



ROADMAP ON LOW CARBON EMISSION VEHICLE

Indonesia-Japan Automotive Seminar 29 January 2019



- I. OVERVIEW
- II. AUTOMOTIVE INDUSTRY ROADMAP
- III. LOW CARBON EMISSION VEHICLE (LCEV) PROGRAM



I. OVERVIEW



INDONESIA AUTOMOTIVE INDUSTRY OUTLOOK

CAR RATIO (2017)

87 Car per 1000 People

PRODUCTION (2018)

1,34 Million Unit









INVFSTMFNT 2014-2017



2,25 Million Unit/Year

INSTALLED CAPACITY (2018)



27,3 Trillion IDR













NUMBER OF EMPLOYEE

1,5 Million People





EXPORT (2018)

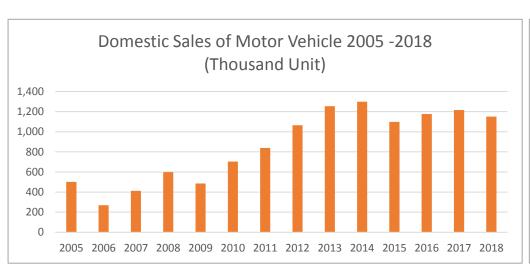
CBU: 264 Thousand unit

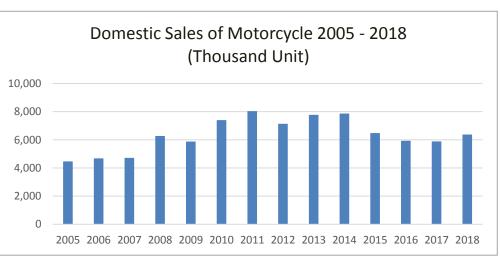
CKD: 82 Thousand Set

Component: 86,6 Million Pieces



DOMESTIC WHOLESALES (2005 – 2018)





Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Motor Vehicle	501	269	412	599	486	703	838	1,065	1,254	1,299	1,099	1,177	1,216	1,151
Motorcycle	4,470	4,688	4,713	6,280	5,881	7,398	8,043	7,141	7,771	7,867	6,480	5,931	5,886	6,383



II. AUTOMOTIVE INDUSTRY ROADMAP

Key

Kev

activities

Focus products

initiatives

INDONESIA'S AUTO INDUSTRY AS REGIONAL AUTO EXPORT HUB

Horizon 2

Indonesia Automotive 4.0

Charter & detailed roadmap on ff. pages
Horizon 1 2021



3-5 years

Strengthen local production of ICE¹ vehicles

- Enhance raw material production capabilities, i.e. steel and chemical
- Improve productivity in ICE vehicles by adopting technology
- Strengthen local components manufacturing capabilities by accelerating component production FDI and technology transfer

ICE Vehicles

Accelerate export, starting from MPV and LCGC

.

Start 2W electric MC export for emerging countries

Horizon 3

2030



2025

10-15 years

Initiate local production of **electric motorcycles**

5-10 years

- Set a clear phase out plan for fuel-based MC while building required infrastructure and incentivizing electric MC adoption
- Establish R&D centers for EV components, esp. battery, and perform rapid prototyping
- Build domestic production capabilities for electric MC along value chain

Initiate local production of **electric vehicles**

- Set a clear phase out plan for ICE cars while building infrastructure and incentivizing EV adoption
- Encourage continuous improvement of EV component production
- Build domestic production capabilities for 4W EV along value chain



Electric Vehicles



Start 4W EV export for emerging markets

1. Internal Combustion Engine Source: A.T. Kearney



INDONESIA'S AUTO INDUSTRY IN 2030



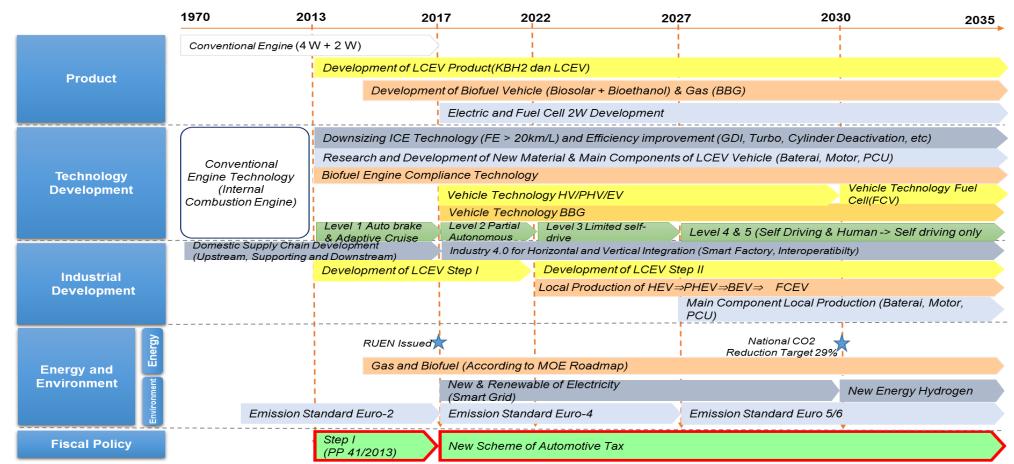


AUTOMOTIVE INDUSTRY ROADMAP

Vision: To be major player in global automotive industry

Mission: Developing realiable, competitive and sustainable automotive industry

Roadmap



Keterangan: BBG: Bahan Bakar Gas HV: Hybrid Vehicle PHV: Plug-In Hybrid EV: Electric Vehicle FCV: Fuel Cell Vehicle LCEV: Low Carbon Emission Vehicle PCU: Power Control Unit



