






Supporting the Global Shift to Electric Mobility

UNEP Global Electric Mobility Programme

To meet the targets of the Paris Climate Agreement and to reduce increasing air pollution, it is essential that low and middle-income countries are part of a global shift to zero-emissions electric mobility. The United Nations Environment Programme (UNEP) together with leading international organizations and in collaboration with partners from the private sector, finance and academia have developed a new global programme to support the shift to electric mobility in low and middle-income countries worldwide.

The current landscape

"The transport sector is significantly responsible for climate change. 23% Of all carbon dioxide emissions are from transport activities."

Intergovernmental Panel on Climate Change, Fifth Assessment Report

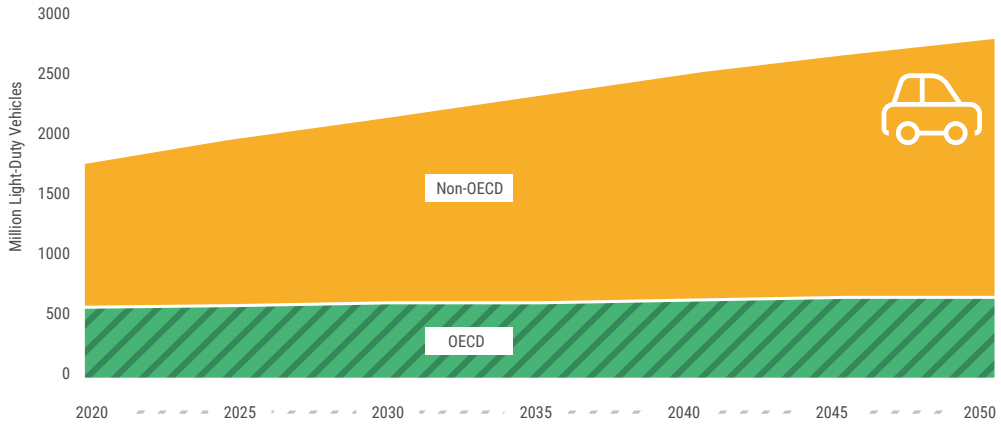
The Intergovernmental Panel on Climate Change (IPCC) stated that "high growth rates are now appearing in electric vehicles, electric bikes and electric transit, which would need to displace fossil-fuel-powered passenger vehicles by 2035-2050 to remain in line with 1.5-degree Celsius pathway".

The transport sector is the fastest-growing greenhouse gas (GHG) emitting sector, expected to reach a share of more than 30% of total GHG emissions in the future. It is also a leading emitter of short-lived climate pollutants and it contributes greatly to air pollution.

The global vehicle fleet is set to double by 2050, with more than 90 per cent of future vehicle growth projected to take place in low and middle-income countries.

In the last 20 years, electric vehicles have experienced significant technological developments that have not only lowered their costs but also reduced their environmental footprint and increased their utility. At the same time, public transport and shared mobility are key ingredients for efficient transportation. The introduction of electric vehicles in fleets is often the first step to overcoming challenges and barriers to electric mobility and is critical to its wider adoption around the world.

Growth in Light-Duty Vehicles 2020-2050



CO-BENEFITS OF SHIFTING TO E-MOBILITY

Reduced air pollution which will ultimately lead to improved public health and improved quality of life

Reduced dependence on petroleum fuel, which in many low-and-middle-income are fully imported posing a thread to economic stability

Increased development potential for low-and-middle income through the creation of "green jobs" as a result of local EV assembly and manufacturing opportunities

About UNEP's Global Electric Mobility Programme

UNEP's Electric Mobility Programme is operational at the national, regional and global levels. At the national level, more than 50 low and middle-income countries are supported with the introduction and shift to electric mobility through the Programme and associated projects such as the SOLUTIONS+ project implemented by the Urban Electric Mobility Initiative (UEMI).

At the regional level, UNEP together with the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), and the Centro de Movilidad Sostenible has established four Support and Investment Platforms to create communities of practice and e-mobility market places.

At the global level, the programme advocates for e-mobility targets and policies. Together with the International Energy Agency (IEA), the programme has established four Global Working Groups to provide policy advice and to support the national projects.

Altogether, the programme has mobilised the Global Environmental Facility (GEF), the European Union, the German Climate Initiative, the Climate and Clean Air Coalition, the FIA Foundation, foundations and other bilateral donors that have contributed more than USD 70 million for its implementation.

About the Country and City Projects

More than

50

electric mobility projects worldwide are supported to

- Carry out stakeholder consultations
- Access a network of global, regional and sub-regional partners and experts that can help with the implementation of e-mobility projects
- Develop institutional framework for electric mobility
- Develop impact assessments and cost-benefit analyses
- Pilot and demonstrate electric vehicles
- Assess and develop e-mobility policies and regulations
- Prepare fiscal reforms to incentivize e-mobility
- Assist national policy implementation
- Develop business models
- Have better access to finance for electric mobility

About the Regional Support and Investment Platforms

In cooperation with the ADB, the EBRD and the Centro de Movilidad Sostenible, four Regional Support and Investment Platforms are established to support countries and cities in Africa; Asia & the Pacific; Eastern & Central Europe, West Asia and the Middles East; and Latin America & Caribbean with the shift to electric mobility through:

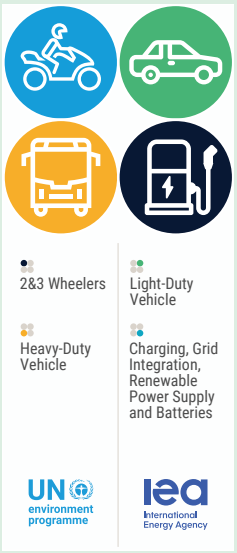
The Regional Platforms are open to all countries and cities in the region, interested in developing electric mobility projects.

