

NEWSLETTER

E-Mobility Investment Platform
for Asia and the Pacific

August 2024

E-mobility support and investment platform updates

The e-mobility platform for Asia and the Pacific designed the Needs Assessment Survey to capture the perspectives of key stakeholders in the e-mobility sector, focusing on four primary areas: the current status of electric vehicle (EV) adoption, drivers and barriers to EV adoption, the e-mobility community, and stakeholder interests. By addressing these areas, the survey aims to inform community engagement and guide future project directions effectively.

The survey was distributed electronically via ADB channels starting on 26 July 2023. By 19 August 2024, it garnered 84 complete responses, with participants from various organizations including the ADB, government bodies, international organizations, academia, and the private sector. Notably, responses were collected from individuals in 42 countries, primarily in mainland Asia, though participation from Small Island States was limited.

Key Findings of the survey were:

- The survey revealed that while EV adoption is prioritized across regions, actual readiness is generally low to medium, indicating a gap between ambition and implementation. Buses, coaches, private cars, and two-wheelers were seen as the most suitable modes for e-mobility, whereas aircraft and water vessels were less favored.
- Key drivers for EV adoption include low usage costs, subsidies, and national interests such as reducing fossil fuel dependence and improving air quality.

However, significant barriers remain, including high ownership costs, insufficient government investment, lack of infrastructure, and gaps in policy and public awareness.

- Participants identified relevant ministries and specific organizations as key stakeholders in their regions. For example, in Nepal, the Electric Vehicles Association of Nepal was highlighted, while in Thailand, the National Electric Vehicle Policy Committee was noted. There was widespread interest in connecting with the e-mobility community, though slightly fewer respondents prioritized networking with EV providers.
- Respondents showed strong interest in topics like financing and business models, e-mobility roadmaps, and e-bus implementation. Commonly desired projects included e-bus and e-taxi development, electric two-wheelers, and climate financing initiatives.

Overall, the survey underscores a collective willingness to advance e-mobility, with stakeholders eager to engage in community-building and share knowledge, despite facing notable challenges in cost, infrastructure, and policy.

Message from ADB

Thanks to the growing interest of participants, the e-mobility platform continues to operate successfully. A total of 610 audience joined the platform webinars, which were held 19 times since June of last year, and various e-mobility topics were discussed with different speakers in each session. Furthermore, two in-person training workshops for the platform community participants were held in Seoul and Manila respectively. Sincere appreciation again, and we ask for your continued interest in the platform.

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BE PART OF THE PLATFORM
by filling this survey form



Why Electrify Active Modes?

Asia and the Pacific E-mobility Platform Team



Walking and cycling represent the least carbon intensive modes of transport producing an average of 0g.CO2 /km and 8g.CO2 /km respectively and are notable for their wider public health and activity-related benefits.

Uniquely, therefore, electrifying active modes usually leads to an increase in carbon intensity. An e-bike, for example, typically generates 18g.CO2 /km – an increase of 10g.CO2/km relative to its human-powered equivalent – while an electric dockless kick scooter can generate as much as 102g.CO2 /km making it even more polluting than a gasoline-powered scooter (90g.CO2 /km) or even an electric car (99g.CO2 /km).

For electric transport, much of the pollution generated relates to embodied carbon obtained in the material acquisition and/or manufacturing stages, especially in relation to batteries and motors. For electric dockless kick scooters, significant carbon is also emitted through the maintenance of fleets as this process often relies on vans being deployed and driven around cities to collect and redistribute the vehicles. Due to operational challenges, these vans are

often powered by gasoline or diesel and are therefore carbon intensive.

To see how different urban modes of transport rank based on average transport emissions please refer to the [chart](#) by Schunck (2022). The chart not only considers carbon emissions from direct and indirect operations but also takes into account the emissions involved in manufacture, disposal and maintenance of fleet.

The case for electrifying active modes is borne from the additional usage and the modal substitution impacts that can be obtained. Research suggests that an electric bicycle is typically ridden up to twice as far as a conventional pedal cycle which delivers improved utility and capability for the rider.

In many countries in Asia, especially in parts of Southeast Asia where scooters have come to dominate, there has been an historic tendency to trade a non-motorised two-wheeler for a motorised two-wheeler as wealth and incomes grow. This transition leads to an increase in carbon emissions from 8g.CO2 /km to 90g.CO2 /km. However, if this shift occurred to an electric scooter or

an electric bicycle instead then emissions would increase to around 21g.CO2 /km or 18g.CO2 /km respectively.

Therefore, while electric active modes generate more carbon emissions per km than their non-motorised counterparts, there may be a net carbon saving where they are used more intensively and used instead of other higher polluting modes.

Electrification may also create opportunities for a broader demographic of people to engage in active travel. This includes older people and more sedentary people for whom engaging in moderate activity may be a barrier to participation in itself.



