Busworld Webinar

Getting the Most out of the EV Revolution

July 7, 2021

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Switching to Electric Mobility is no longer a question of if

- EV prices are expected to drop as battery costs are dropping due to improving technology
  - >> accounts for up to 50% for electric cars and 70% for e-buses,
- battery energy density and vehicle efficiency are expected to keep on improving.
- driving range will continue to improve,
- charging patterns may change,
- so will the demand for and spatial distribution of charging facilities.
- countries aspiring to be leaders in e-mobility will need to factor in many considerations in charting out a road map to fully capitalize the EV momentum.
Focus, Optimize, Incentives

Focus on large fleets, high-mileage vehicles, urban areas:

• High-milage ★ economies of scale ★ lower unit cost for charging infrastructure /grid operators.
• Fixed-route ★ economies of scale ★ lowers risks associated with ‘location’

• Highest environmental impacts:
  • Local air quality improvements, noise pollutions.

• Municipal Bus Operators is an excellent place to start
• ★ bus reform / municipalization is a prerequisite
• Fleet management is not possible under the ‘traditional’ owner-operator / informal revenue-sharing regime

• Added benefits (urban operation):
  • Visibility ★ marketing
Focus, Optimize, Incentives (2)

Optimize: Supporting Ecosystem

- Adequate power infrastructure
- Co-optimizing charging infrastructure
- with vehicle configuration or operational characteristics
- i.e. eBusses can run with smaller battery packs & shorter charging times

- Second-life options for EV Batteris ▶️ storage for renewable sources
- Green and greener

- Greener yet: lower the grid-emissions factor, greening the grid, higher share of renewables.
Focus, Optimize, Incentives (3)

Incentives:

• Fiscal incentives for initial purchases (necessary, but not sufficient)
• Focus on eBus
• Phase out plan!

• EV uptakes ~ inverse fuel prices (i.e. Norway Europe, CA vs TX)
• Fuel tax!

• Non-fiscal incentives:
• EV priority parking
• Low-emission, low-carbon / quite zones
Key 2021 Initiatives: Rolling out & Scaling Up

TransJakarta BRT-Systems:
• Awards operating contracts to operators & own some busses
• Plans to invest in a trial fleet of 100-200 e-buses, replacing decommissioned diesel Project Development Facility from C40/CFF initiative
• Full electric by 2030: 14,000 eBusses.

DAMRI:
• One of TransJakarta operating partner
• Runs the Airport Connection busses Visibility

BlueBird Taxi:
• Runs trial fleet 6 Teslas (Premium) & 30 BYD-E6 (Regular) since April 2019
Key Opportunities & Challenges: Chicken & Egg

• Demand side: Significant market potentials & impacts on urban air quality (Jakarta)

Supply side TRIFECTA:
• Untapped industry potentials: Nickel & Cobalt reserves in Sulawesi.
• Improving battery technology: higher energy density, dropping prices akin to IC/Chip.
• Potential growth of renewable energy

Key challenges:
• Mitigating the disruption in the fossil-fuel-vehicle supply-chain transition plan
• PLN, the State Electricity Co., is a key player
  • fast charging facility business plan
  • Smart Grid to level peak load
  • EVs as “battery on wheels” Vehicle-To-Grid: storage & distribution
• Meeting the Local Content requirement road map
• Fossil fuel subsidies phase out
• Incentives: fiscal (tax credits) and non-fiscal (municipal level)
  • Interaction between utilization and ownership decisions
e-Mobility
National Priorities
PerPres 55/2019 (August)
Accelerated promotion of e-mobility: Policy & Programs
Transition, technological change, innovation

1. Develop e-Vehicles/Hybrid: prototyping to commercial
2. End-to-end industrial development of e-mobility: Vehicles, infrastructure, R&D.
3. Roll out Indonesian e-vehicles & hybrids: 2,200 cars & 2,13 million electric bicycles by 2025
4. E-vehicle Penetration rate of 10% in urban areas, focusing on e-buses by 2025.
5. Fiscal incentives for manufacturers.
6. 1,000 charging stations by 2025

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<thead>
<tr>
<th>e-mobility goals and targets</th>
<th>2025</th>
<th>2050</th>
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<tbody>
<tr>
<td>Charging Stations &amp; stations</td>
<td>1,000</td>
<td>± 10,000</td>
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<tr>
<td>e-Vehicles &amp; e-Bikes</td>
<td>2,200</td>
<td>4,2 Mio</td>
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<tr>
<td>Hybrids &amp; buses</td>
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<td>8,05 Mio</td>
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<tr>
<td>Hybrid Bikes &amp; motorcycles</td>
<td>2,13 Mio</td>
<td>13,3 Mio</td>
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Min. of R & D | Min. of Industry | Min. of Transp. | Min. of Finance | Min. of Transp. | Min. of Energy
National Interests in the transition to electric mobility: Becoming a major player

- Empowering local industries (Min of R&D, Industry)
- Vehicle Registration & licensing (National Traffic Police)
- Tax incentives and import duties (Min. of Finance)
- Battery recycling & Waste Management (Min. of Environment)
- Local Vehicle taxes (Min. of Home Affairs and Local Gov’ts)
- Vehicle registration; technical and safety standards (Min. of Transport)
- Power Supply and Charging plug standards (Min. of Energy)
- Implementation Strategies (Energy, Home Affairs, Local Governments)
Electrification of Urban Public Transport

- Shift, then Improve...
  - Energy efficiency of busses

Decarbonizing our grid …
- And our vehicles..

CO2 EMISSIONS IN INDONESIA FROM FOSSIL-FUEL COMBUSTION

Source: GIZ

Source: Data from Indonesia Biennial Update Report to UNFCCC 2018
THANK YOU!

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