Promoting Electric Mobility in Developing Countries

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Transport Unit, UN Environment

Sustainable Transport in Egypt:
Progress, Prospects and Partnerships
December 14th, 2016
Marriott Hotel, Cairo
Exponential growth of global LDV fleet (IEA 2015)

Predicted Growth of Light Duty Vehicles 1975-2050 (in 1000s)

- Non OECD
- OECD
Why promote electric mobility? Worsening urban air pollution

- Worsening urban air pollution
- SO$_2$
- CO$_2$
- PM
- NO$_x$
- O$_3$
- Black C
- VOCs
- Toxics
Why promote electric mobility?
Increasing global energy-related CO$_2$ emissions

Source: ICCT
To meet $\leq 2^\circ$↑ scenario, **20% of all road vehicles must be electric-powered by 2030** (IEA).

Projections indicate that a **MAJOR** global disruption is needed to increase electric mobility uptake.
UN Environment
Promoting Sustainable Low Emissions Transport

Avoid
• Africa Sustainable Transport Forum – develop and adopt action plans in Africa for sustainable and low emissions transport
• Share the Road (StR) – promote and develop non-motorized transport policies

Shift
• Global Fuel Economy Initiative (GFEI) – double vehicle fuel efficiency by 2050

Improve
• E-Mob – supporting electrification of the vehicle fleet
• Partnership for Clean Fuels and Vehicles (PCFV) – reduce emissions from light-duty vehicles
• Reducing Emissions from Heavy-Duty Vehicles
• Clean Ports – reduce emissions from port activities
Over 80 countries supported by the PCFV to eliminate leaded petrol
Global Low Sulphur Diesel Progress 2005 - 2016

23 countries have moved to 50 ppm and below

More countries have lowered sulphur levels

More cities at 50 ppm
6 countries adopted light duty vehicle emission standards: Philippines, Vietnam, Nigeria, Azerbaijan, Ukraine, Russia

More countries supported on the regulatory toolkit

More cities in LAC/Asia adopting stricter vehicle emission standards
Typical policies addressing emissions from road transport

**New Vehicles**
- Emission Standards/Fuel Quality:
  - Emission Standards (zero/low)
  - Fuel Quality
- Fuel Economy/Efficiency:
  - Fuel Economy Standards
  - Fuel Economy Labeling

**In-Use Vehicles**
- Driver:
  - Certification
  - Eco-Driving
- Fuel:
  - High octane fuel
  - Biofuels
- Vehicle:
  - Preventive Maintenance
  - Inspection
- Road:
  - Road Conditions & Maintenance
Focus Areas of E-Mobility Programme

(A) Electric 2&3 wheelers
(B) Electric Buses
(C) Developing National Policies for Electric Cars
(D) Regional and Global Outreach & Replication
(A) Integrating Electric 2 & 3 wheelers in Urban Traffic

- Electric 2&3 wheelers “low hanging fruit” of electric mobility
- ~250 million in China (~330 mln by 2020)
- Key issue in middle and low income countries (growth)
- Less challenges on cost, infrastructure, technology, recharging
- First step to electric mobility
2&3 wheelers are a great gateway intervention
(B) Electric buses

- Key interest, esp. in Latin America
- Cost issue, innovative financing
- Link to Mass Transit systems, BRTs
Link to Soot-free Bus Project

• Support soot-free technologies in 20 major cities Asia, LAC & Africa
• Funded by CCAC, co-implemented with ICCT and regional partners
• 6 cities with targeted support
• UNEP lead in: Nairobi, Accra, Lima and Santiago
  ✓ Activity 1 - Secure and implement clean bus commitments
  ✓ Activity 2 – Establish clean bus industry partnership
  ✓ Activity 3 - Report on outcomes
(C) Fiscal policies to promote electric cars

- Support governments in developing national policies to promote import of electric vehicles
- As part of national GFEI projects
- Focus on fiscal reforms
- Interest from many countries
- Going from about 30 to 50 country project in coming year
- Adopts a new scheme for excise tax that will bring 0% excise tax for electric cars with up to 180 Kw and 25% with above 180 Kw.

<table>
<thead>
<tr>
<th>Type</th>
<th>Current</th>
<th>New</th>
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</thead>
<tbody>
<tr>
<td><strong>Conventional</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 550 cc</td>
<td>15%</td>
<td>0</td>
</tr>
<tr>
<td>551-1000 cc</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>1001-1600 cc</td>
<td>55%</td>
<td>50%</td>
</tr>
<tr>
<td>1601-2000 cc</td>
<td>75%</td>
<td>No change</td>
</tr>
<tr>
<td>Above 2,000 cc</td>
<td>100%</td>
<td>No change</td>
</tr>
<tr>
<td><strong>Hybrid</strong></td>
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</tr>
<tr>
<td>Up to 1600 cc</td>
<td>55%</td>
<td>25%</td>
</tr>
<tr>
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<td>75%</td>
<td>45%</td>
</tr>
<tr>
<td>Above 2000 cc</td>
<td>100%</td>
<td>70%</td>
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<tr>
<td><strong>Electric cars</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 180 Kw</td>
<td>25%</td>
<td>0</td>
</tr>
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<td>No change</td>
</tr>
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</table>
Sri Lanka

- Number of hybrid and electric cars registered was over 56% of the total number of cars in 2014 and increasing.
- Fiscal levies were as high as 253% for petrol and 345% for diesel cars, while hybrid petrol cars were only 58% for vehicles up to 1999cc and fully electric cars are 25% only.
**Thailand**

- Vehicle excise tax rates in Thailand combines CO2 ratings and engine capacity.
- Tax scheme provides only 10% excise tax for electric vehicles.

<table>
<thead>
<tr>
<th>Types of Vehicles</th>
<th>Fuel type / Tax rates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CO2/ engine capacity</td>
<td>E10/E20</td>
</tr>
<tr>
<td>Passenger vehicles – cars and vans with less than 10 seats</td>
<td>≤ 100 g/km</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>101-150 g/km</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>151-200 g/km</td>
<td>35</td>
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<tr>
<td></td>
<td>&gt;200 g/km</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>&gt;3,000 cc</td>
<td>50</td>
</tr>
<tr>
<td>Electric vehicle/ fuel cell</td>
<td>≤ 3,000 cc (180 Kw)</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>&gt; 3,000 cc (180 Kw)</td>
<td>50</td>
</tr>
</tbody>
</table>
(D) Global outreach and replication

Urban Electric Mobility Initiative

Paris Declaration on Electro-Mobility and Climate Change & Call to Action

INDCs, COP, SDGs

IEA Electric Vehicles Initiative

The International Zero-Emission Vehicle Alliance

UN Environment, GIZ, World Bank, etc.
Summary

• Environmental and social challenges from the road transport sector remain high and will continue to grow
• Important to have comprehensive approach - ASI
• Important to look at new vehicles and in-use vehicles
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