THIRD ASIA PACIFIC CLEAN AIR PARTNERSHIP (APCAP) JOINT FORUM

The Future of Sustainable Transport: Electric Mobility and Digitalization to Address Air Pollution

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Transport in SDGs, Paris Agreement, ADB Strategy 2030

Paris Agreement

Article 2

1. This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:

   (a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;

   (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and

   (c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

2. This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

ADB Strategy 2030's Seven Operational Priorities

- Mitigation
- Resilience
- Finance

- Promoting rural development and food security
- Strengthening governance and institutional capacity
- Fostering regional cooperation and integration
ADB’s activities on promoting E-Mobility

- Training opportunities
- Regional workshops
- ADB Transport Forums

- ADB loan: Sovereign, Non-Sovereign
- Co-financing with other MDBs, GCF, GEF, bilateral support etc.
- Grants for technical assistance

- Initial assessment of EV opportunities across transport modes.
- Initial assessment on environmental, economic, financial and institutional impacts, business models
- Development of net-zero carbon roadmaps
- Development of green hydrogen opportunities in E-Mobility

(Sample projects)
- Shandong Trolleybus Demonstration Project
- Davao Public Transport Improvement Project, Philippines
- Pakistan: Peshawar Sustainable Bus Rapid Transit Corridor Project
- Policy-Based Lending and Facility for Air Quality Management for Beijing-Tianjin-Hebei Province
Factors to consider

**Environmental Factor**
- Grid Factor
- Existing Fuel Use
- Emission Regulation
- GHG Target
- Pollution Management Regulation

**Policy Factor: National and Local**
- National EV Policy Direction
  - NDC, Industry Policy, Energy Security, Balance of Payment
- Local EV Policy Direction
  - Local Transport Plan/Policy

**Economic Factor:**
**Comparative CPEX/OPEX**
- Fuel Price (Fuel Subsidy)
- Electricity Price (Demand/Power)
- Tax Incentives
  - Import/VAT/Vehicle Excise Tax

**Financing**
- Loan: MDB, Bi-lateral, International Inst.
- Government Budget
- New Mobility Service (MaaS, Sharing, etc.)
- Business Models

**Material considerations**
- new electric vehicles (EVs), batteries and their chargers;
- key infrastructure (i.e., roads and parking facilities);
- material extraction (e.g., mining), production, and vehicle manufacturing facilities;
- additional electricity generation and distribution infrastructure.
Note:
Red: high grid factor (>0.8 kgCO\textsubscript{2e}/kWh)
Blue: moderate grid factor
Green: low carbon grid factor

green = above average fuel prices
blue = average fuel prices
red = below average fuel prices

Source: Grütter Consulting
Life-time GHG emissions of fossil vehicles

1: motorcycle 3 tCO₂
2: rickshaw 12 tCO₂
3: passenger car 26 tCO₂
4: taxi 59 tCO₂
5: urban truck: 198 tCO₂
6: urban bus 918 tCO₂
7: long-haul truck 1,216 tCO₂

CAPEX = capital expenditure, CNG = compressed natural gas, DMC = developing member country, kWh = kilowatt-hour.
Source: All calculations by Grütter Consulting; non-discounted values; for data sets, see Appendix 1; based on average DMC fuel prices and an average electricity price of 0.16 $/kWh; CAPEX includes battery replacement during vehicle lifetime based on average battery life span with 50% of current battery prices.
# Policies & Targets

<table>
<thead>
<tr>
<th>ATO Country</th>
<th>Vehicle-related targets</th>
<th>Time Horizon</th>
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</thead>
<tbody>
<tr>
<td>Brunei</td>
<td>Increase in EVs = 50%</td>
<td>2025</td>
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<tr>
<td>Cambodia</td>
<td>Increase total share of EVs to 60% of the annual vehicle sales</td>
<td>2035</td>
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<tr>
<td>China</td>
<td>New energy vehicles sales volume = 20% (2025); 50% (2035)</td>
<td>2035</td>
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<tr>
<td>India</td>
<td>Minimum share of green vehicles of all total new vehicles: Central and state government = 25% (2023) &amp; 75% (2030)</td>
<td>2030</td>
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<tr>
<td>Indonesia</td>
<td>Public EVs: 100%</td>
<td>2045</td>
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<tr>
<td>Japan</td>
<td>Share of next generation (EV, Hybrids, FCVs): 50 - 70%</td>
<td>2030</td>
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<th>ATO Country</th>
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<tr>
<td>Malaysia</td>
<td>Energy efficient private vehicles (hybrid/EVs) = 100%</td>
<td>2030</td>
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<tr>
<td>Marshall Islands</td>
<td>EVs = 100%</td>
<td>2050</td>
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<tr>
<td>New Zealand</td>
<td>De-carbonization of public transport bus fleet</td>
<td>2035</td>
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<tr>
<td>Singapore</td>
<td>100% cleaner energy bus fleet</td>
<td>2040</td>
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<tr>
<td>Sri Lanka</td>
<td>Replacement of state-owned vehicles with Hybrids and EVs</td>
<td>2025</td>
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<tr>
<td>Vanuatu</td>
<td>Introduce E-buses for public transport</td>
<td>2030</td>
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E-MOBILITY OPTIONS FOR ADB DEVELOPING MEMBER COUNTRIES

SYNTHESIS OF E-MOBILITY STUDIES OF CITIES IN THE ADB DEVELOPING MEMBER COUNTRIES

(Being drafted)
# Upcoming support to DMCs in Asia and the Pacific

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<th>Establish Support and Investment Platform for Asia and the Pacific</th>
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<td><strong>Enhance capacity development of Government</strong></td>
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| • Establish networks and communities of practice to promote knowledge transfer on E-mobility technology.  
• Provide training and capacity building |
| **Catalyze replication of high demonstration projects** |
| • Establish marketplace to convene public and private sector, industry experts, technology providers and financiers to catalyze uptake of E-Mobility in Asia and the Pacific. |
| **Support development of project concepts for implementation** |
| • Technical support in identification and development of project ideas  
• Project ideas may include wide range of transport modes such as 2-3 wheelers, 4-wheelers (particularly light duty trucks), e-buses, maritime vessels etc.  
• Development of E-Mobility concepts for implementation |
Thank you