

# **Indonesia's Opportunity as HEV Production Base**

**19<sup>th</sup> GAIKINDO International Automotive Conference / 29 July 2025**

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**President, Toyota Motor Asia (Singapore)**

**CEO, Toyota Financial Services-Asia Region**

The bottom half of the slide features large, abstract geometric shapes. On the left, there is a red polygon. In the center, a large red trapezoid extends from the left towards the right. On the far right, a grey rectangle is partially visible, overlapping the red shape.

# Toyota's stance on Carbon Neutrality

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2

Toyota set its Environmental Challenge in 2015. In 2021, Toyota re-committed to **Carbon Neutrality in 2050** through a **holistic, practical & sustainable** approach

## Ongoing Efforts towards Carbon Neutrality

### Toyota Environmental Challenge

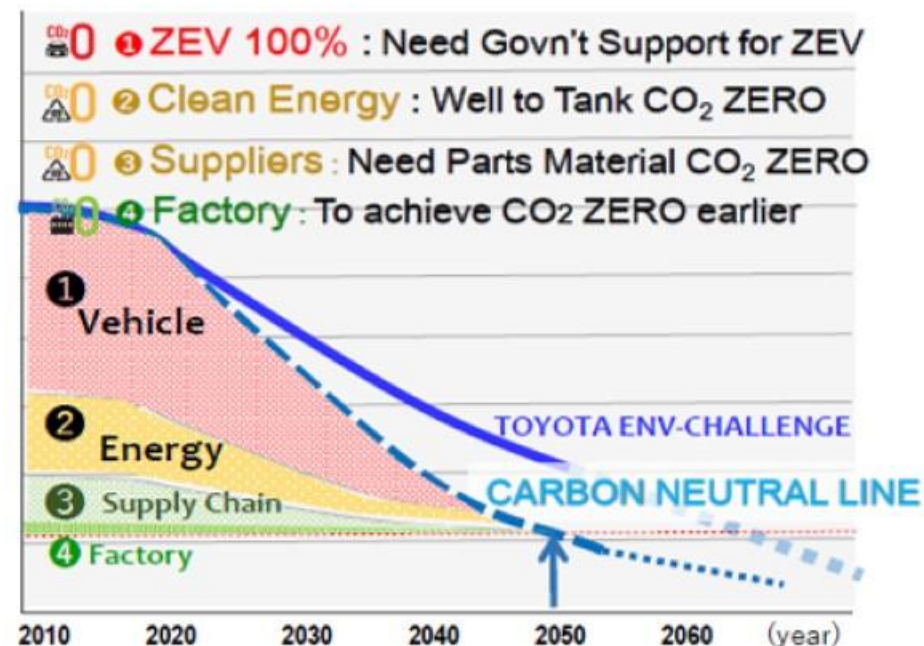
## TOYOTA ENVIRONMENTAL CHALLENGE 2050



CHALLENGE 1	CHALLENGE 2	CHALLENGE 3	CHALLENGE 4	CHALLENGE 5	CHALLENGE 6
New vehicle Zero CO <sub>2</sub> Emissions Challenge	Life Cycle Zero CO <sub>2</sub> Emissions Challenge	Plant Zero CO <sub>2</sub> Emissions Challenge	Challenge of Minimizing and Optimizing Water Usage	Challenge of Establishing a Recycling-based Society and Systems	Challenge of Establishing a Future Society in Harmony with Nature



## Toyota's Stance on Carbon Neutrality





# Indonesia's 'Asta Cita' & Toyota's Multi-Pathway

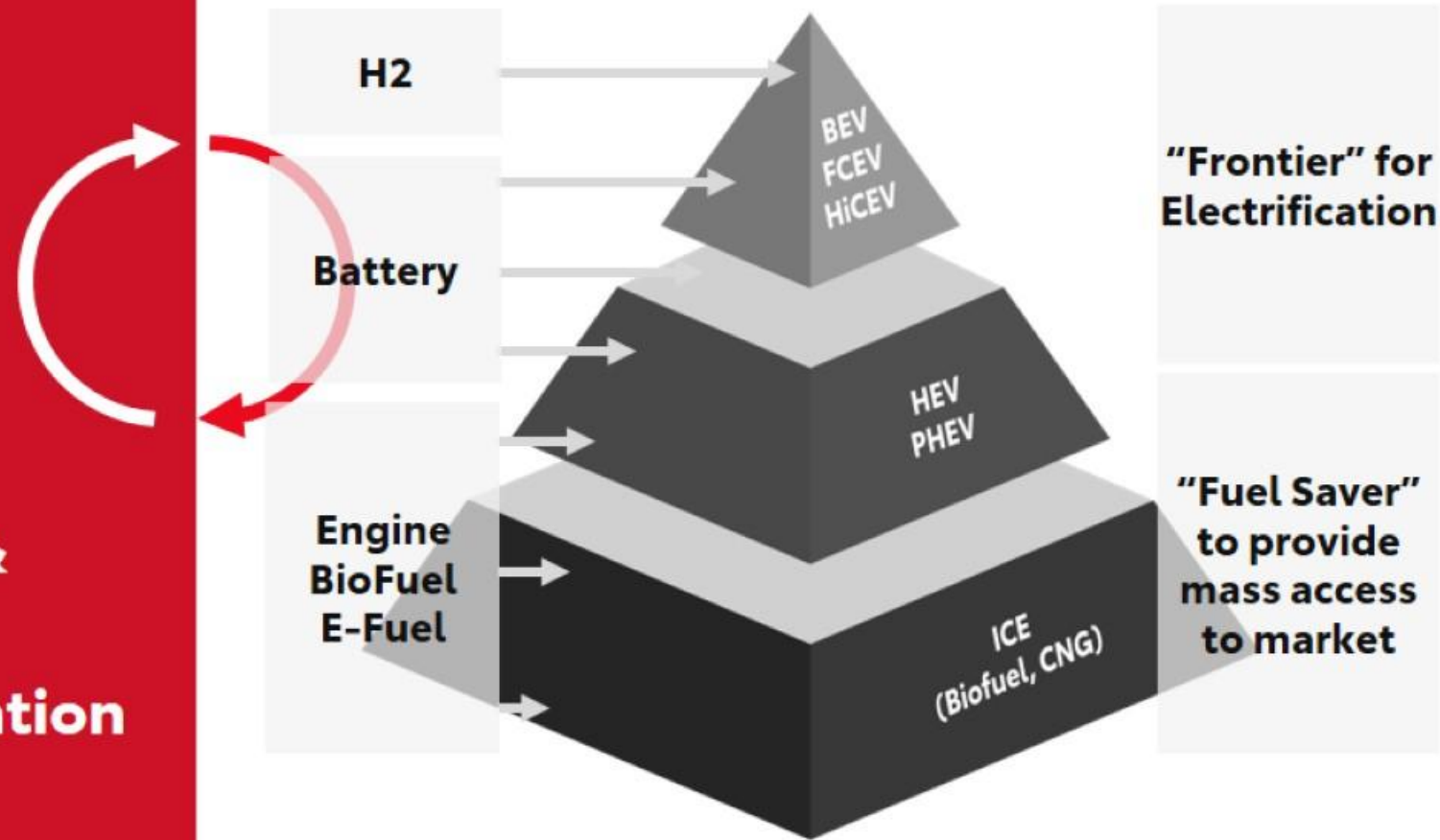
## President's Asta Cita



- **Energy Independence**
- **Green & Blue Economy**
- **Quality Jobs**
- **Human Resources in Science & Technology**
- **Downstream and industrialization to increase value add**

## Multi-Pathway Strategy

All xEV Technologies have potential to contribute to CO2 reduction and Indonesian National Interests



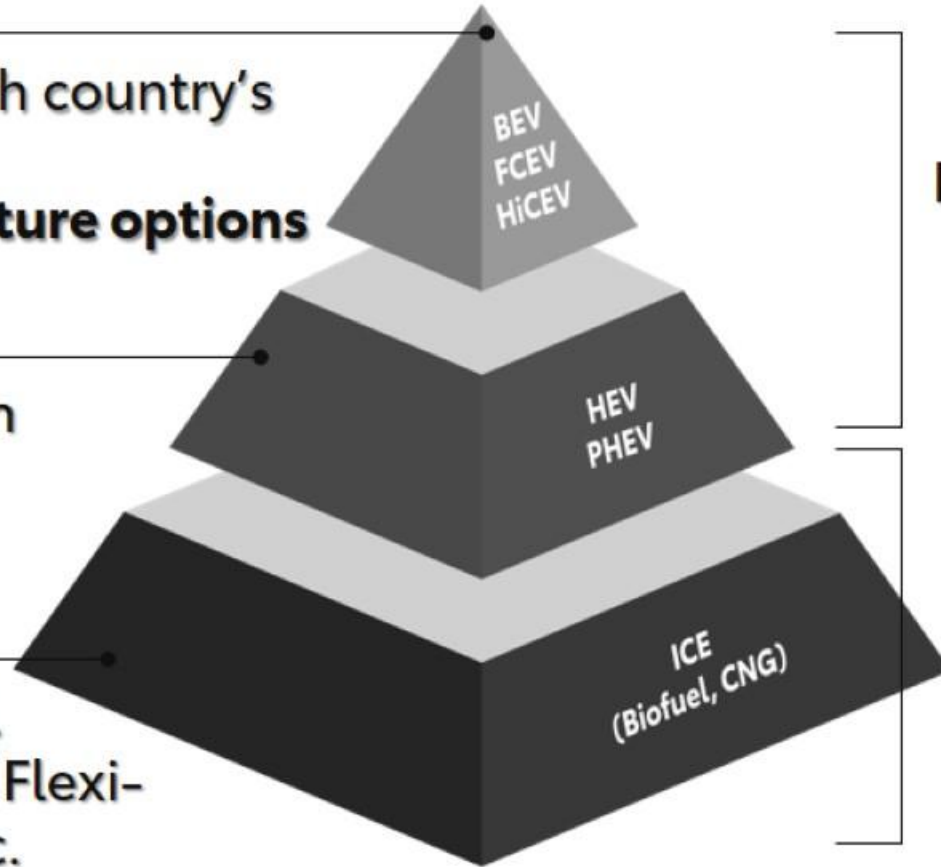
# Toyota's MPW Strategy Goes Beyond Vehicles

