DRAFT

Asia-Pacific Initiative on Electric Mobility

Background Note

August 2022

1. Introduction

This document outlines a draft concept for the proposed Asia-Pacific Initiative on Electric Mobility. The purpose of the initiative is to promote acceleration of transition to electric mobility in public transport and support reduction of GHG emissions and the implementation of the Paris Agreement. The initiative can promote the sharing of experience and knowledge among member countries, policy makers and wider transport stakeholders working in the area of electric mobility.

2. Background

Globally, transport energy demand has been rising faster than any other sector. This results in increase in energy consumption in the transport sector, which is set to continue to grow, with the greatest growth in Asia[1]. In the Asia-Pacific region, the transport sector accounts for 19 per cent of the total final energy consumption. In 2019 the consumption was 33 million TJ, which has tripled since 2000[2] due to the rapid growth in population and economic development.

More than 50 per cent of the population of the Asia-Pacific region are living in urban areas and the share of urban population will reach to 66 per cent in 2050. This growing population will also mean an increase in travel demand. Under the current trajectory, passenger transport demand in Asia is estimated to double by 2050.

The growing levels of transport demand will result in the rapid increase of CO2 emissions. ITF estimates that in the business-as-usual scenario, transport CO2 emissions in Asia will increase by 47 per cent in 2050 compared to 2015. This rapid increase can be explained by the dependence of the sector on fossil fuels. In the Asia-Pacific region, oil products accounted for 84 per cent of transport consumption in 2019[3]. IEA (2021)[4] estimates that oil products will still account for 75-80 per cent of transport consumption in 2030, due to the limited uptake of alternative fuels in the transport sector.

[1] UN Department of Economic and Social Affairs, Interlinkages Between Energy and Transport, Policy Brief No. 16. Bangkok, 2018.
[2] UN Statistics Division (https://unstats.un.org/unsd/energystats/dataPortal/).
[3] UN Statistics Division (https://unstats.un.org/unsd/energystats/dataPortal/).
[4] https://iea.blob.core.windows.net/assets/4ed140c1-c3f3-4fd9-acae-789a4e14a23c/WorldEnergyOutlook2021.pdf

Road vehicles are the major contributor to transport CO2 emissions. In the majority of ESCAP countries, the final energy consumption share of road transport in 2019 is over 70 per cent[5]. The highest share of emissions from urban passenger transport come from private vehicles. In 2015, around 60 per cent of urban passenger CO2 emissions in Asia emitted by private vehicles[6]. The increase in travel demand and the associated CO2 emissions can be addressed sustainably by promoting public transport and electrifying it at the same time.

The "Paris Declaration on Electro-Mobility and Climate Change and Call to Action" states that limiting the global temperature increase to below 2 degrees Celsius requires changing the transport emissions trajectory, through "an integrated electromobility ecosystem encompassing various transport modes, coupled with the low-carbon production of electricity and hydrogen…" and that the transition will require "at least 20 per cent of all road transport vehicles globally to be electrically driven by 2030"[7]. The UNFCCC COP26 held in Glasgow recognized that rapid, deep, and sustained reductions in global greenhouse gas emissions and CO_2 emissions are necessary to limit global warming to 1.5°C[8]. It also called for speeding up the switch to electric vehicles. Electric mobility shifts to renewable energy sources, and the improvement of public transport are some of the key transport strategies listed in the nationally determined contributions of Asian countries.

Electrification of the public transport in cities can accelerate emission reduction from the transport sector. Accelerating the development of electric public transport while utilizing renewable energy, will immensely contribute to meet the decarbonization target by 2050. It is also considered as a low-hanging fruit, not only because public transport vehicles cover large distances daily, but also because it is often controlled or regulated by the Government, which creates a larger space for influencing its developments.

3. The need for Asia-Pacific Initiative on Electric Mobility

Many countries in the Asia-Pacific region have high renewable energy mix, which creates potential for adoption of electric mobility, increase energy security as well as contribute to foreign exchange savings by reducing import of fossil fuels. However, their existing policies focus mostly on either private cars or electric two and three wheelers and lack comprehensive policy and strategy that supports commitments made in the Nationally Determined Contributions. There remains an opportunity to develop short-, medium and long-term comprehensive polices and strategies with focus on public transport fleets and high mileage vehicles.

Despite the potential benefits of electric mobility, electrifying urban public transport has been facing many challenges from high up-front costs, lack of standardized and interoperable charging infrastructure, technologies for battery disposal and recycling that are yet to mature but become an urgent issue to deal with, and lack of human resources and institutional capacity. For national governments, electric vehicles also bring new challenges in urban management and fiscal policies.

[5] UN Statistics Division (https://unstats.un.org/unsd/energystats/dataPortal/).
[6] ITF Transport Outlook 2021.
[7] UNFCCC. Sourced from https://unfccc.int/documents/23227
[8] UNFCC (2021), Glasgow Climate Pact, COP26

At the same time, some countries[9], in region have successfully overcome such challenges and made progress particularly in promotion and use of electric and hybrid vehicles.

Accelerating the transition to electro-mobility at scale will require robust fiscal, regulatory and infrastructure policy frameworks that engage all relevant stakeholders in the development of an electric vehicle ecosystem that include manufacturing, charging infrastructure, technology, financing mechanism, human resources and consumers. There is thus an opportunity to share the experience and lessons among countries across the Asia-Pacific region.

