25m) over 4–7 years. It is currently supporting several ZEV transition projects with a focus on public fleets, including active programmes on sustainable transport in Cabo Verde, Kenya, Nepal, Paraguay, Costa Rica and Rwanda. In 2024, a new funding round resulted in a further tranche of projects on energy, industry, and transport that will continue being developed in 2025.

### NDC Partnership

The NDC Partnership brings together more than 200 members, including more than 120 countries, developed and developing and more than 80 institutions to create and deliver on ambitious climate action that help achieve the Paris Agreement and the Sustainable Development Goals. Governments identify their NDC implementation priorities and the type of support that is needed to translate them into actionable policies and programs. Based on these requests, the membership offers a tailored package of expertise, technical assistance and funding. This collaborative response provides EMDE countries with efficient access to a wide range of resources to adapt to and mitigate climate change and foster more equitable and sustainable development. The Partnership's approach is flexible and country driven, with a number of member countries utilising its matchmaking mechanism to access ZEV-related support.

### NDC Transport Initiative for Asia

The Initiative aims to facilitate a paradigm shift to zero-emission transport across Asia by supporting countries — with a focus on China, India, and Vietnam — to develop and implement comprehensive decarbonisation strategies. At the regional and global level, the Initiative facilitates the sharing of experiences across countries and promotes multi-stakeholder coordination between the public and private sectors. In 2024, activities included developing and delivering capacity building and technical support, facilitating international peer learning, convening focus groups, and conducting analysis. This included projects such as supporting Guangdong Province to develop a greenhouse gas and air pollutant peaking roadmap for transport, working with India to identify contributions of the transport sector to its 2030 NDC, and offering technical support for long-term planning in Vietnam and Thailand. In 2025, these activities will continue. The Initiative is funded by the German Ministry of Economic Affairs and Climate Action through the International Climate Initiative, with projects jointly implemented by GIZ, International Council on Clean Transportation, International Transport Forum, Agora Verkehrswende, SLOCAT Partnership, REN 21, and World Resources Institute.

### Smart Freight Centre Activities

The Smart Freight Centre has taken forward a breadth of activities across regions in support of zero emissions global freight and logistics. It is the leading initiative of the Collective for Clean Transport Finance's electric truck flagship project, in close collaboration with WBCSD, WRI and CALSTART. This includes spearheading activities in India, in support of India's e-FAST programme, to match the collective demand signal given by shippers and OEMs with the needed financial instrument to overcome investment barriers for specific use cases and corridors. In 2024, Smart Freight Centre launched (i) a new report with Bloomberg New Energy Finance that detailed how ZEVs are a viable asset class to enhance greater comfort and interest with financiers to invest at larger scale in this asset class; (ii) a new project to enhance understanding of the impacts of EV adoption on the lives and livelihoods of marginalised communities in India; (iii) the Green Freight program for East Africa, with the Kuehne Foundation, to demonstrate the viability of zero emission trucking; (iv) new courses on emissions accounting, sustainable logistics and decarbonization levers via its expanded Smart Freight Centre Academy; and (v) a project aimed at enhancing capacity and enabling peer-to-peer learning between countries in Africa and Latin America. From 2025, as well as implementing these activities, work will be scaled across more regions such as Southeast Asia.

### SOLUTIONSplus

Since its inception in January 2020, SOLUTIONSplus — a global platform — spearheaded innovation in urban mobility through nine demonstration projects across a network of cities in Africa, Asia, Latin America and the Caribbean, Eastern Europe, and West Asia. It did this though, for example, replicating actions and tools across its network of cities, developing a comprehensive e-mobility toolbox and institutionalising knowledge sharing across its regional hubs that each provided an open platform for co-creation and capacity building. In 2024, SOLUTIONSplus hosted its final event that bought together over 40 partners and expert organisations to discuss the flagship's final results, highlight key accomplishments and agree follow-up actions that will be taken forward by wider partners and initiatives from 2025.

### Transformative Urban Mobility Initiative (TUMI) E-bus Mission

The TUMI E-bus Mission supports the deployment of electric buses in 20 selected cities across Africa, Asia and Latin America. The Mission focuses on forming global- and city-level coalitions of private and public sector actors, developing electrification roadmaps and targets, and facilitating

knowledge sharing through training and workshops within a broader city network. The mission is supporting cities with preparations for the procurement of 100,000 electric buses by 2025. Activities in 2024 — which will continue in 2025 — included the continuation of technical support for the 20 selected cities; the realisation of financing academies and investor roundtables to progress with procurement processes; and the delivery of trainings, workshops, webinars and in-person city dialogues within the TUMI City Network. This included the elaboration of recommendations on including gender equity, workforce wellbeing and circular economy aspects into electric bus deployment.

### UK Partnering for Accelerated Climate Transitions (UK PACT)

UK PACT is a UK Government funded programme that supports EMDE countries with high mitigation potential to increase their climate ambition and implement related policies more rapidly, effectively, and equitably. The programme, which explicitly focuses on partner government's needs and priorities, supports projects related to electric mobility in several partner countries under the programme, including Colombia, Mexico, Indonesia, and India. In 2024, the majority of UK PACT's work on transport has been in Indonesia and Colombia. In 2025, new activities on road transport will also be launched in Thailand.