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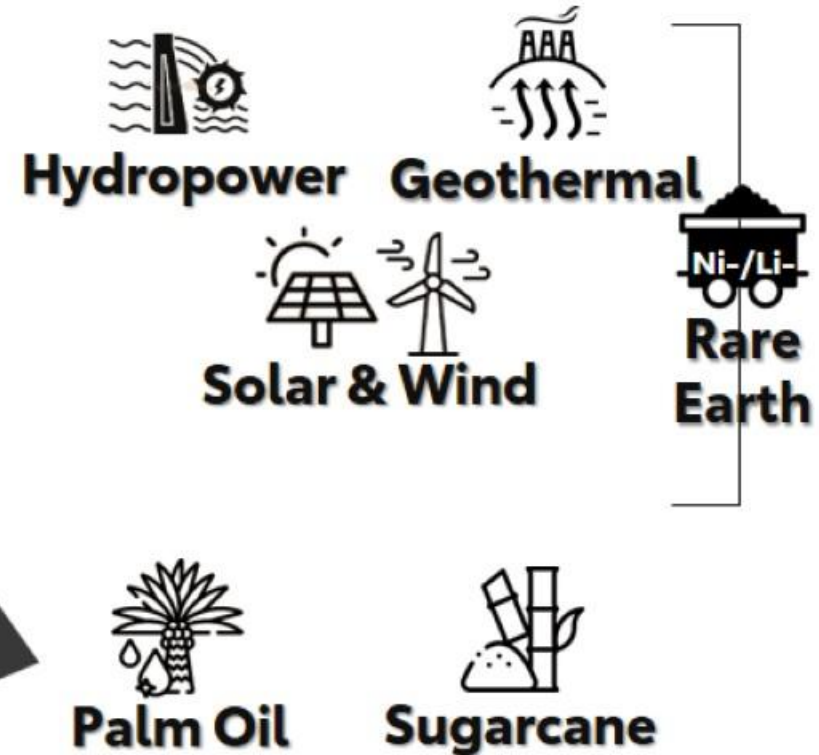
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## Multiple Pathway Technologies

- Offer **BEV/ FCEV** in line with country's infrastructure
- **H<sub>2</sub> ICE, synthetic fuel** as future options
- Accelerate electrification in **mass & accessible scale segments** through **HEV**
- Continuously improve **fuel efficiency** including use of Flexi-Fuel with **biofuel, CNG**, etc.



