

# EV development in Indonesia

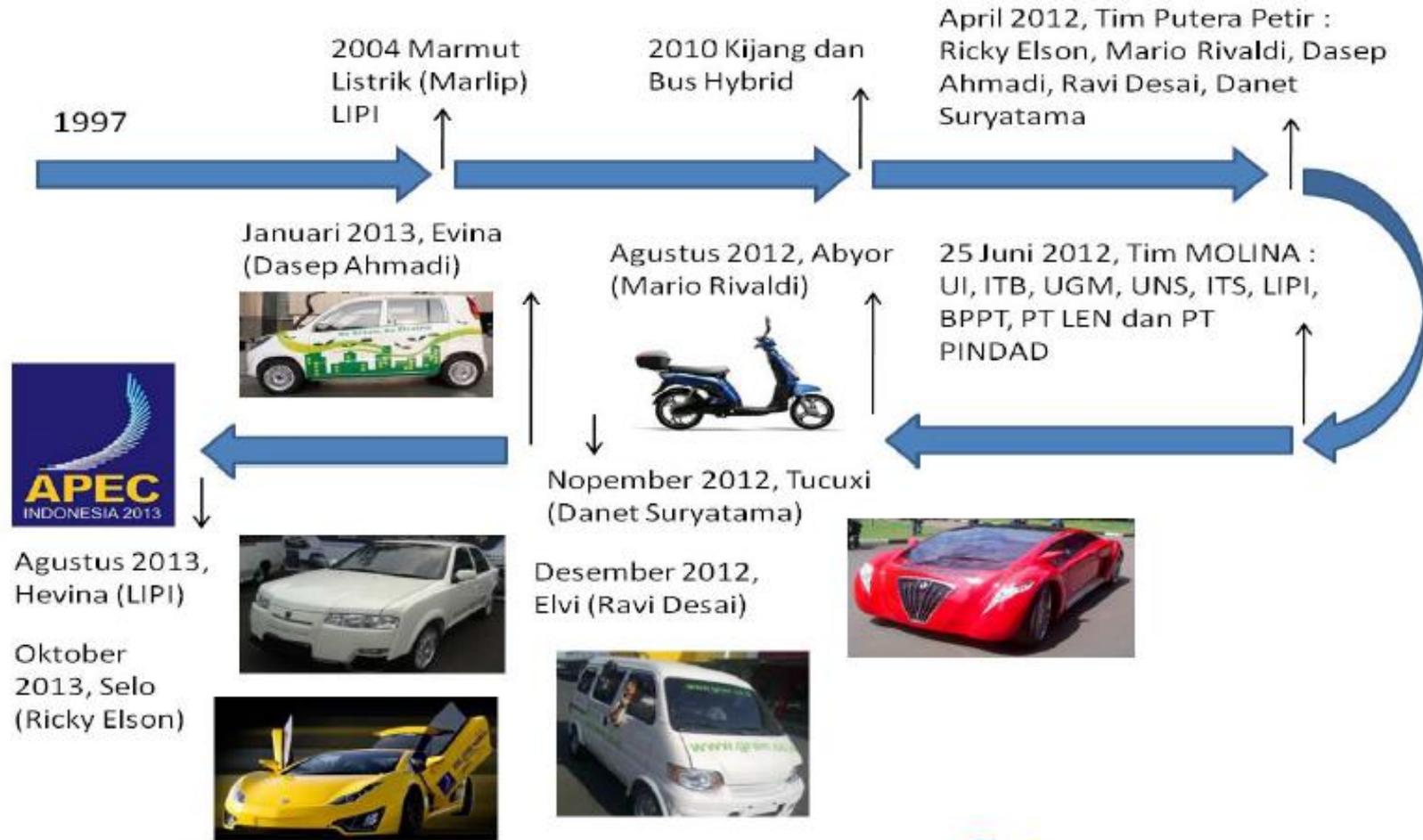
## Current Situation

Mulyo Widodo Kartidjo

President

IEVN (Indonesia Electric Vehicle Network)