Asia EV Outlook: Armenia

Sudhir Gota and Alvin Mejia, Asia Transport Outlook (ATO)

The Asian Transport Outlook (ATO) project - supported by the Asian Development Bank and the Asian Infrastructure Investment Bank - together with the Urban Electric Mobility Initiative (UEMI) and the EU-supported SOLUTIONSplus project, are producing e-mobility profiles that focus on taking stock of the main developments relating to e-mobility transition in Asian economies. This edition of the newsletter presents the profiles for Armenia.

Armenia, a small, landlocked South Caucasus nation with 3 million people, has seen strong economic growth, driven by services and IT sectors. Rapid urbanization and economic expansion are expected to drive growth in transportation which is a significant source of Armenia's carbon emissions.

Armenia is witnessing a notable increase in electric vehicle (EV) adoption. From just 12 electric cars imported in 2018, the number surged to 7,181 in 2022, as reported by the

Ministry of Environment. This momentum continues with Yerevan receiving its first electric bus in October 2023, paving the way for 250 more buses, with potential support from the European Bank for Reconstruction and Development.

Despite this growth, Armenia faces challenges, including a lack of official statistics on charging stations and no set regulations for their development. Currently, the country's EV network comprises fewer

than 30 medium-speed charging stations, and around 90% of EVs are charged at home.

Armenia's electricity grid is among the cleanest in the region, with 60% of its electricity coming from zero-carbon sources like hydro and nuclear power. The average electricity price is relatively low at \$0.07/kWh, and the country aims to further diversify its power generation with up to 1,000 MW of solar capacity by 2040. However, the transition to EVs will require overcoming obstacles such as high costs, inadequate infrastructure, and regulatory gaps.



Detailed report can be found [here](#)



Webinar Series

E-mobility Support and Investment Platform for Asia & Pacific

The Asia and the Pacific e-mobility platform delivered six interesting webinars between April and June 2024. The key outcomes of those webinars were:

10 Apr 2024

[Click to view recording.](#)

Opportunities for Second Life Batteries and BESS in DMCs

Yu Tack Kim, Adjunct Professor at Dongshin University

Battery reuse is cost-effective, using cheaper end-of-life EV batteries. Essential steps include early-stage evaluation technologies, life cycle assessments, and battery passports. Used EV batteries can also be repurposed as energy storage devices.



24 Apr 2024

[Click to view recording.](#)

EV Second-hand Market Development: Korean Case Study

Jiwoon Kang, Senior Transport Specialist at Asian Development Bank

EV batteries degrade 2-3% annually, impacting second-hand value by up to 400%. Battery longevity affects new EV prices, making reputation vital for OEMs. State of Health assessments certify performance but may conceal degradation trends.



08 May 2024

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Accelerating Freight Decarbonization in Asia: Lessons from eFAST India

Sharvari Patki, Program Head, Electric Mobility, WRI India

Freight decarbonization is vital as road freight could be 60% of India's transport emissions by 2050. The eFAST platform promotes zero-emission trucks, focusing on battery electrification and policy measures for cost parity.



22 May 2024

[Click to view recording.](#)

Developing a Robust EV industry to Accelerate E-Mobility Adoption in the Philippines

Karl Lyndon B. Pacolor, Division Chief at Department of Trade and Industry, Philippines

The Philippines advances EV assembly and deployment through the Electric Vehicle Industry Development Act, leveraging tax incentives and local resources. The DTI-BOI-UNIDO project further supports rapid EV adoption and manufacturing.



05 Jun 2024

[Click to view recording.](#)

Learnings from Implementing Urban Living Lab to Accelerate E-Mobility in Emerging Economies

Shritu Shrestha, Senior Researcher at Wuppertal Institute

Urban living labs innovate urban planning. The EU-funded SOLUTIONSplus project promotes sustainable mobility, addressing challenges in emerging economies through capacity building. Scaling requires political support and robust policies.



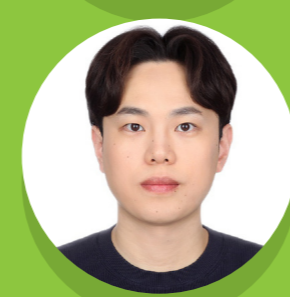
19 Jun 2024

[Click to view recording.](#)

Electrifying Petrol-Powered Motorcycles in Indonesia

Michael CHANG, Global Team Manager at BlueWing Motors

BlueWing Motors converts fuel motorcycles to electric in Indonesia, targeting emissions from 120 million vehicles. Government incentives, quality conversion kits, and charging infrastructure support adoption, providing economic and social benefits.



News in short..

ADB's Support to E-Mobility Transition in Thailand

The Asian Development Bank (ADB) supports Thailand in promoting sustainable transport to reduce traffic congestion and emissions in Bangkok. Since 2018, ADB has mobilized over \$450 million for e-mobility projects, including rail and road transport. ADB catalyzed funding for the Bangkok Mass Rapid Transit Pink and Yellow Lines and provided financial support for 1,500 e-tuktuks and 1,200 e-buses. These efforts aim to help Thailand achieve its net-zero commitments by 2065 through innovative finance solutions.