## Multiple Energy Sources

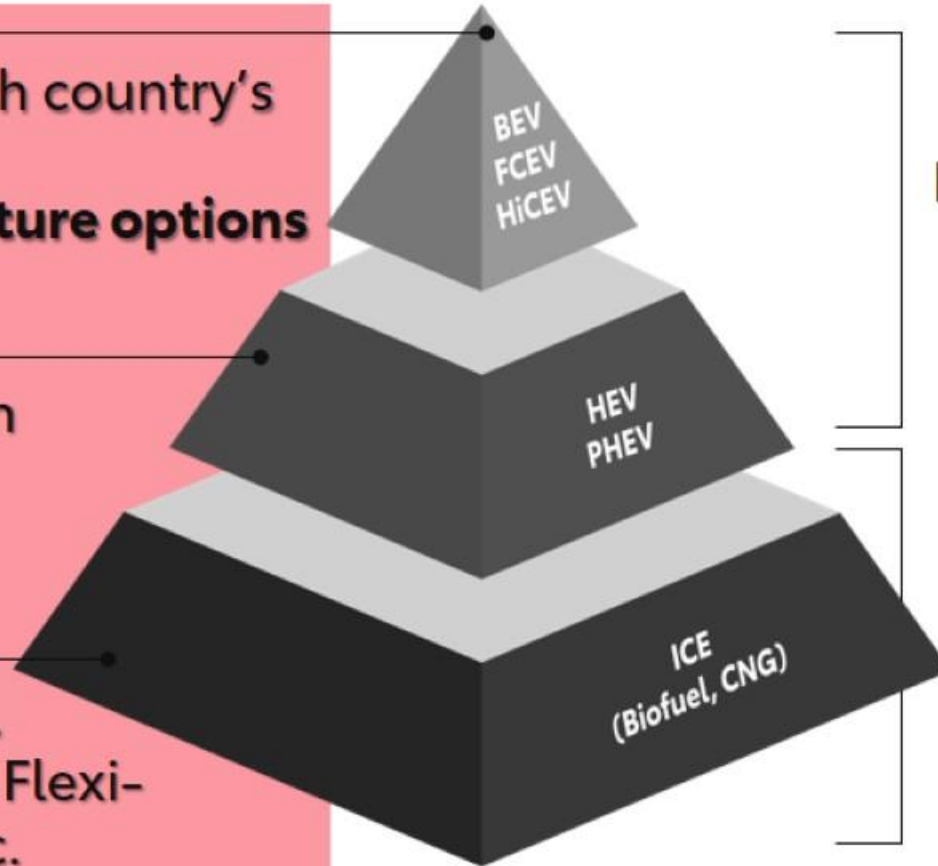




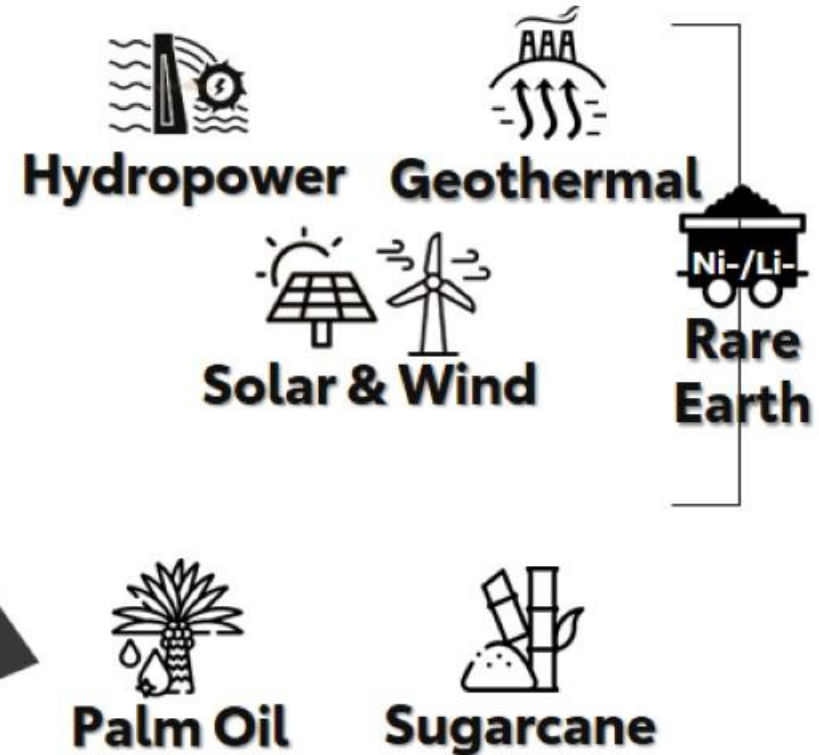
# Multi-Pathway of Vehicles

## Multiple Pathway Technologies

- Offer **BEV/ FCEV** in line with country's infrastructure
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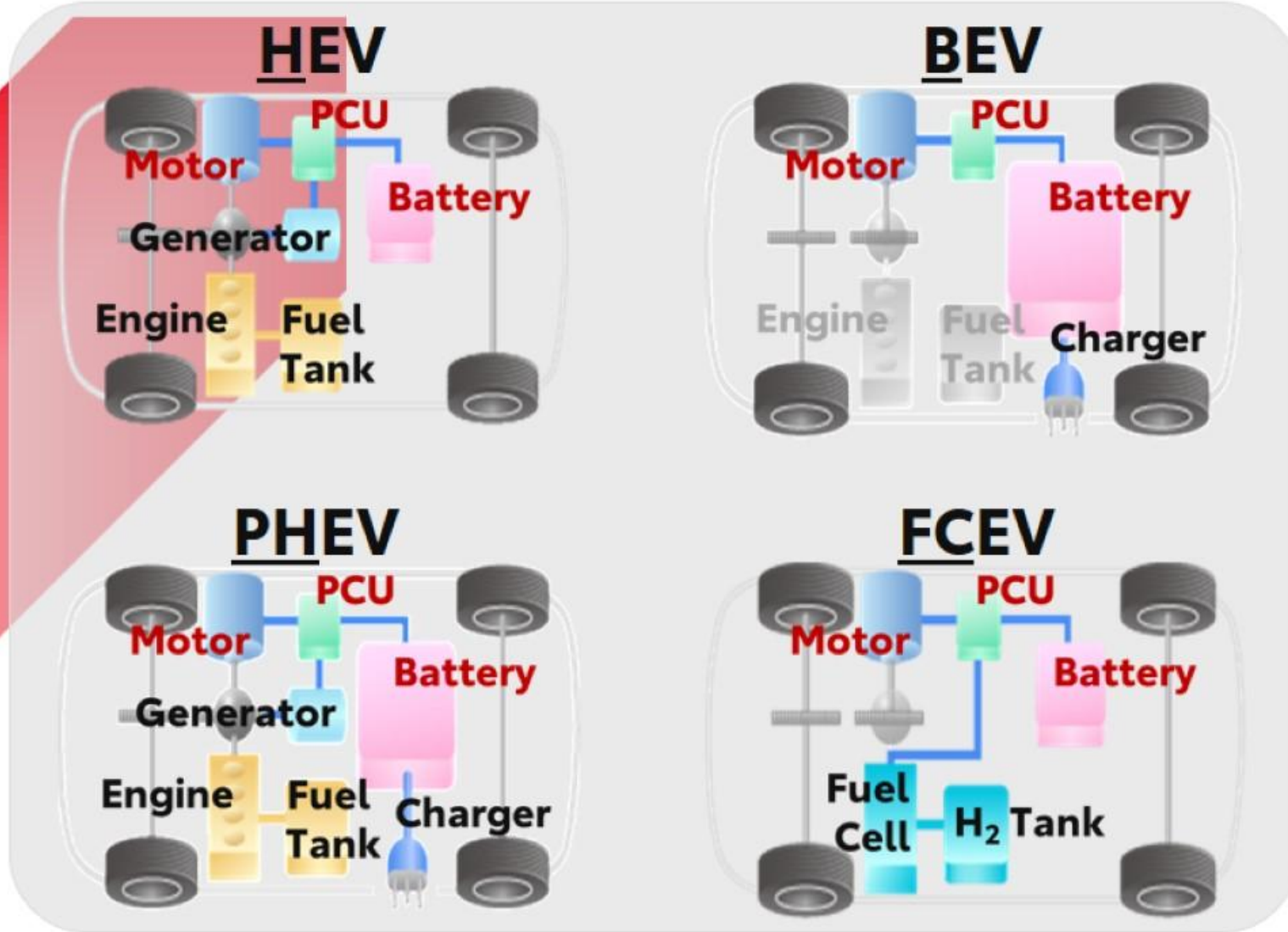
## Multiple Energy Sources



# What is Electrification? What is xEV?

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“Electrified Vehicle”  
“Electrification”

## Core Components



Motor



PCU

(Power control Unit)



Battery



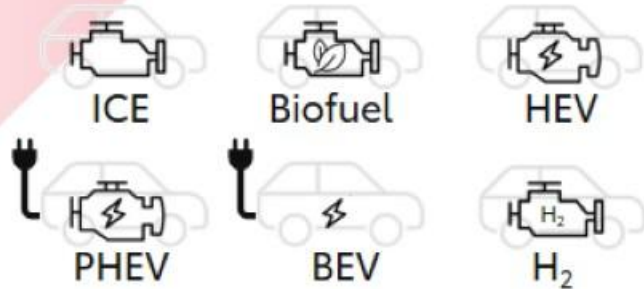
# 3 Lens for Electrification & Decarbonization

## Total Emission (Well-to-Wheel)

### • Energy Mix



### • Vehicle Powertrain



## Reducing Lifecycle Emissions



Energy policy

Customer Awareness

## Managing Economic Impacts

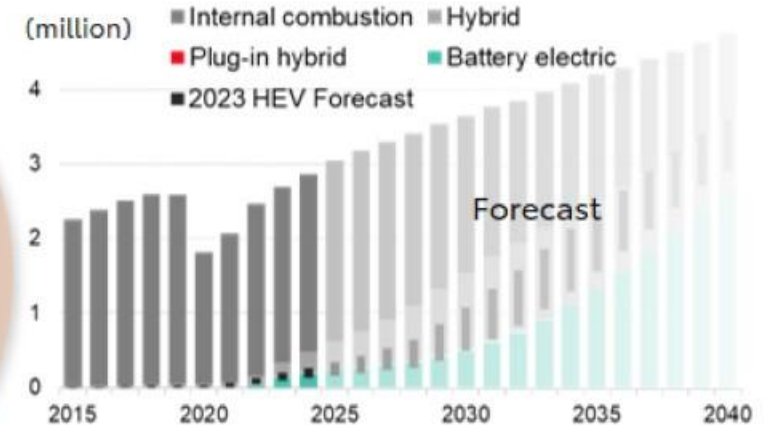


Incentives/ Subsidy



## Customer Acceptance

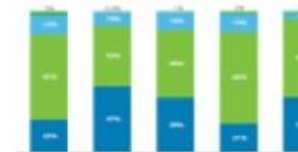
## South-East Asia xEV Mix (BNEF)



## Customers' Concerns



### Charging Time



### Price



### Convenience

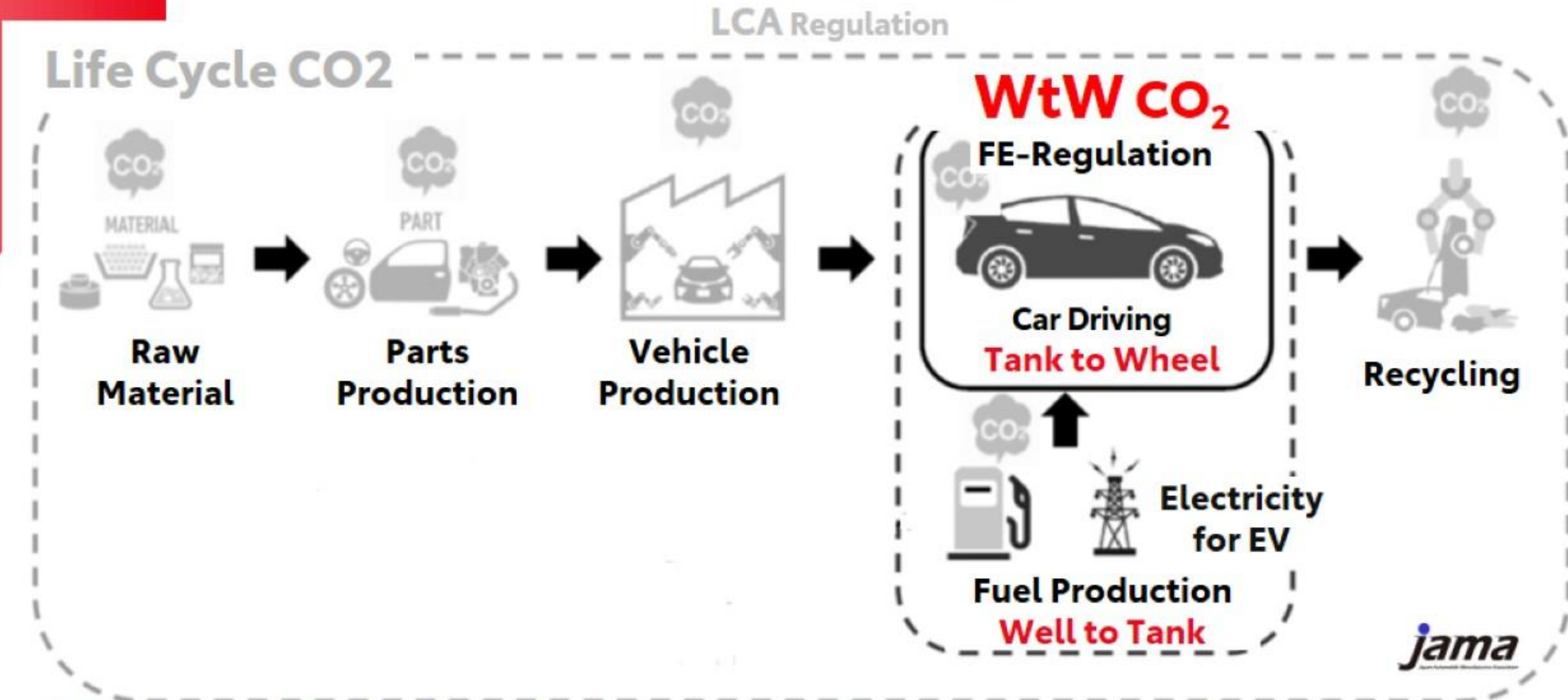
# Understanding Holistic Env. Impact

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Carbon Neutrality in the auto sector requires consideration of the environmental impact through **Well-to-Wheel and Life-Cycle CO<sub>2</sub> assessment**, with consideration of **energy and power generation mix**



Source: Toyota Motor Corporation, "Well-to-Wheel Analysis of Greenhouse Gas Emissions of Automotive Fuels in the Japanese Context"



