

16th GIAC: Integrated Green Technology

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Agenda

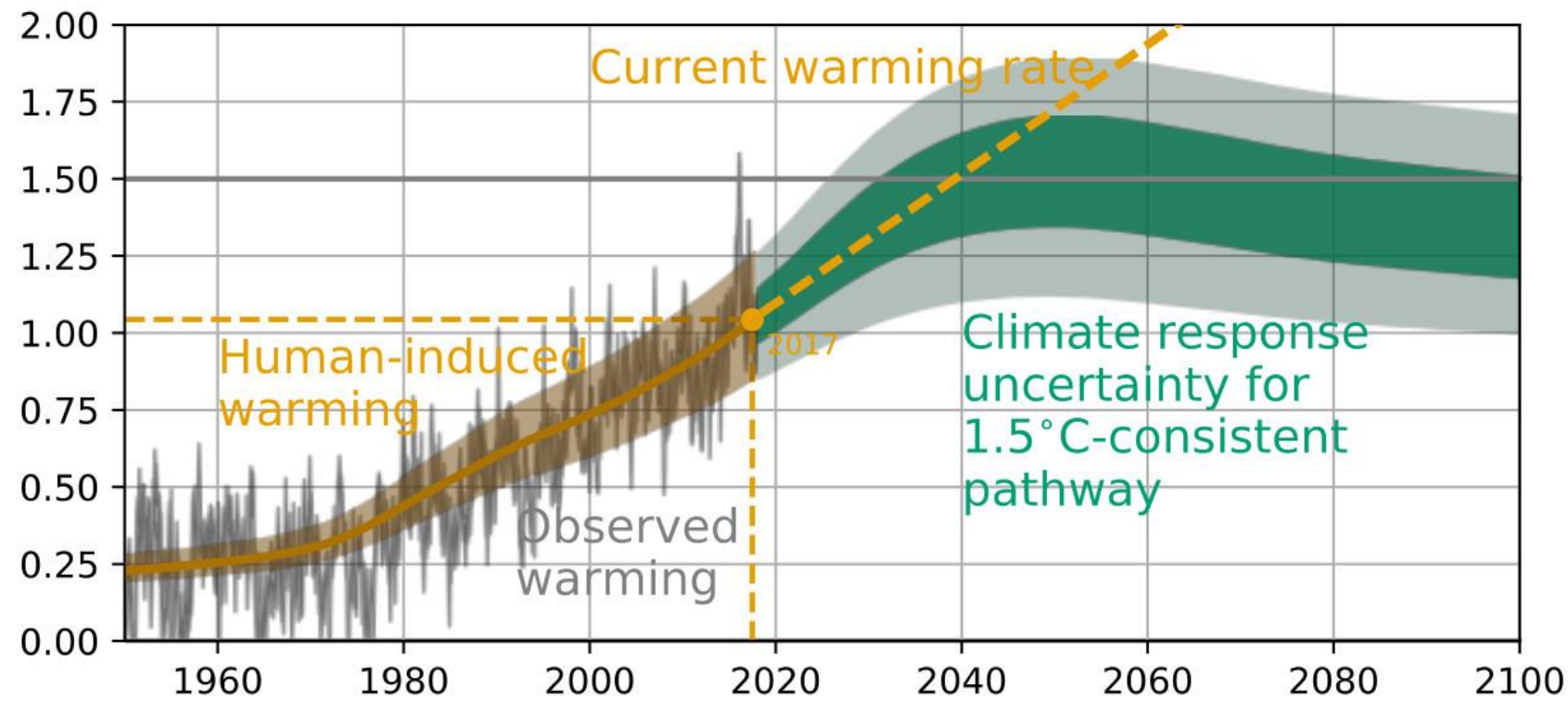
- **Global situation and Toyota's Stance on Carbon Neutrality**
- **3 Lens in better understanding Electrification**
- **Toyota's Initiatives and Efforts in Indonesia**

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- **Global situation and Toyota's Stance on Carbon Neutrality**
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No Time to Waste

Warming relative to 1850 – 1900 (°C)



Source: IPCC Special Report on Global Warming of 1.5 °C, Chapter 1 – Technical Annex 1.A, Fig. 12