About the Global Working Groups

Experts from the private sector, governments and civil society are invited to join the Working Groups to

- Develop and discuss global and regional targets for the shift to electric mobility
- Provide policy advice and to bring forward the global harmonization of e-mobility standards and regulations
- Develop tools to support e-mobility projects worldwide
- Support e-mobility pilots with technical guidelines, methodologies for data collection and reporting
- And to develop business models and finance schemes for national projects

4 Global Electric Mobility Working Groups



All e-mobility knowledge products including policy briefs, technical guidelines, business models, financing schemes are accessible through the online E-mobility toolbox: https://emobility.tools/

E-mobility projects in focus

Electric 2 & 3 wheelers

Mobility based on motorcycles and three wheelers is key to transport systems in Africa, Asia and some parts of Latin America. Very often, these vehicles go daily distances of 100 kilometres and more, transporting passengers and goods and satisfying mobility needs of millions of customers. However, these vehicles are very often based on outdated technologies rendering them energy inefficient and polluting. Electrification of two & three wheelers therefore constitutes a significant potential for greenhouse gas and air pollutant emission mitigation.

In Kenya twice as many motorcycles as cars are added to the fleet every year, most of them used as taxis. With daily distances travelled being two times higher compared to cars, their total amount of fuel consumed almost equals the passenger car fleet. At the same time, in the absence of any emission control technologies and based on old engine technology, the Kenyan motorcycle fleet is estimated to emit three times the particulate matter emission and about the same emissions of nitrous oxides compared to cars.

Electric Buses

Many low and middle-income countries are still characterized by rapid urbanisation. Public mass transportation including the use of scheduled buses and informal services based on mini and midi-buses are a cornerstone of urban mobility. Many cities in Africa, Asia and Latin America are now investing in better transport systems and infrastructure, often including high capacity bus lines and bus rapid transit systems (BRT). With lifetime spans of buses at an average of 12 years or more, action is needed to prevent these new transport systems being locked-in with outdated and inefficient bus technology.

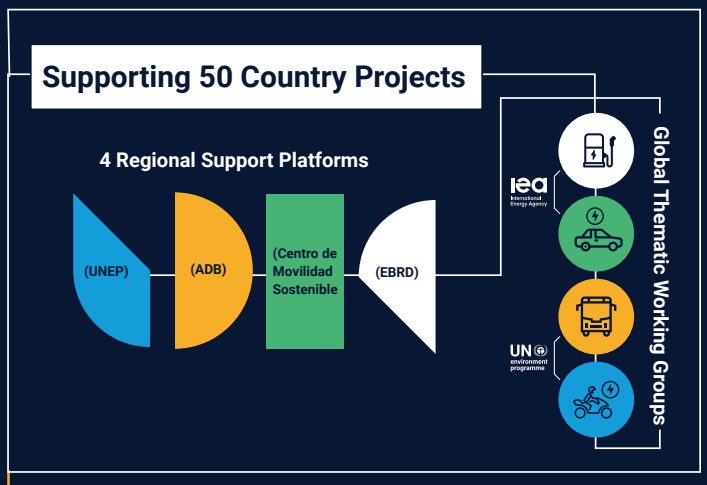
The introduction of electric buses within the Transantiago / Red Metropolitana de Moviliad (RED) in Santiago de Chile provides a successful example on how to scale up from two pilot e-buses demonstrated in 2017 to more than 800 e-buses operational in 2021 – based on innovative business models, adequate policy frameworks and powerful partnerships between City Government, transport operators and energy suppliers & financiers.

Electric Light Duty Vehicles

Globally, passenger cars have by far the highest potential for greenhouse gas emission reductions. In 2018, light duty vehicles accounted for almost 50% of all transport emissions, including rail, marine and aviation. Many of the leading car manufacturers have set ambitious targets to introduce hundreds of new EV models in the next five years. Used within taxi fleets with high annual driving distances, the total cost of ownership of EVs are substantially lower compared to conventional cars.

The market share of EVs for private use is noticeably increasing in some Eastern European countries such as Ukraine, purely based on financial considerations. Since 2018, Ukraine waived import duties and VAT on imported electric vehicles, resulting in thousands of used EVs being imported yearly since then. By 2020, more than 10,000 EVs mostly used imported from the U.S. populated the roads in Ukraine.

Greenhouse Gas Emission Savings and Environmental Sustainability



GHG emissions reductions

180 million tons of CO_2

Electric mobility is the most efficient pathway to directly benefit from clean power in the transport sector, and Country Projects part of the UNEP Global Electric Mobility Programme are projected to lead to greenhouse gas emission reductions amounting to 180 million tons of CO_2 over the next 15 years.

The UNEP Global Electric Mobility Programme is targeting the nexus of e-mobility and renewable power integration in many ways, for example through the integration of off-grid solar power generation with the use of electric 2&3 wheelers in projects across Africa or though investigating the enabling role e-mobility can play for the integration of high shares of variable renewable power in Small Island Development States (SIDS).

Circularity and recycling of materials are a key element for sustainable e-mobility and end-of-life (EOL) issues will play a crucial role in the UNEP Global Electric Programme, including the development of schemes to re-use, recycle and safely dispose used EV batteries.

In partnership with:

UNEP Global Electric Mobility Programme

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