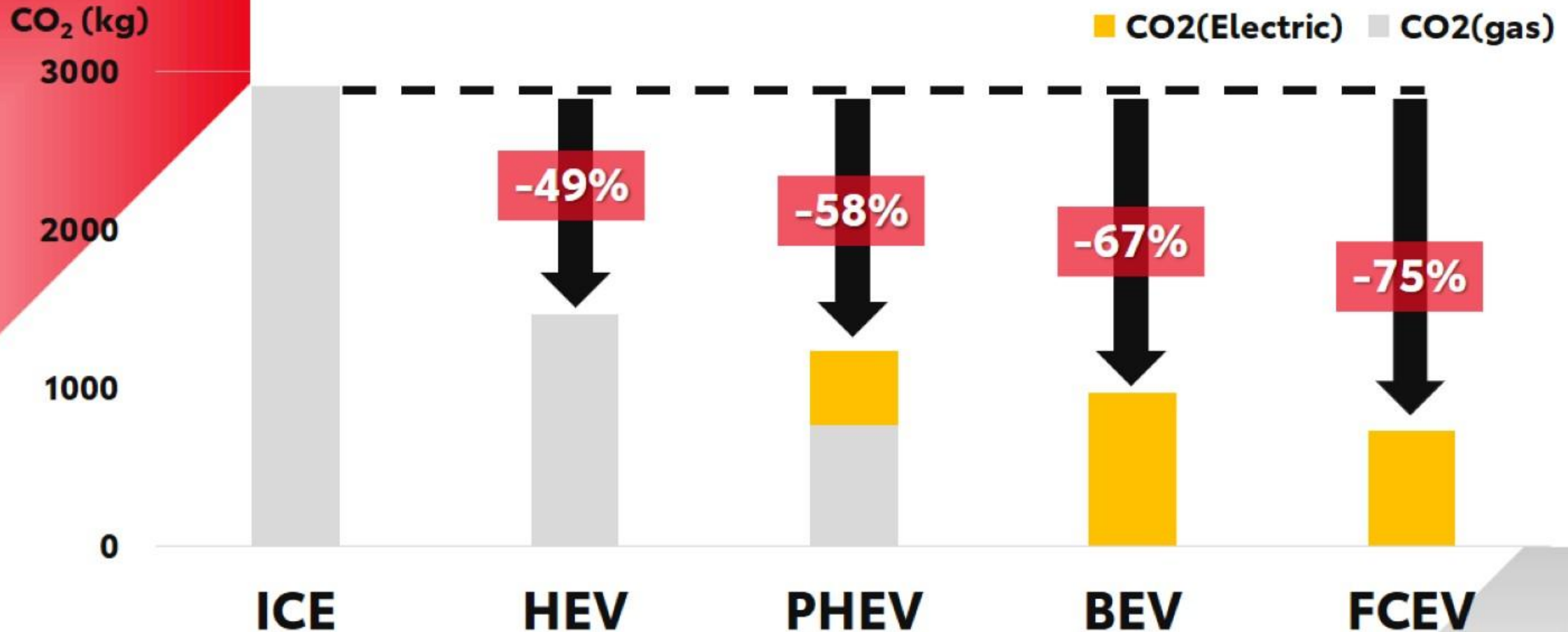
# Fuel Efficiency & Emission Efficiency

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Toyota's approach is based on Well to Wheel thinking with focus on practicality to gain scale as quickly as possible



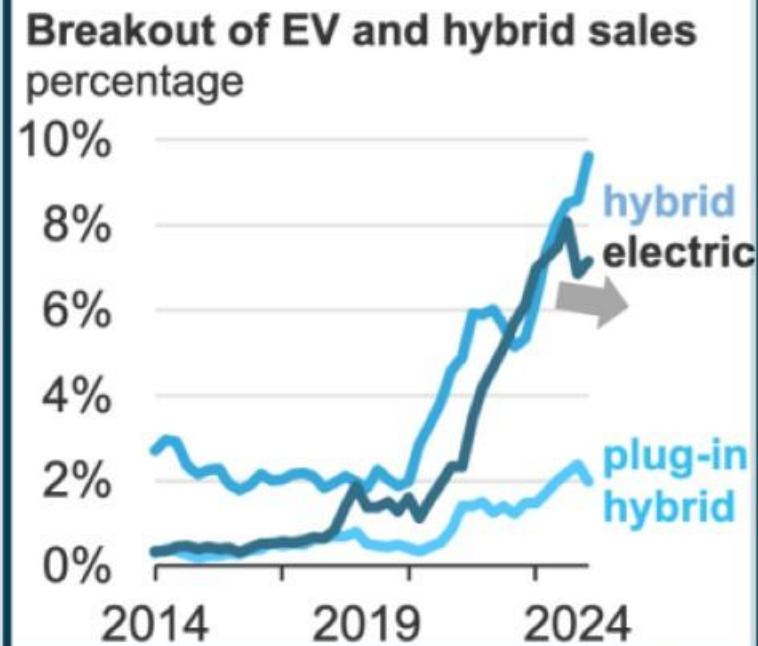
# Electrification Trend - Region

In regions where govt promote fair competition, BEV is facing 'intermittent growth' with more customers realize its limitation.

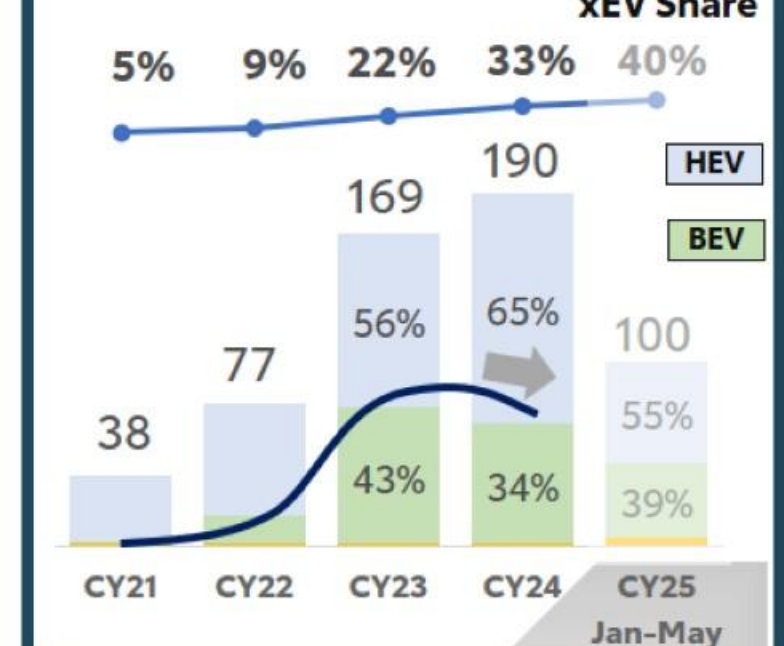
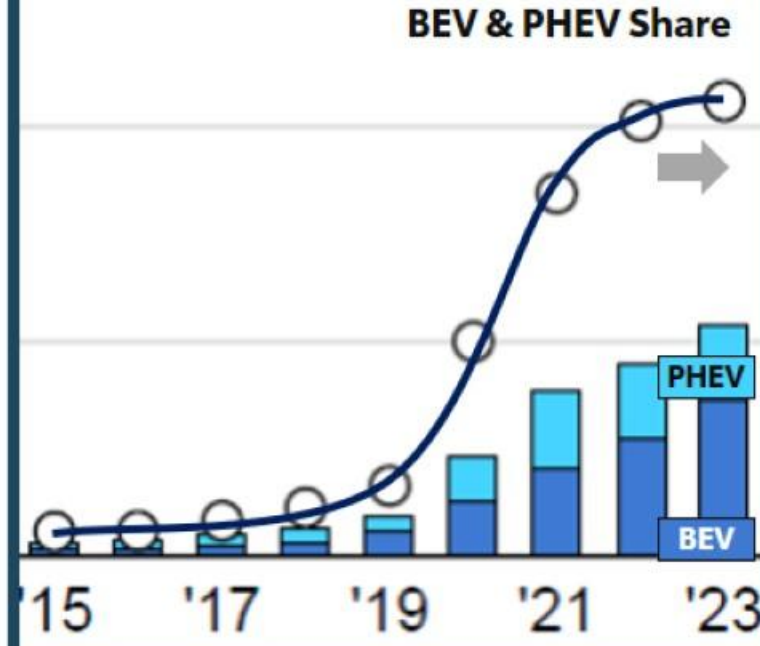
HEV is one of the strong "market-driven" solutions.