Read more here: [ADB's Support to E-Mobility Transition in Thailand](#)

ADB Approves Support to Improve Urban Mobility in India

The Asian Development Bank (ADB) approved a \$200 million loan to expand Nagpur's metro rail corridors, enhancing transport connectivity and easing commutes. The Nagpur Metro Urban Mobility Project will extend four metro rail corridors, constructing 43.8 km of elevated tracks with 32 stations. ADB's support will improve connectivity with city transport services, promote nonmotorized transport, and provide last-mile connectivity. Additionally, the project includes a 5-year action plan for gender equality, digital project management improvements, and training programs to boost employment for women and disadvantaged groups.

Read more here: [ADB Approves Support to Improve Urban Mobility in India](#)

ADB Signs \$50 Million to Energy Transition in Asia and the Pacific

The Asian Development Bank (ADB) committed \$50 million to the Actis Asia Climate Transition Fund to accelerate the clean energy transition in Asia and the Pacific. The fund will invest \$50 million–\$200 million per company in renewable energy and sustainable transportation. ADB's investment will help build climate-resilient infrastructure, adopt climate-smart technologies, and enhance gender-inclusive practices of investee companies.

Read more here: [ADB Signs \\$50 Million Commitment to Accelerate Energy Transition in Asia and the Pacific](#)



E-Mobility Acceleration - Asia and the Pacific Transport Forum

One of the key messages from the event was the importance of learning across countries in the region and beyond. Also, collaboration between a diverse range of stakeholders within countries, including civil society and the private sector, was considered beneficial for national e-mobility acceleration. More support will be needed for the transportation modes that are harder to electrify, including trucks, inter-urban buses, and ferries, as their electrification is generally not considered commercially viable. Electrification of transport will have an impact on jobs in the region, and for ensuring that negative impacts are minimized, governments can create longer-term just transition plans. It is also key to empower vulnerable groups, assure fairness of value chain systems, and ensure all stakeholders are on-board in policy development.

A panel discussion was attended by countries with GEF-7 supported projects on e-mobility (Indonesia, Malaysia, and Philippines). As key concerns, they raised the affordability of EVs, access to finance, a lack of regulated

second-hand markets, challenges rolling out EV charging infrastructure, sustainable battery management, and social resistance and misconceptions. On the other hand, the development of supportive policy landscapes, public-private collaboration for EV charging installation, and partnerships and collaborations for fostering a whole-of-society approach in the development of an e-mobility industry were considered as opportunities in these countries.



EV Charging Development in Malaysia

Nur Zuriyany Zaki, National Project Manager GEF7-UNIDO Project Accelerating the Adoption & Scale-up of Climate-Smart Transport in Malaysia (AASCT) at Malaysian Green Technology and Climate Change Corporation (MGTC)

Malaysia is seeing a significant rise in electric vehicle (EV) adoption, fueled by global trends and government incentives. These include tax exemptions for imported EVs (with a minimum value of RM100,000) until 2025, and for locally assembled EVs until 2027, along with tax allowances for green investments in EVs and related infrastructure. The nation's Low Carbon Mobility Blueprint (LCMB) and National Energy Transition Roadmap (NETR) set ambitious targets: 20% of the Total Industry Volume (TIV) by 2030, with an interim target of installing 10,000 EV chargers by 2025 to alleviate concerns about accessibility and range anxiety.

As Southeast Asia's third-largest automotive producer, Malaysia aims to become a regional leader in EV production, leveraging its strong automotive and electronics industries. The New Industrial Master Plan 2030 (NIMP2030) envisions Malaysia as a hub

for affordable EVs, with Proton and Perodua driving this initiative. To support this growth, the government has implemented robust policies, approaching 3,000 public EV charging stations and developing a domestic supply chain for key components, including advanced batteries. The [Malaysia Electric Vehicle Charging Network \(MEVnet\)](#) offers a dashboard mapping of current and planned EV charging locations, aiding effective infrastructure planning and monitoring.

A significant initiative is the GEF-financed and UNIDO-supported project focused on renewable energy-based smart charging solutions, Vehicle-to-Grid integration, battery swapping, and fostering a circular economy for EV batteries. This project is pivotal in addressing the infrastructural and technological challenges associated with widespread EV adoption.

Malaysia's approach emphasizes collaboration between government bodies, industry partners, and international organizations. This collective effort ensures that the policies are not only comprehensive but also pragmatic and tailored to the local context. The establishment of National EV Steering Committee and Task Force facilitates such collaborations, enabling stakeholders to co-create solutions for accelerated adoption of zero-emission trucks and other e-mobility innovations. The strategic initiatives are expected to yield broader economic and social benefits, including job creation and reduced operational costs for vehicle owners.

Malaysia's proactive policies and innovative projects build a strong foundation for e-mobility, emphasizing infrastructure, industry collaboration, and incentives, setting a model for emerging economies transitioning to sustainable transportation.



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