QUANTITATIVE TARGETS

	ITEM		2020	2025	2030	2035	
MOTOR VEHICLE		Total (Unit)	1.500.000	2.000.000	3.000.000	4.000.000	
	Production	Percentage LCEV(%)	10	20	25	30	
		Percentage LCGC (%)	25	20	20	20	
	Sales	Total (unit)	1.250.000	1.690.000	2.100.000	2.500.000	
	Export	Total (unit)	250.000	310.000	900.000	1.500.000	
MOTOR CYCLE		Total (unit)	8.000.000	10.000.000	12.500.000	15.000.000	
	Production	Percentage Electric Motorcycle (%)	10	20	25	30	
	Sales	Total (unit)	7.500.000	9.000.000	11.000.000	13.000.000	
	Export	Total (unit)	500.000	1.000.000	1.500.000	2.000.000	



IV. LOW CARBON EMISSION VEHICLE (LCEV) PROGRAM



INTRODUCTION LOW CARBON EMISSION VEHICLE (LCEV) IN INDONESIA

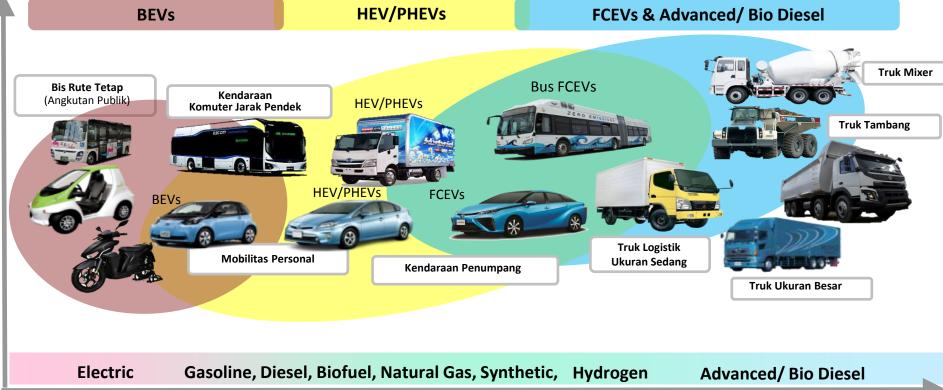
Vehicles under LCEV Scheme Existed Next: Electrified Vehicle FLEXY ENGINE HEV **LCGC PHEV BEV/FCEV** (B100/E100) Optimize battery Mostly fuel-powered, Internal Combustion Full-electric vehicles powered, but use a but use small battery Low Carbon Emission Engine designed to that are completely Overview fuel-powered Vehicle packs to improve fuel battery run on more than one generator (Range efficiency level biofuel powered/Fuel Cell Externder) Gasoline or Diesel Gasoline/Diesel Gasoline/Diesel Gasoline/Diesel **Energy Source** • Electricity/Hydrogen blended with Ethanol Electricity or Biodiesel Pump Charging Infrastructure Pump station Pump station station/Hydrogen station+Charging None Requirements (Available) (Available) Station (Alternative) Station (Required)



VEHICLE SIZE

FUEL

LCEV ACCORDING TO THE CHARACTERISTICS OF VEHICLES AND FUEL TECHNOLOGY



MILEAGE

Vehicle technology must be adjusted to the characteristics of mileage, vehicle size and fuel

Note:

HEV: Hybrid Electric Vehicle, PHEV: Plug-In Hybrid Electric Vehicle, BEV: Battery Electric Vehicle, FCEV: Fuel Cell Electric Vehicle



 Tax Holiday and Tax Allowance for a new investment or expanding to attract foreign investment and foster national industries;

7 7		Industri pembuatan komponen utama mesin yang mendukung industri pembuatan kendaraan bermotor listrik					
90	27111A	Industri pembuatan motor listrik yang terintegrasi dengan industri pembuatan magnet					
91	27111B	Industri pembuatan motor listrik yang terintegrasi dengan industri pembuatan kumparan					
92	29300A	Industri baterai untuk kendaraan bermotor listrik					

- 2. Income tax deductions of up to 300 percent for companies carrying out R&D activities;
- Tax harmonization scheme for promoting electric vehicle industry;
- 4. Establish local competencies for further development such as battery, PCU, electric motor and charging station.



Shank JOU