eia



iea





# Electrification Trend - Region

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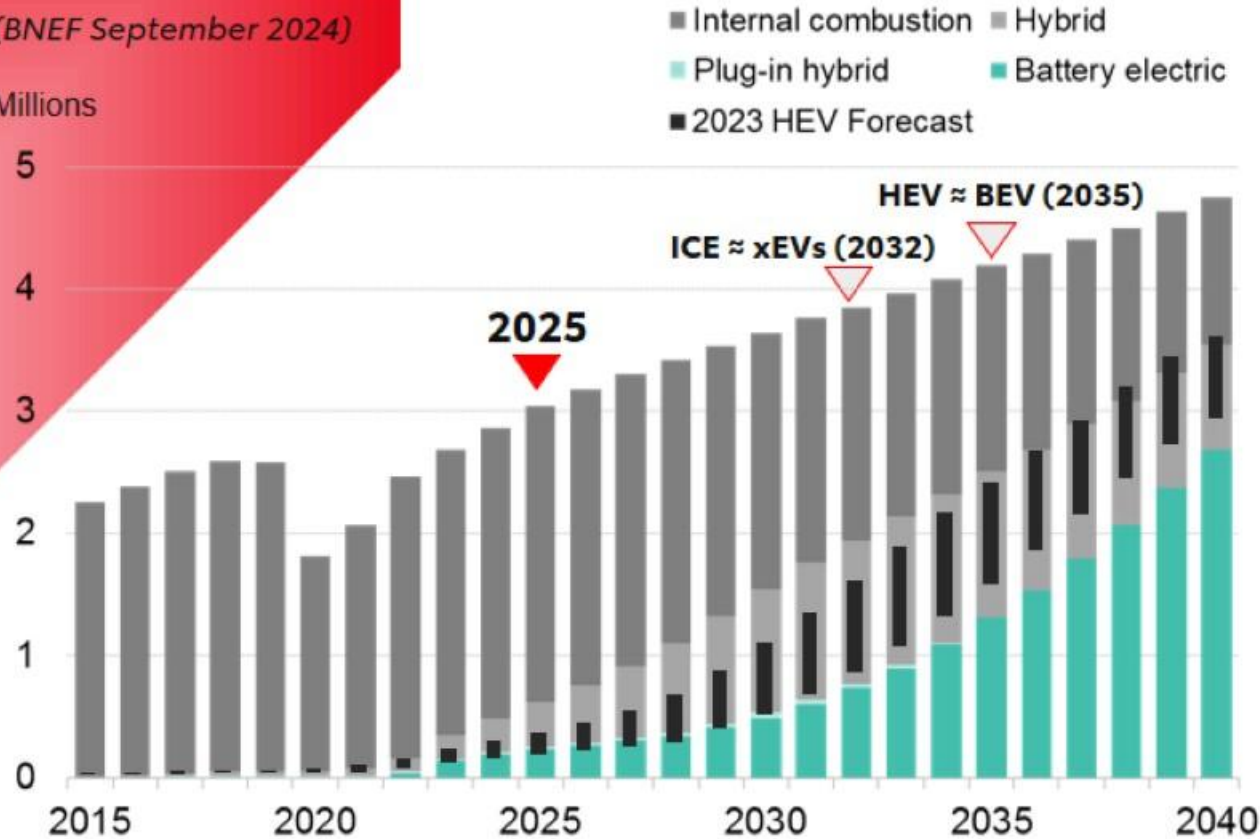


Based on BNEF's research, HEV forecast in ASEAN has been adjusted upwards while BEV will likely grow from 2032 onwards.

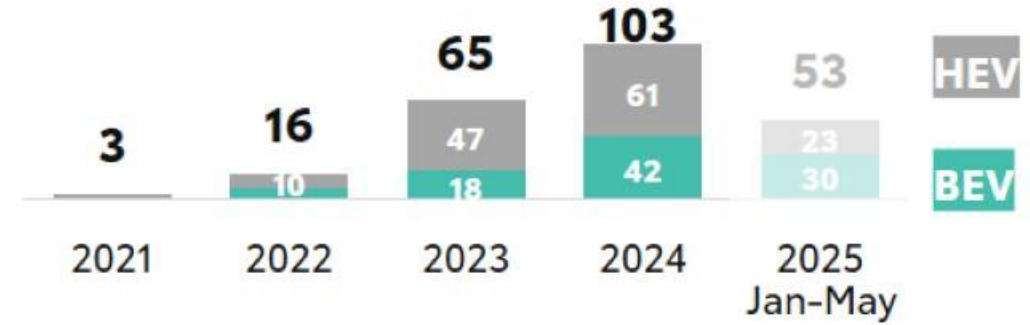
## Electrification Penetration in ASEAN

(BNEF September 2024)

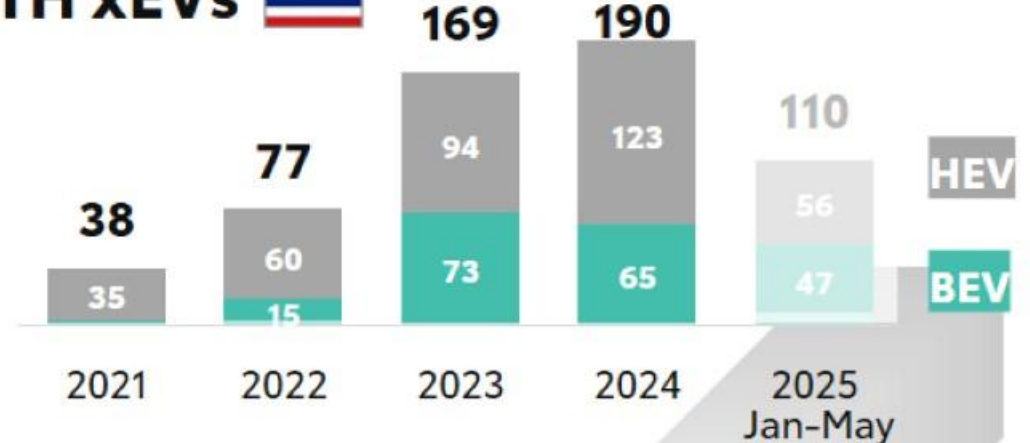
Millions



## ID xEVs



## TH xEVs



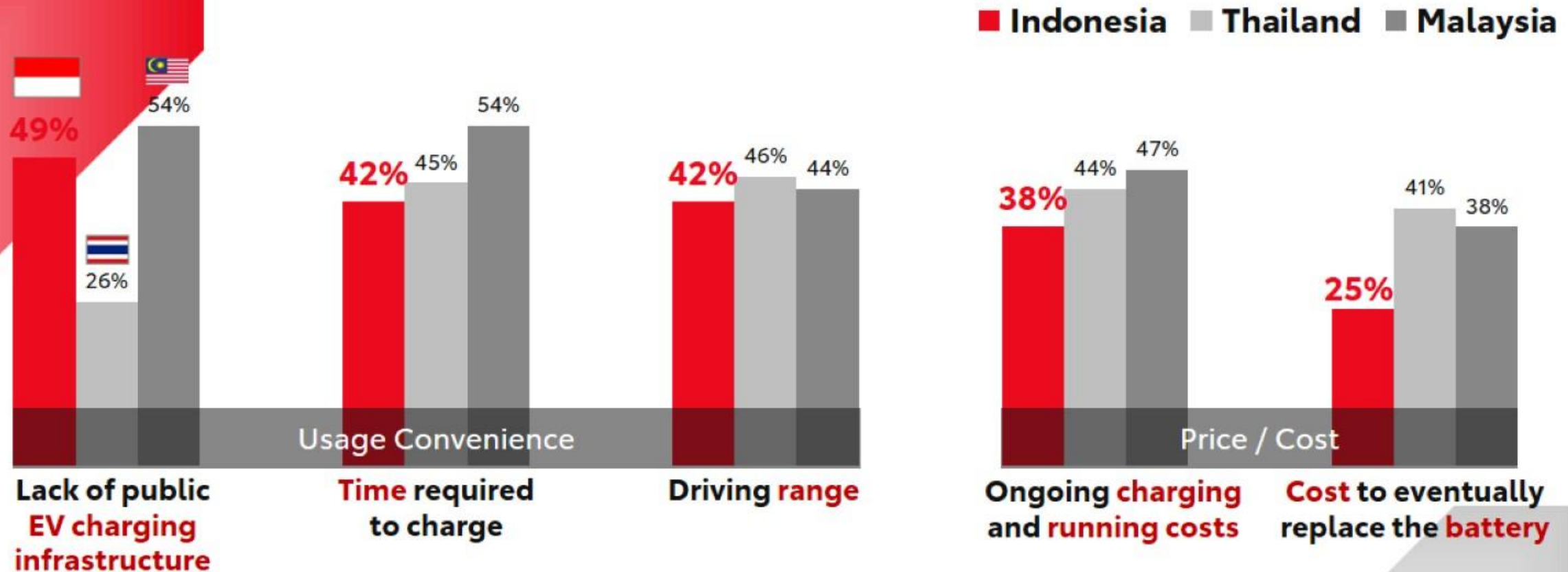
# BEV Current Consideration Factors

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Customer concerns are mainly based on charging infrastructure, time and range. Future costs and end of life issues are also being considered.

## What customer concerns





# Aligning Carbon Reducing Technologies & Taxes

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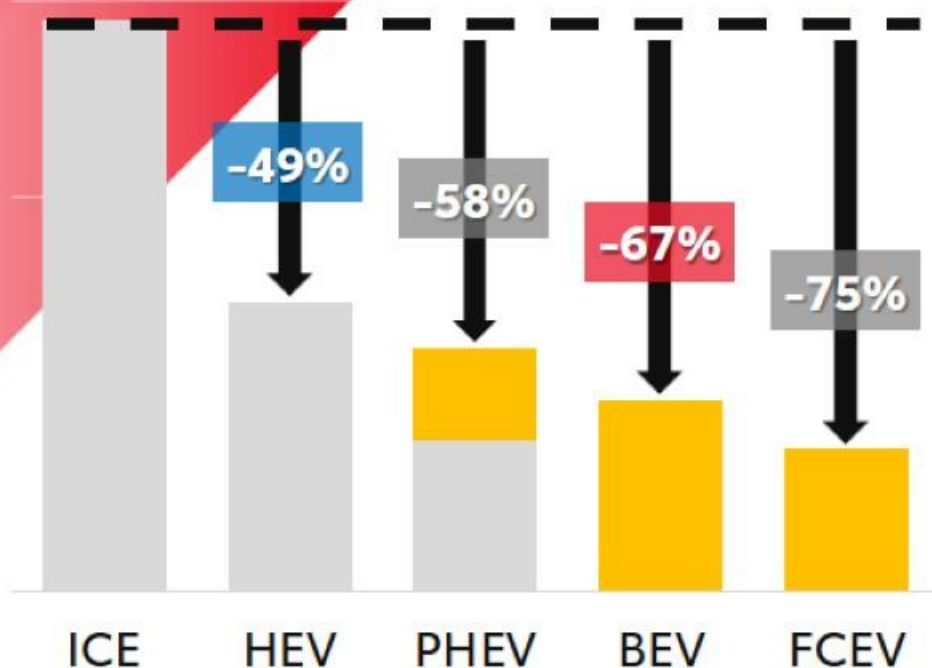