## Indonesia EV Timeline



## Indonesian Electric Vehicles in production



MAB – Electric Bus



Gesits – Electric Motor Cycle



Viar – Electric Motor Cycle

## Indonesia Electric Car Taxis



Silver Bird Taxi – Tesla X 75D A/T

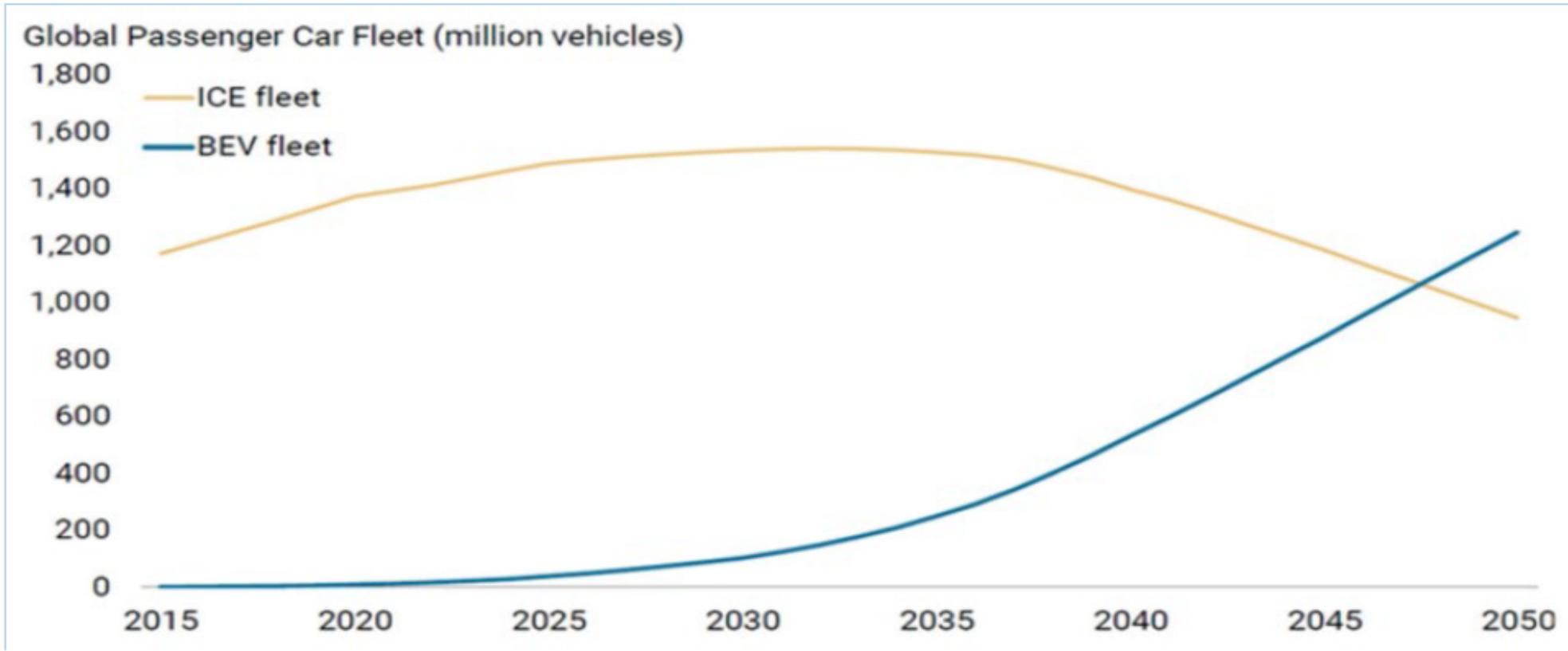


Blue Bird Taxi – BYD e6 A/T

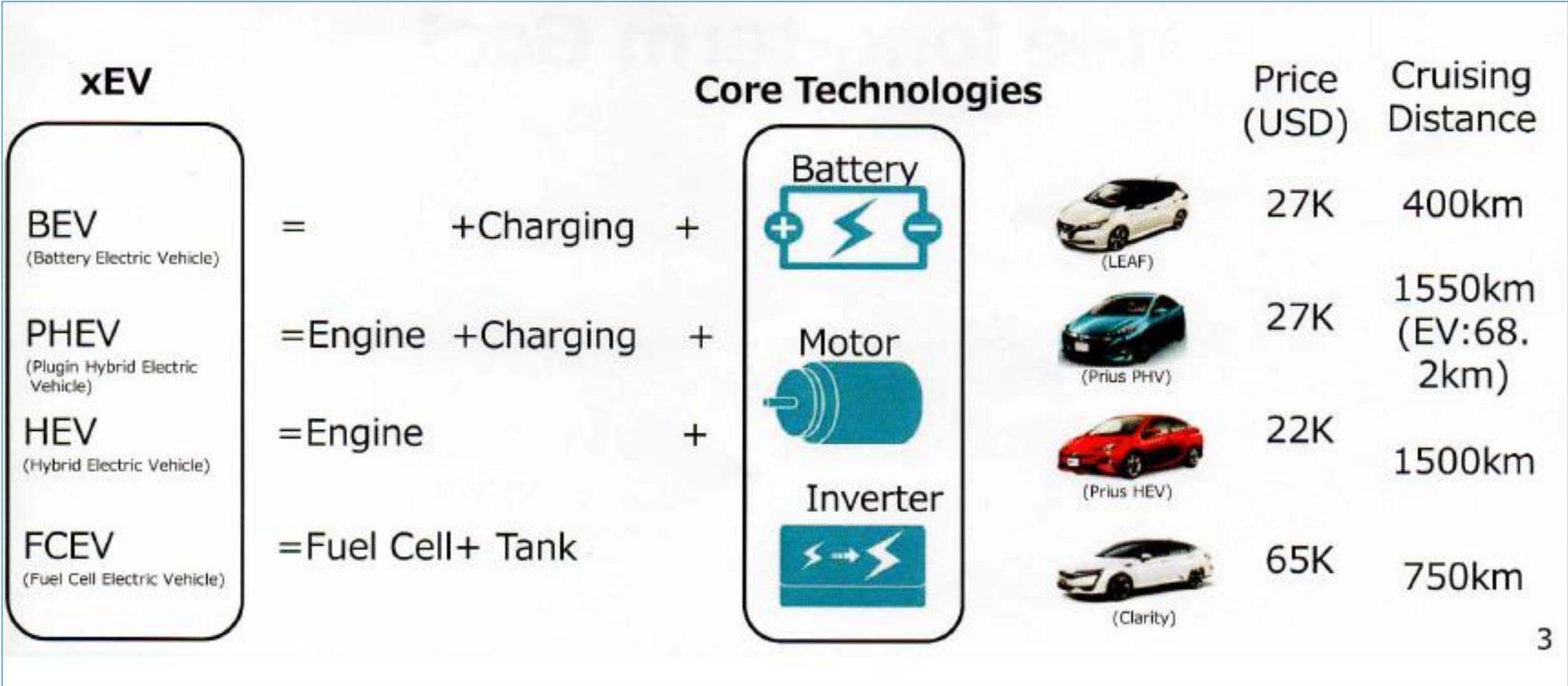
# BEV Global Projection



## ICE vs BEV Global



# Electric Vehicles Core Technologies



*Source: Japan's Strategy and Policy on Electrification on the Automobile Industry  
Ministry of Economy, Trade and Industry -2019*



## Power Supply Need

- In 2017, the estimated global electricity demand from all EVs was 54 terawatt-hours (TWh).
- Passenger vehicle consumption 20-27 kWh/100 km within annual mileage 8.500-18 800 km:
  - 8.500 = 5.82 kWh/day
  - 18.800 = 12.87 kWh/day

Years	Estimated EV*	Mileage (km/year) **	kWh/year	MW Estimated ***		
				7 Hours	12 Hours	16 Hours
2020	150,000	8.500	900,000	129	75	56
		18.800	1,950,000	279	163	122
2021	400,000	8.500	2,400,000	343	200	150
		18.800	5,200,000	743	433	325
2022	750,000	8.500	4,500,000	643	375	281
		18.800	9,750,000	1,393	813	609
2023	1,200,000	8.500	7,200,000	1,029	600	450
		18.800	15,600,000	2,229	1,300	975

