Viet Nam Low Carbon Bus NAMA

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Background

• Viet Nam INDC: 8% emissions reduction compared to BAU by 2030, 25% with international support;

• 2010 GHG emissions: 225 MtCO$_2$e, 32 Mt in transport, rapidly rising;

• Car ownership is low but increasing rapidly;

• Mitigation measure: switch from motorcycles (2W) to public transport;

• Transport Development Strategy: increase public transport modal share from <10% at present to 25-30% by 2020;

• Promotion of environmentally friendly, low carbon buses
Barriers to mitigation

- High quality bus service requires operational subsidies and capital to purchase buses (financial barrier)
  - Direct financial support only for Hanoi and Ho Chi Minh City
  - Severe competition from motorcycles, which provide convenient and accessible transport
  - Hybrid (conventional and plug-in) buses are currently more expensive on a life-cycle basis (financial barrier)
- Perceived risk of new technology
- Vehicle efficiency measures (tyres, etc): financial and information barriers
- Lack of data and capacity at local level for integrated urban transport and land-use planning
- More national policies and financial and technical support are required
Low carbon bus NAMA

Sector-wide Low-carbon Bus NAMA (2016-2030)

NAMA Support Project 2016 - 2020

- Hanoi
- Hue
- Can Tho
Components of the NAMA

**Component 1: Low-carbon bus technologies**

By 2020: introduction of 200 hybrid and 50 plug-in hybrid buses

Incremental cost and (perceived) risk compared to conventional diesel is covered by climate finance

- Eg. 70% of new hybrid buses to be financed via a regular credit facility, 30% grant from low-carbon bus fund
- Detailed monitoring to establish proof of impact

Post-2020: pure incremental cost financing, by 2025 hybrids and plug-in hybrids will be cost effective, fully-electric buses still require subsidies
Components of the NAMA (cont’d)

Component 2: Operational efficiency improvements

Introduction of fuel efficiency measures in bus fleets and bus route optimisation in 3 pilot cities

By 2025 and 2030, 25% and 50% of the potential of the national public transport fleet will be harnessed

Financial and technical assistance to bus operators and cities

<table>
<thead>
<tr>
<th>Measure</th>
<th>Fuel Savings and GHG Mitigation Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>LRR Tires</td>
<td>3.5%</td>
</tr>
<tr>
<td>Optimal Tire Pressure</td>
<td>1.5%</td>
</tr>
<tr>
<td>Idling Stop Devices</td>
<td>2.5%</td>
</tr>
<tr>
<td>Eco Drive</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Combined Measures</strong></td>
<td><strong>9%</strong></td>
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</tbody>
</table>
Components of the NAMA (cont’d)

Component 3: Public transport system improvement

Contribute to modal share increase by technical assistance for:

- Public transport planning
- Data and MRV/monitoring system for cities
- Integration of different modes of transport
- National policies that support cities

Key partners:

Ministry of Transport, Ministry of Environment and Natural Resources, Departments of Transport in cities, bus operator companies

International partners: GIZ, UNDP, KfW
Expected outcomes

- Total emission reductions: 4-5 MtCO₂e in 2016-2030
- Diesel fuel savings: USD 600 million
- Air pollution reduction (PM, NOx): USD 40 million
- Quality of life improvement, noise reduction
Financing requirements for low carbon buses

Phase I: “Risk Finance” (2017-2020)

Phase IIa: “Incremental Cost Finance” (2021-2025)

Phase IIb: “Market-Based” (2026-2030)

Additional cost compared to conventional Euro IV diesel:
Hybrid: 35%
Plug-in hybrid: 60%
Financing (cont’d)

2017 – 2020
• USD 15 million incentive fund provides full up-front differential costs for approx. 250 low carbon buses
  • USD 30 million credit finance and bus operators’ own capital
  • USD 5 million technical assistance

2021-2030 (21,700 buses)
• USD 326 million grant finance (eg. from Green Climate Fund and development banks)
• USD 3,700 million credit and own capital

Incremental cost (including full-electric buses): USD 70/tCO₂e
Conclusions

• Transport is a key sector for achieving sustainable development and climate change objectives

• NAMA complies with national transport, energy and climate policies and has high SD benefits

• Transformational due to rapid, large-scale technological change and public transport system improvement

• Clean technologies require initial financial support, which declines over time when risk is reduced and fuel prices increase

• Technical assistance is needed to improve policies, planning and monitoring
THANK YOU

For comments or questions:

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