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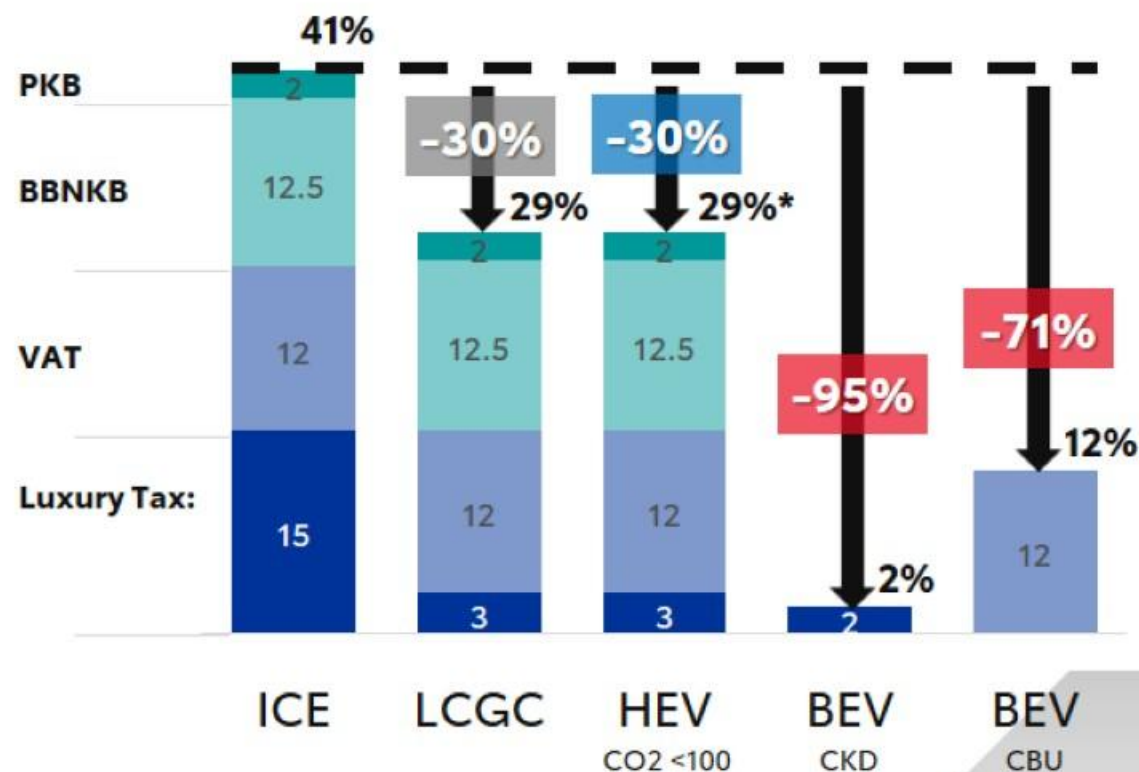
W2W based tax scheme can be considered to incentivize all cleaner technology.

## CO<sub>2</sub> Reduction (well-to-wheel)

■ CO<sub>2</sub>(Electric) ■ CO<sub>2</sub>(gas)



## CO<sub>2</sub> Taxes by Technology

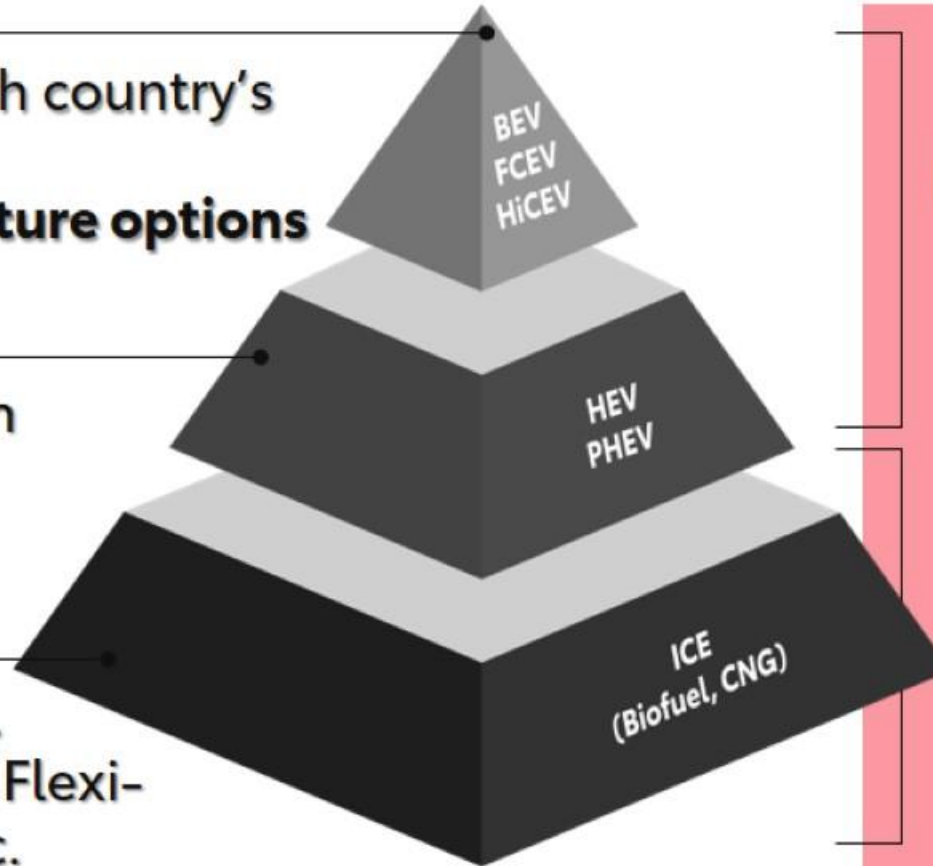


NOTE: \* '26~ tax could increase to 32% (tbc)