**Note:**

\* Depperin, Juli 2018

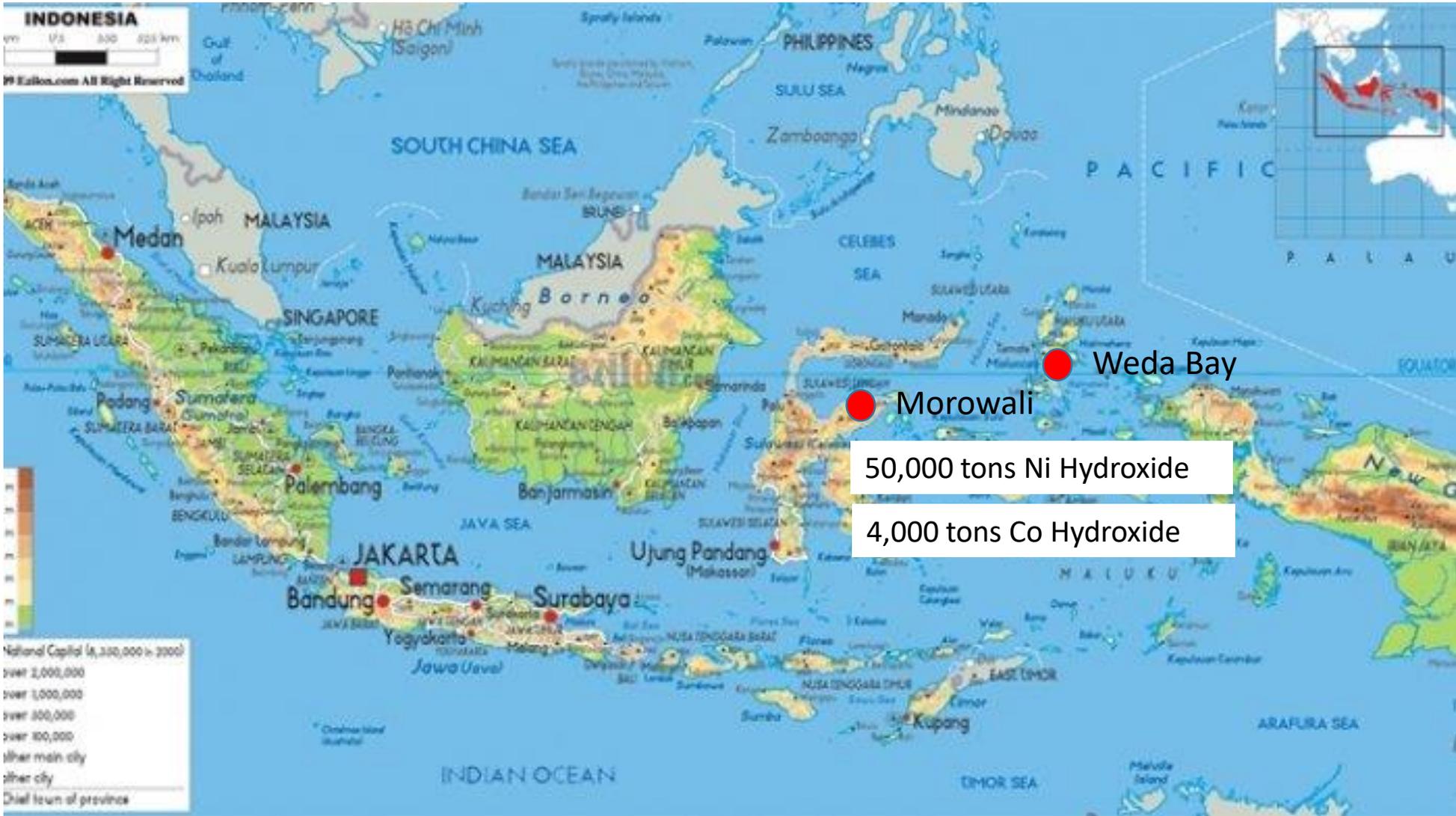
\*\* IEA, 2018

\*\*\* EV World (2017)

In 2023, with 1.2 million BEV, we will need 60 GWh battery, assuming each BEV need 50 kWh battery on average