UNEP's Global Electric Mobility Programme[10], Electric Vehicles Initiative (EVI) of the International Energy Agency (IEA)[11], and Zero Emission Bus Rapid-deployment Accelerator (ZEBRA) Partnership[12] are some of the global collaborative platforms on electric mobility. There is a huge variety and type of public transport modes in Asian cities, such as high share of two-wheeler and three-wheeler in vehicle fleet, existence of many forms of paratransit, low share of public transport in many developing cities, high share of active mobility, creating a requirement to integrate across modes. Asian countries are also at different stages of public transport development and that provides opportunities to plan for environmentally sustainable public transport systems and initiate reforms. Given the distinct structure of the public transport in Asia-Pacific region, a regional initiative on electric mobility could enhance exchange of experiences and peer learning as well to extend policy support to countries on transition towards electric mobility. Different stakeholders involved in planning and operation of public transport systems such as government, private sector, academia, international and regional organizations will have to work together to accelerate the transition.

4. Objectives

Whilst a strong international consensus exists on the mitigation of emissions and transition to net zero emissions, actionable policies and their implementation are still evolving. Even if identified, policies are challenging for developing countries to implement, as they lack the necessary expertise, technological knowhow, and the financial means for ensuring success.

The objectives of the proposed Asia-Pacific Initiative on Electric Mobility are to:

- support the acceleration of transition to electric mobility in the region
- enhance regional cooperation, provide opportunities for peer learning and sharing of experiences among private and public sector stakeholders working in the areas of electric mobility
- strengthen the capacity of Asia-Pacific countries to formulate national policies and strategies to accelerate transition towards electric mobility focusing on public transport fleets;
- enhance multi sectoral collaboration among energy, transport, finance, and other sectors
- develop a knowledge base on electric mobility ecosystem.

[9] Countries such as China, India, Republic of Korea, Japan, Thailand, Singapore, Japan have initiated some polices for promotion of manufacturing and use of electric and hybrid vehicles.
[10] https://www.unep.org/explore-topics/transport/what-we-do/global-electric-mobility-programme
[11] https://www.iea.org/programmes/electric-vehicles-initiative
[12] https://theicct.org/initiatives-partnerships/zebra/

It would result in synergies in accelerating the adoption of policies and their implementation, promote development of related sectors- energy, battery, charging infrastructure and create new business opportunities, besides contributing to overall economic and technological progress. It would also help countries to fulfill their commitment to the Sustainable Development Goals (SDGs) targets 7.2, 7.3, 11.2, and indirectly to several other targets.

The concept of the Asia-Pacific Initiative on Electric Mobility has been introduced and supported at the national workshops in Georgia[13], Nepal[14], and Lao People's Democratic Republic[15] held in the framework of a Technical Cooperation Project entitled "Accelerating the transition to electric-mobility for public transport in Asia and the Pacific". It will also be introduced at the *Regional Meeting on Just Transition to Low Carbon Mobility in Asia and the Pacific*[16] on 10-11 August 2022 in Bangkok. Feedback from the meeting participants will be collected to further shape the concept, to be used as inputs to develop terms of references for possible consideration by future ESCAP legislative meetings such as the Committee on Transport.

5. Benefits of the Initiative

The Asia-Pacific Initiative on Electric Mobility can offer the following benefits to the participants:

- Connecting with other countries with similar challenges in promoting electric mobility focusing on public transport;
- Networking with EV industry to stay updated on latest EV technologies, EV Ecosystem, charging infrastructure, and financing models;
- Opportunities to participate in technical training workshops and capacity building activities, organized within the Initiative.

Countries with substantial share of renewable energy sources, such as hydroelectricity, could reap the benefits from the Initiative to accelerate the adoption of electric mobility, which subsequently increase their energy self-sufficiency. Power enterprises, especially those based on renewable energy, could increase their contribution to the development of charging infrastructure.

6. Participation

The participation in the Initiative is on a voluntary basis. All ESCAP member States and public and private sector stakeholders, institutions, non-government partners working in the areas of electric mobility can participate in the Initiative.

7. Operation of the Initiative:

- **Activities:**
    - ESCAP (Transport Division) will coordinate the activities of the Initiative and provide policy support to the members countries upon request.

[13] https://www.unescap.org/events/2022/national-consultation-workshop-transitioning-electric-mobility-public-transport
[14] https://www.unescap.org/events/2022/national-consultative-workshop-strategy-electrification-public-transport-nepal
[15] https://www.unescap.org/events/2022/national-workshop-transitioning-electric-mobility-lao-peoples-democratic-republic
[16] https://www.unescap.org/events/2022/regional-meeting-just-transition-low-carbon-mobility-asia-and-pacific

- Activities could include organization of meetings, events, workshops, development of knowledge base, collection of best practices and case studies on electric mobility, formulation of policy guidelines and business models, and other activities.
- ESCAP in collaborate with other partners, will organize and implement online and in-person multi-stakeholder meetings and national, subregional and regional consultations to further support the countries.

- **Meetings:** Meetings among the participants of the Initiative will be organized regularly at the regional, subregional, and national levels with a frequency of at least one meeting in a calendar year.
- **Networking**: The initiative would partner and network with a number of other organizations and institutions across the region. It would include transport and energy sectors, academia, private sector, manufacturers and service providers in the EV and public transport space. The Initiative can complement the work of the Asia-Pacific Transport Research and Education Network (TREN)[17] and conduct training courses on electric mobility in collaboration with research and academic institutions.
- **Website:** After the launching of the Initiative, a webpage will be created to facilitate interaction and collaboration among the participants and the Secretariat. The Secretariat will be responsible to maintain and update the website and to respond to incoming requests. The website will also include information relating to upcoming events, news and on recent developments in the area of electric mobility.

[17] https://www.unescap.org/projects/tren