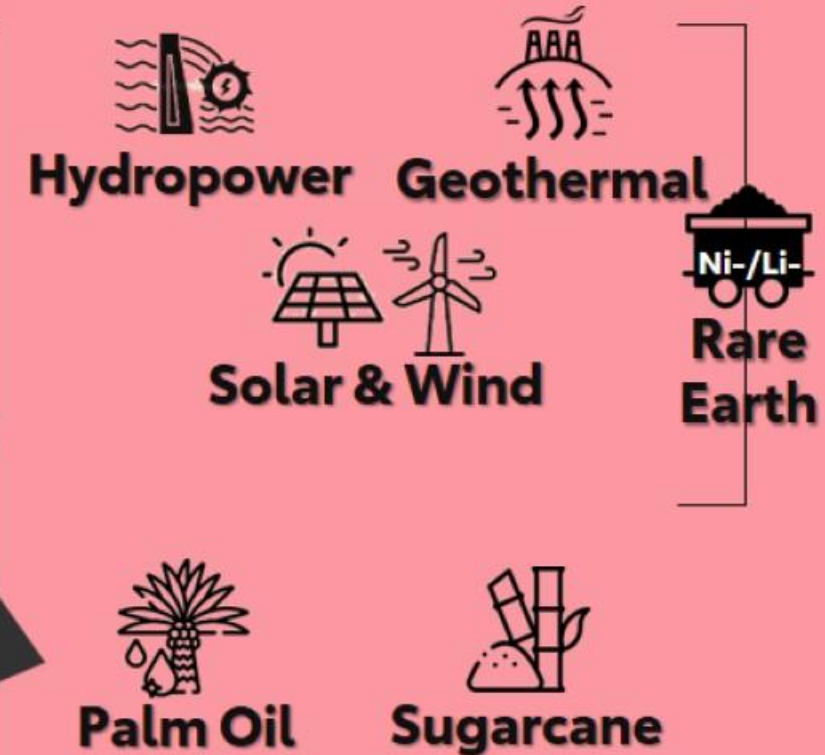
# Multiple Pathways of Energy

## Multiple Pathway Technologies

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## Multiple Energy Sources

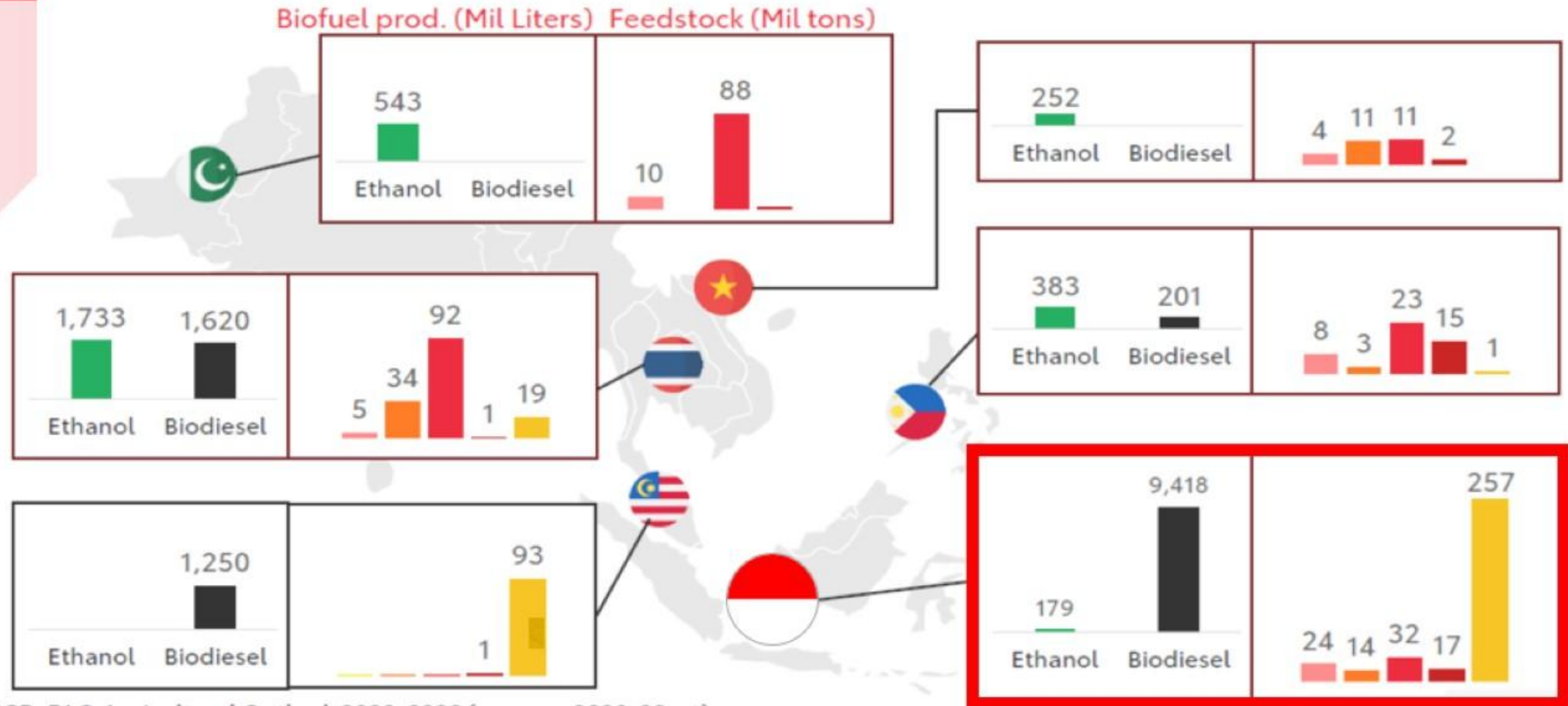




# What's in Each Country

## Local Source of Bio-fuel Production and Feedstock

Feedstock	
	Corn
	Cassava
	Sugarcane
	Coconut
	Palm Oil



Source: FAO (2022), OECD-FAO Agricultural Outlook 2023-2032 (average 2020-22est)

# Bio-Fuel can be a self-reliant energy source

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For the global south, bio-fuel is an affordable source of clean energy, but requires care on issues related to deforestation and food security

**Global South as dominant RE generator especially solar & bioenergy/ biofuel**



Brazil is 2<sup>nd</sup> world largest Biofuel generator High potential of E100 (derive from Sugarcane)

UNCTAD classification of economies  
Developed economies (Global North)  
Developing economies (Global South)



Brazil - India collaboration on bio-fuel started from 2024



India is 3<sup>rd</sup> world largest RE producers (World 5<sup>th</sup> largest in Solar and 4<sup>th</sup> in Wind) → High potential of Bio Ethanol



Indonesia has abundant high potential of resources for RE → High Potential of B40-50 (esp. palm oil)



Malaysia Biofuel – Palm oil promotion to support toward B30



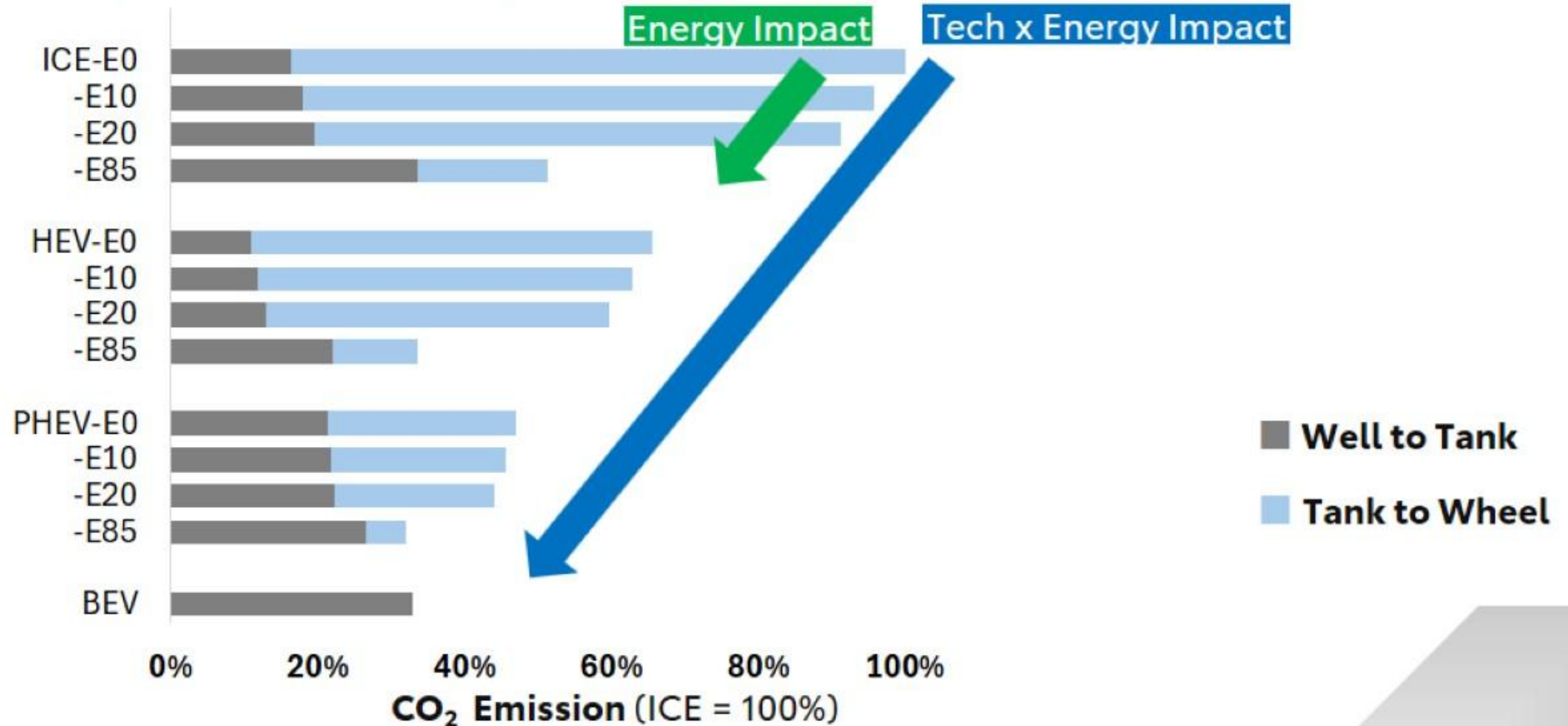
# Any Bio-Fuel Blend Brings Environment Benefit

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With Hybrid Bio-fuel Flexi-Fuel vehicles, the CO<sub>2</sub> Emission Reduction benefit can be even more significant.

Well-to-Wheel CO<sub>2</sub> on Technology x Energy (Source: UNDP TH)