Therefore in 2050, with 1,200 million BEV, we will need 60 TWh battery

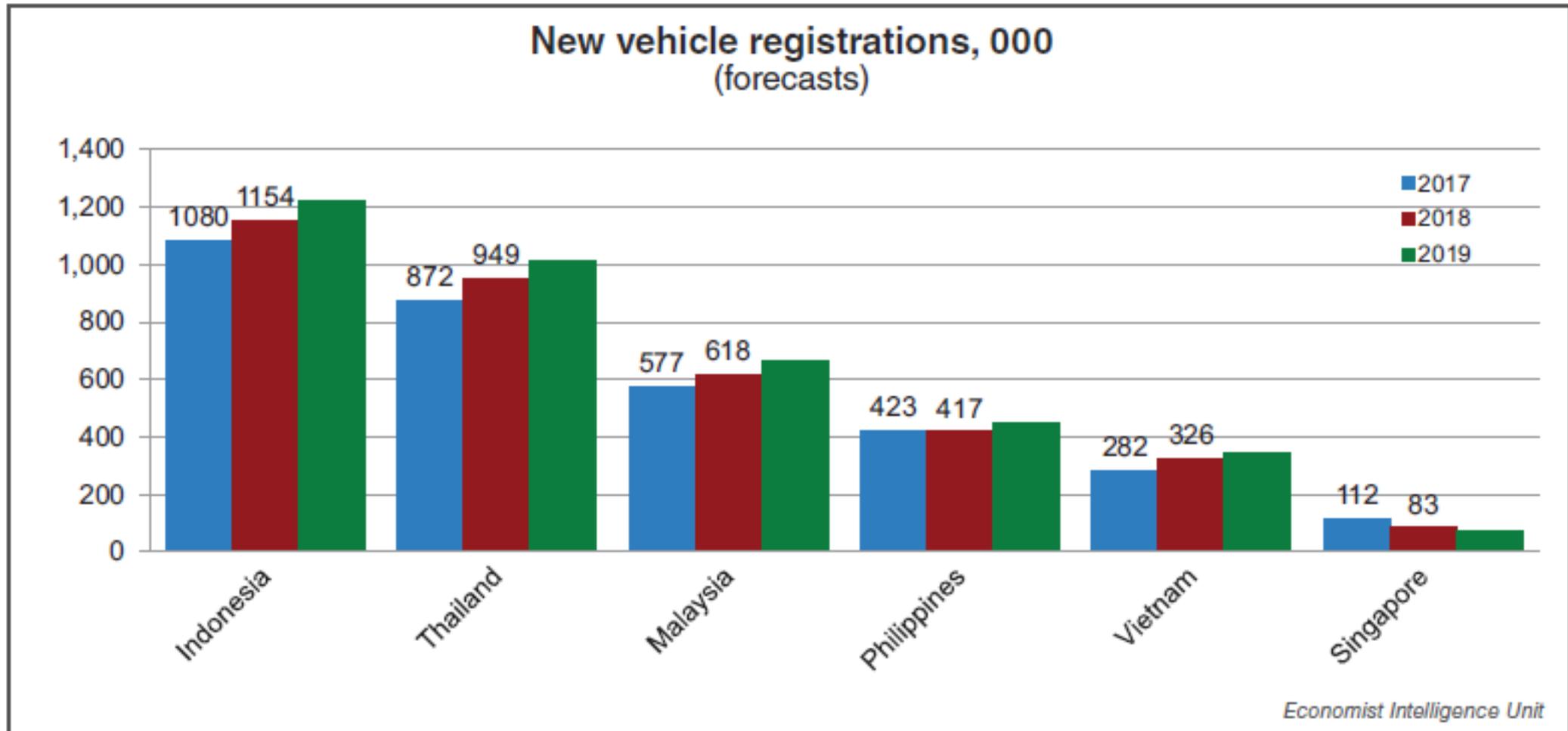
# Planned Battery Industries in Indonesia



NMC (Nickel-Mangan-Cobalt)

NCA (Nickel-Cobalt-Alumina)

## ASEAN vehicles market



Source: Special Report: the ASEAN auto industry, Automotive World - 2018

Due to its big market for electric vehicles in the future, many electric vehicle industries have shown their interest to start selling or building electric vehicle industry in Indonesia.

Unfortunately, Indonesia still has no a solid government regulation yet on how EV industry will be developed – May 2019

**Thank you**