

Busworld Webinar

Getting the Most out of the EV Revolution

July 7, 2021

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**INDONESIA
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Getting the most out of the EV Revolution

- 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-mileage ☐ 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 Batteries ☐ 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

Min. of R & D

Min. of Industry





Min. of Transp.
Min. of Industry

Min. of Transp.

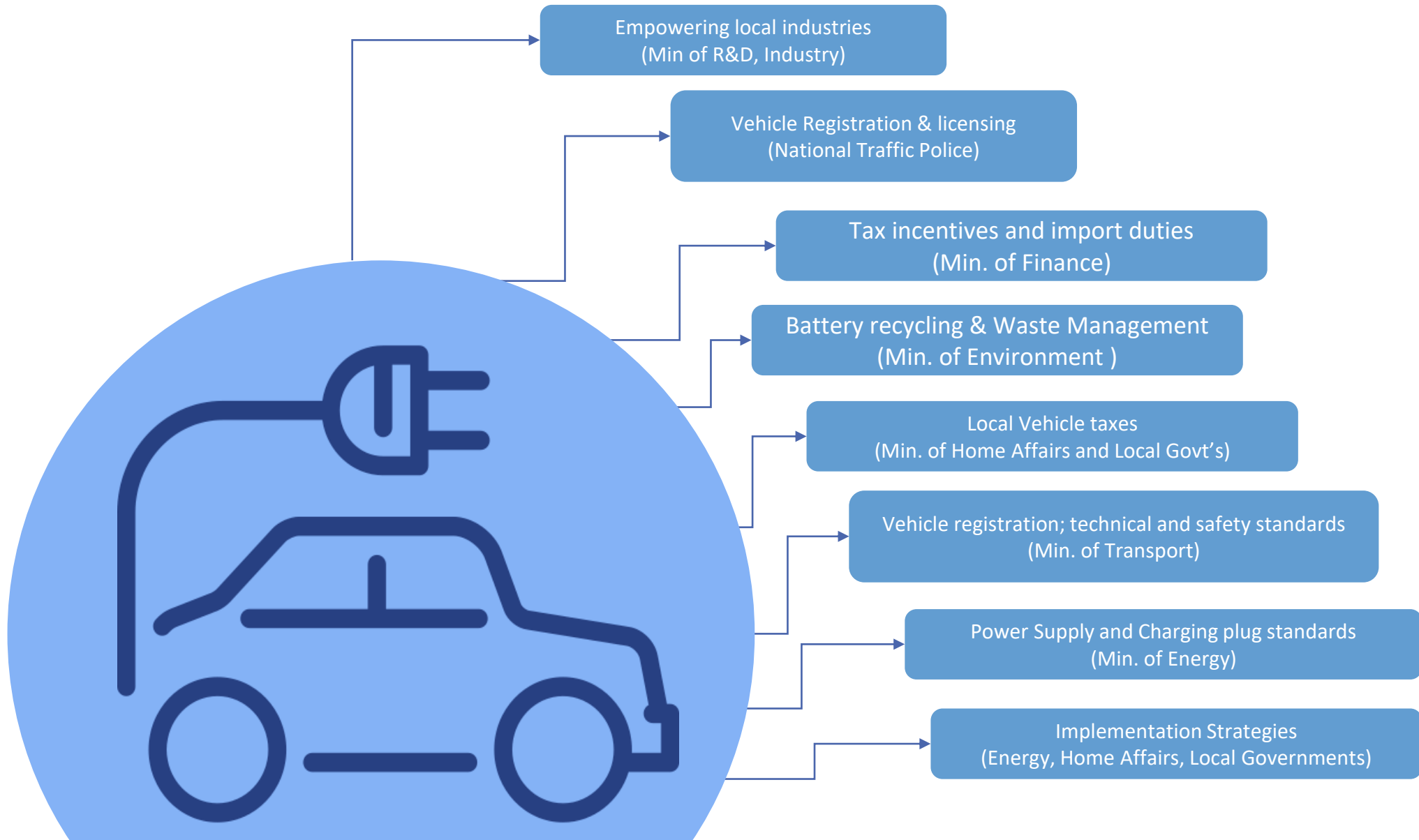
Min. of Finance
Min. of Transp.