# Contribution To Indonesia

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18

## President's Asta Cita

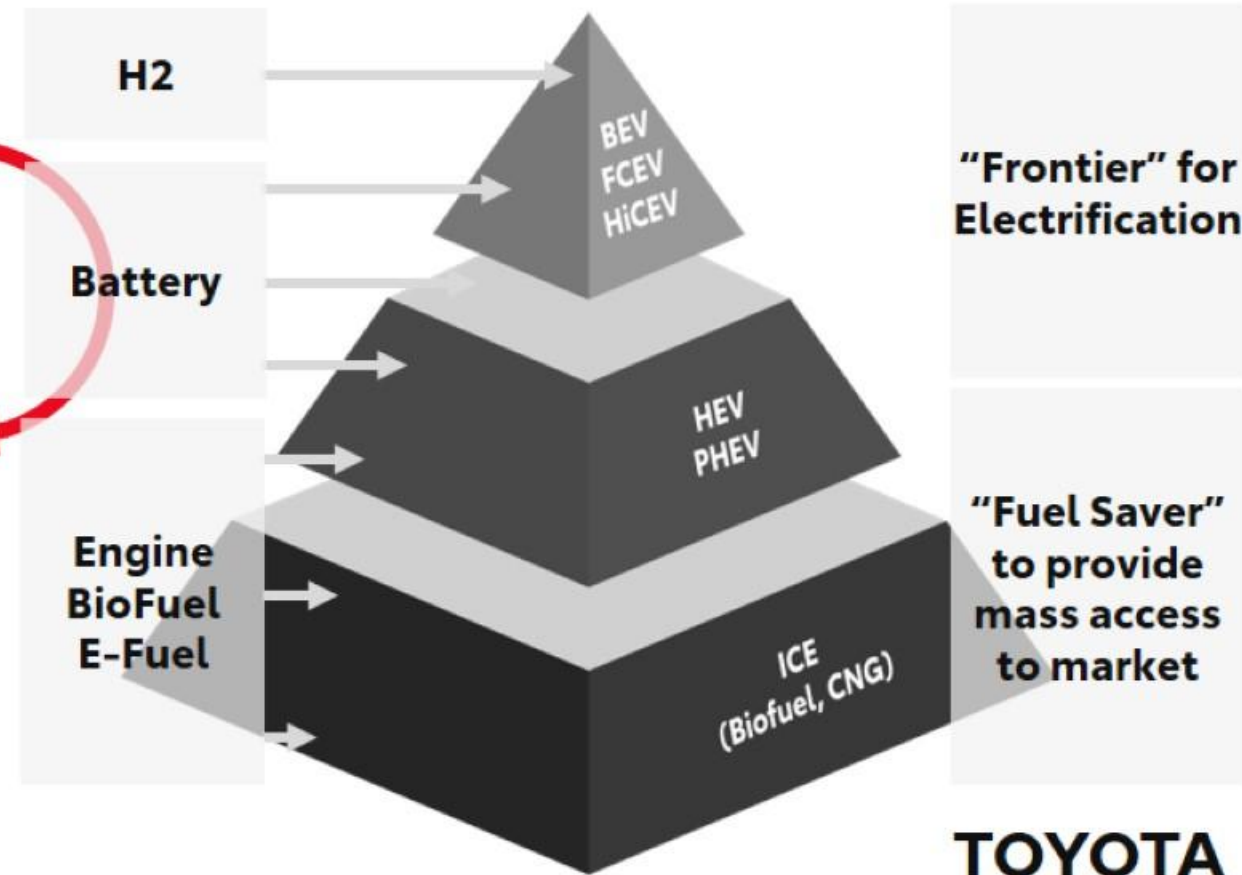


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## Multi-Pathway Strategy

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# Toyota has Developed Indonesia's Iconic Vehicles

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**KIJANG INNOVA  
ZENIX HEV**



**Toyota Avanza**



**The iconic Kijang and  
Avanza have  
become people's cars for  
Indonesia**

# Toyota Has Built Up an Automotive Ecosystem

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DENSO

TOYOTA  
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## Auto Related Industry



## Toyota Related Entities

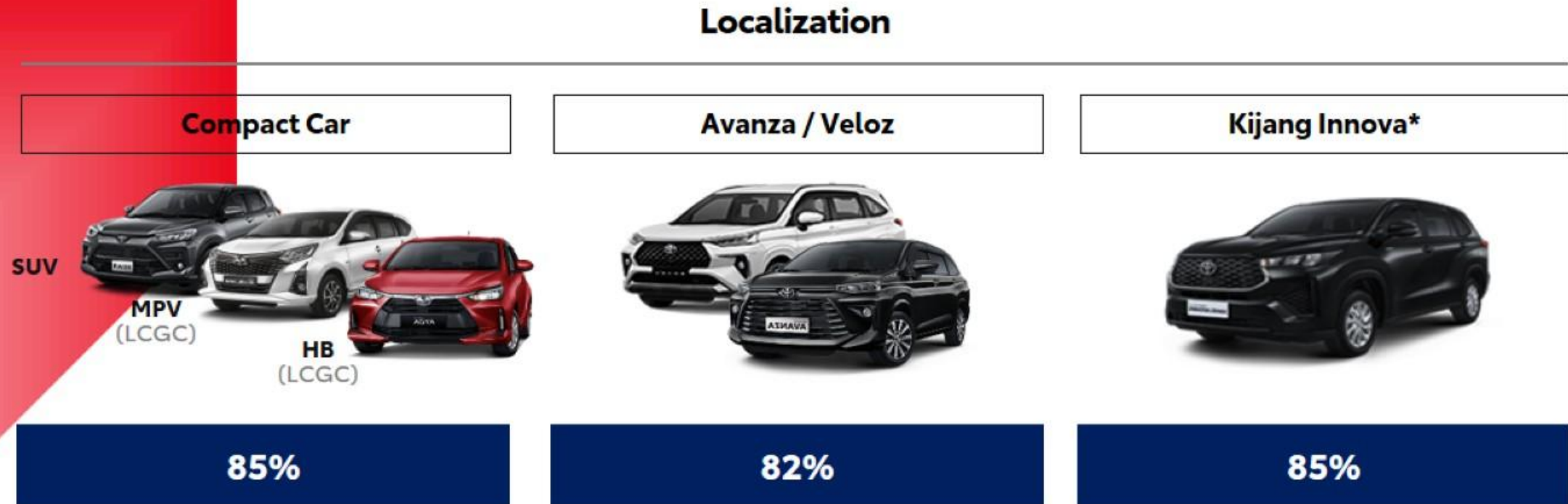
Entities	Employees
3 (TAM/TMMIN/ADM)	~ 20,000
Tier1: ~240	~130,000
Tier2-3: ~520	~165,000
~ 1,000	~40,000
<b>~1,700</b>	<b>&gt;360,000</b>
Employment in Auto Industry (All OEMs, Suppliers, etc)	1,400,000
Employment in All Auto Related Business (incl. logistics driver, garages, etc)	7,200,000



# Steadily Building Up Localization Ratio

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\* Electrified Vehicles with Localization of approx. 70%

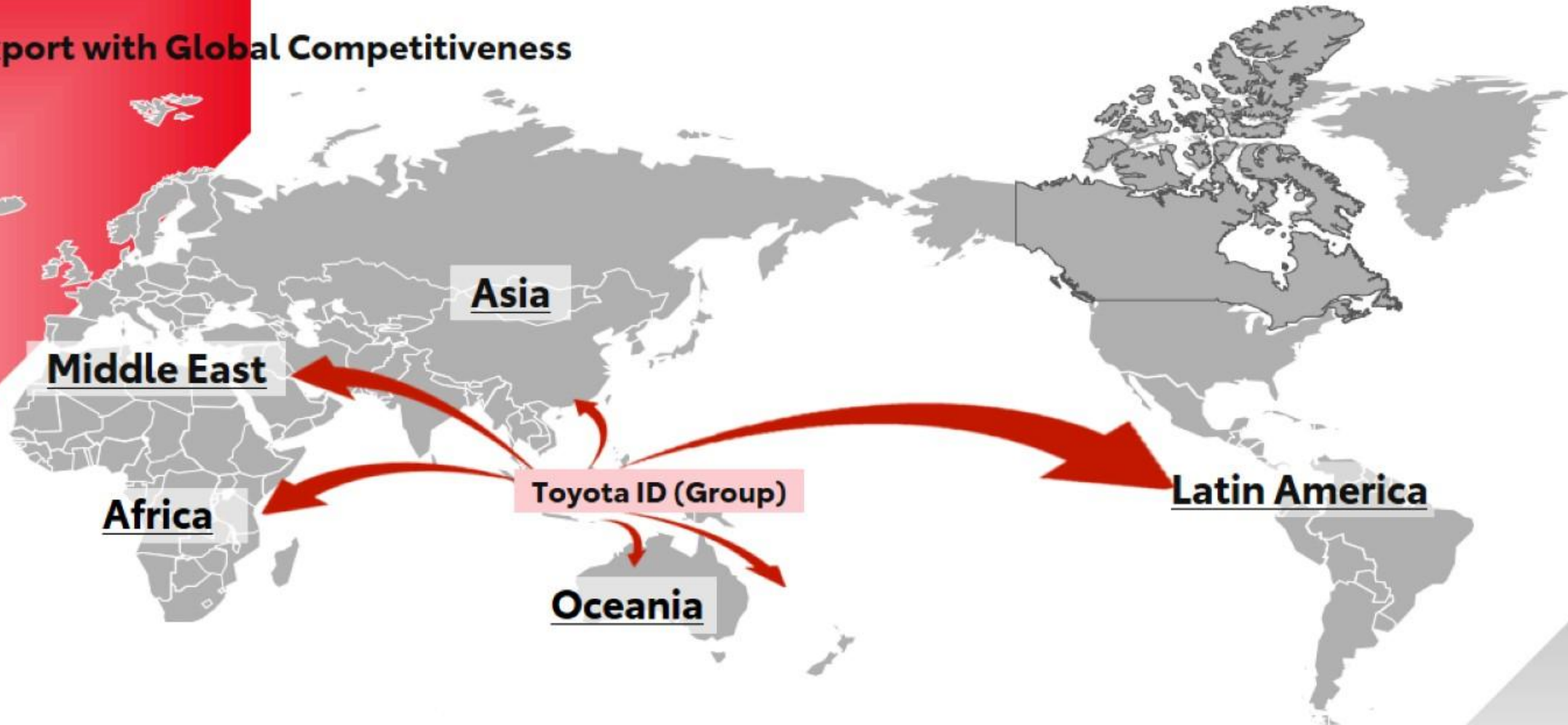
# Allowing Export Contribution from Indonesia

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**Toyota Indonesia export to 90 countries with over 255,000 units in 2024  
including HEV to 47 countries with over 35,000 units**

**Export with Global Competitiveness**





# Toyota's Way of Thinking

To **enhance competitiveness** and **strengthen local industry**, Toyota steadily builds up **domestic volume** to gain scale towards deeper **localization** while exploring and expanding **export** opportunity

**Stable Government Policy and Support Required**

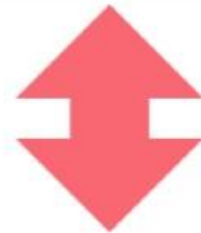
**Domestic  
Volume**



**Component  
Localization**



**Export  
Volume**



**True National Competitiveness**

# We make People Before we make Cars

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**Toyota has worked to develop suppliers and logistic partners, worked with universities and State Owned Enterprises and now aims to increase knowledge to the public.**







*Thank You*

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**MOBILITY  
HAPPINESS  
FOR ALL**