### UrbanShift

Funded by the Global Environment Facility (GEF) as part of a broader Sustainable Cities Impact Program, UrbanShift is supporting 23 cities across 9 countries with integrated urban planning, low-carbon infrastructure, sustainable waste management and nature-based solutions for urban sustainability. Led by UN Environment Programme (with implementing partners including World Resources Institute, C40 Cities, ICLEI, the World Bank and the Asian Development Bank), UrbanShift develops and delivers technical resources, training (including via the UrbanShift's City Academy) and facilitates knowledge exchange opportunities. Since 2023, the initiative has focused on project implementation across focus countries, launched a new online city academy for sustainable urban planning, published several key reports, and hosted a range of events, including its first Asia Forum that convened public and private sector stakeholders to exchange knowledge on regional urban challenges and solutions. In 2025, the above activities will continue as well as work to further develop a knowledge and learning platform that connects cities worldwide with the tools, training and advocacy needed to put strategies into action. In total, the GEF's Sustainable Cities program works with 50 cities across 17 countries through US$310 million in GEF grants, leveraging nearly US$4 billion in co-financing.

### Zero Emission Area Programme

The Zero Emission Area Programme supports Green and Healthy Streets signatory cities and partners who are seeking to establish a major area of their city as zero emission by 2030. For example, on-request support is provided for areas such as Low Emission Zones, Zero Emission Delivery Zones and congestion charging. In 2024, the Programme supported and implemented research, engagement, and capacity building across regions. This included a series of webinars and training on equity and zero emission area transport policies, alongside trainings, workshops, webinars and in-person city dialogues for signatory cities and partners. Plans are also underway to launch a coalition on clean air policies with doctors and other health sector professionals.

### Zero Emission Bus Rapid-deployment Accelerator (ZEBRA) Initiative

The ZEBRA Initiative looks to accelerate the deployment of zero emission buses in major Latin American cities by providing direct support to cities (Bogotá, Medellín, Mexico City, Santiago, São Paulo and Valparaíso) and by carrying out work, in partnership with bus manufacturers and financial institutions, to establish a procurement pipeline of over 6,000 e-buses in the region.

The initiative also focuses on knowledge sharing activities, including via the E-Bus Radar platform. In 2024, the ZEBRA Initiative expanded to South Africa and India, helped to develop national level financial mechanisms to foster e-bus adoption in Brazil and Colombia, undertook wider work on battery degradation and convened an e-bus investors roundtable, amongst other actions that will continue into 2025.

### ZEV Emerging Markets Initiative (ZEV-EMI)

Launched at COP27 by the US and UK Governments (on behalf of the ZEV Transition Council), in partnership with the World Business Council for Sustainable Development, the ZEV-EMI fosters focused dialogues across businesses and governments in EMDEs to help forge partnerships that can expedite private investments and bolster supportive public policies to enable a faster transition to ZEVs. Since 2023, the ZEV-EMI has helped shape collective action to craft public-private sector agreements in EMDEs and convened business leaders along the ZEV value chain to create transport decarbonization strategies and inform charging infrastructure roadmaps. In 2024, as well as continuing its collective action under the ZEV Country Partnership with India on e-freight and infrastructure, the ZEV-EMI announced its expansion — including replicating its demand aggregation framework — in Mexico and Brazil, which will be a key focus in 2025.

### ZEV Rapid Response Facility (ZEV-RRF)

The ZEV-RRF provides agile technical support to EMDE countries that have signed the ZEV Declaration for cars and vans and/or Global MOU on Zero Emission Medium- and Heavy-Duty Vehicles. It aims to help countries fulfil their ambitions by implementing short-term (18 months or less) tangible projects and providing countries with a single point to access a broad network of support providers and world-leading experts. In 2024, the ZEV-RRF's expert network was expanded, and bespoke projects were taken forward in countries. The ZEV-RRF Country Dialogues — a key action under the Global ZEV Transition Roadmap, also known as the 'Country Cluster Initiative', that aims to enhance country-country dialogue and knowledge sharing — was also piloted with a small set of countries. In 2025, the ZEV-RRF's expert network, project pipeline and country dialogues will all be further scaled.

### ZEVWISE

The ZEVWISE coalition — which is being spearheaded by the Government of the Netherlands and CALSTART's Drive to Zero Program — provides a framework to coordinate technical support and expertise on medium- and heavy-duty vehicles as well as charging infrastructure. In 2024, ZEVWISE focused on moving from knowledge sharing to tangible project implementation, announcing the shared goal to advance 10 zero-emission freight corridors, across EMDE and non-EMDE countries, by 2026. It has also facilitated knowledge sharing around implementation learnings, scaled its network of partners, delivered webinars and hosted events on financing the transition to zero emission transport and charging infrastructure-related subjects. Partners include the Government of the Netherlands, CALSTART's Drive to Zero program, International Council on Clean Transportation, the Smart Freight Centre, the Electric Vehicles Initiative, the World Bank, WBCSD, the International Transport Forum, the UN Environment Programme and governments. In 2025, ZEVWISE will continue advancing toward the delivery of the proposed corridors, set up an online resource for centralised corridor knowledge, and identify additional opportunities to accelerate implementation across EMDEs, including exploring how and where support could be enhanced on these vehicle segments.

ZEV TRANSITION COUNCIL

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