Min. of Energy

e-mobility goals and targets

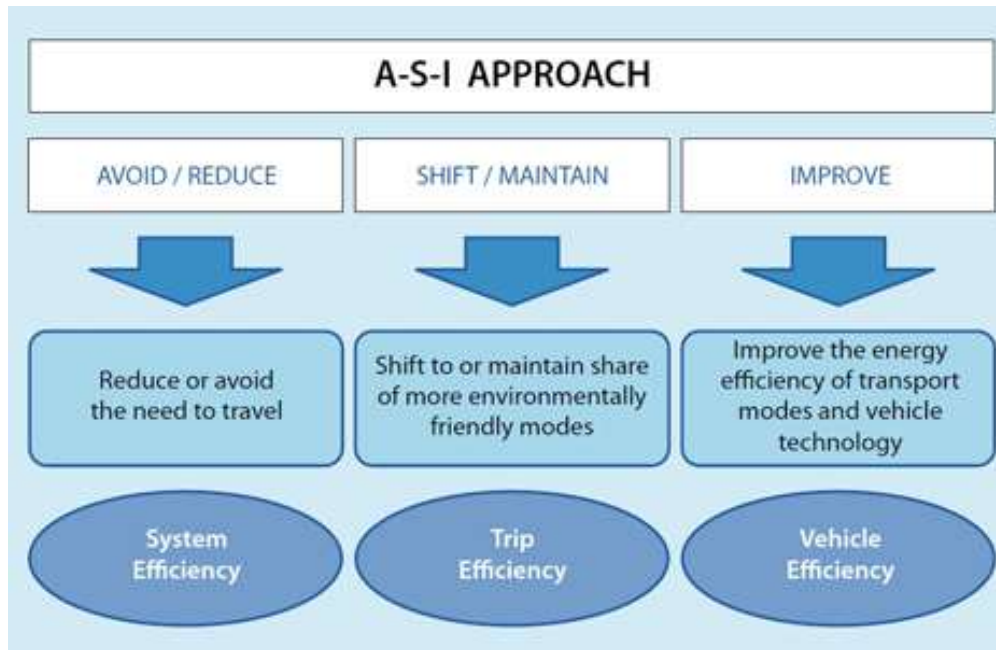
	2025	2050
 Charging Stations	1.000	± 10.000
 e-Vehicles	2.200	4,2 Mio
 Hybrids	711,9 K	8,05 Mio
 Hybrid Bikes	2,13 Mio	13,3 Mio

National Interests in the transition to electric mobility: Becoming a major player



Electrification of Urban Public Transport

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

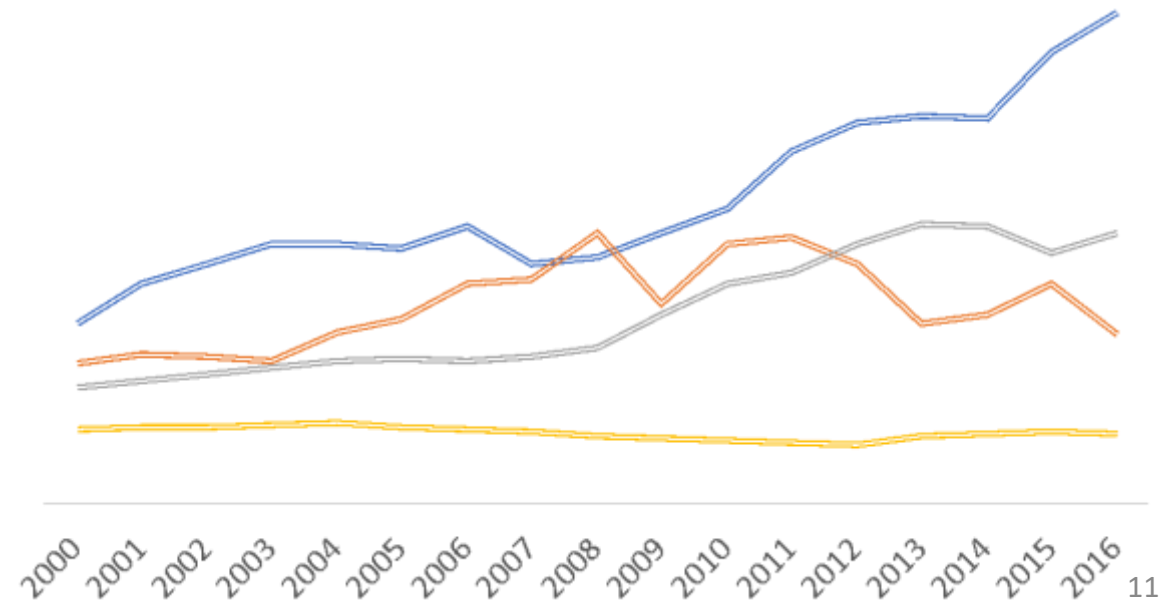


Source: GIZ

- Decarbonizing our grid ...
- And our vehicles..

CO2 EMISSIONS IN INDONESIA FROM FOSSIL-FUEL COMBUSTION

— Power Sector — Industry — Transport — Buildings



Source: Data from Indonesia Biennial Update Report to UNFCCC 2018

THANK YOU !

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