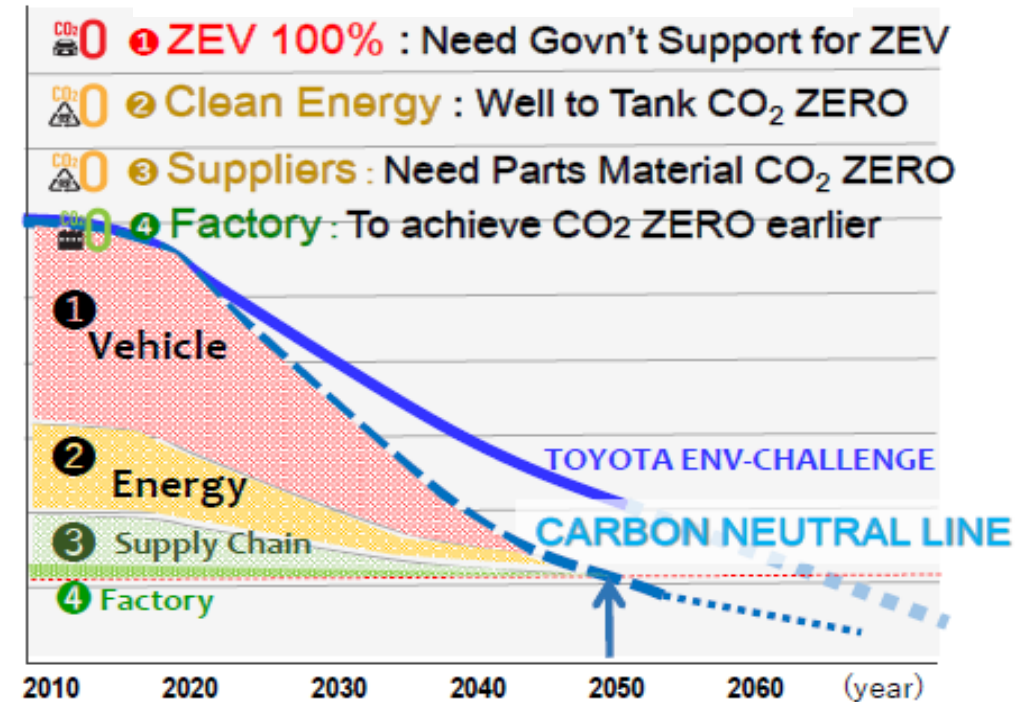
Global Toyota's stance on Carbon Neutrality

- Toyota set our Environmental Challenge in 2014.
- In 2021 Toyota recommitted to Carbon Neutrality in 2050 with holistic, realistic and sustainable approach

Toyota Environmental Challenge



Toyota's Stance on Carbon Neutrality



Toyota Environmental Initiatives have history

Toyota's environmental efforts started in the '70s. Toyota has led the commercialization and mass deployment of multiple low carbon and advanced green technologies over the last 50 years.

Toyota's Historical Environmental Initiatives

Establishing the Toyota identity

Founded **Toyota Metal Co.**, the first end-of-life vehicle shredding plant



1970 // 1992

TMC established the **Electric Vehicle Development Division**

Leaping forward as global corporation

First BEV Launch "**RAV4**" // "**CAMRY**" HEV first launch



1996 1997

First "**PRIUS**" HEV Mass Market



2006

"**MIRAI**" FCEV first launch



Environmental Challenge Set Up



2015

2016

"**Corolla Altis**" & "**C-HR**" Hybrid first launch



Toward the mobility society of the future

Start of full-scale BEV launch



2020

2021

// 2050



"**MIRAI**" 2021 Launch

Recommit to **2050 Carbon Neutrality**

Announced **70 electrified models** by '23

Achieve Carbon Neutrality



Toyota's All Electrification Line-up is aimed at speed and scale

- Decarbonization efforts can be started immediately through Multiple Pathways

1997 – Now **20** Million* electrified vehicles
Approximately fewer **160 million** metric tons of CO2 emissions

* Equivalent to over 6 million BEVs

Based on 2022 Line-up

HEV

48 models



PHEV

5 models



BEV

8 models



FCEV

2 models



Even today Global Toyota has the biggest line-up of xEVs: 60+ models; selling over 2M xEVs a year

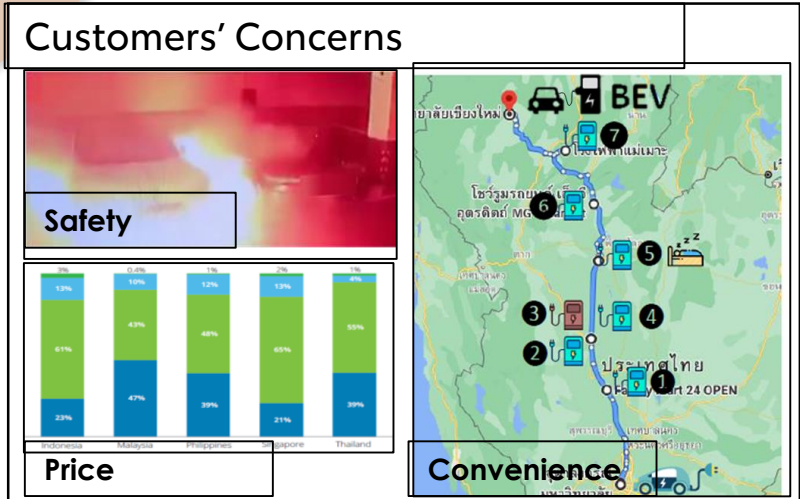
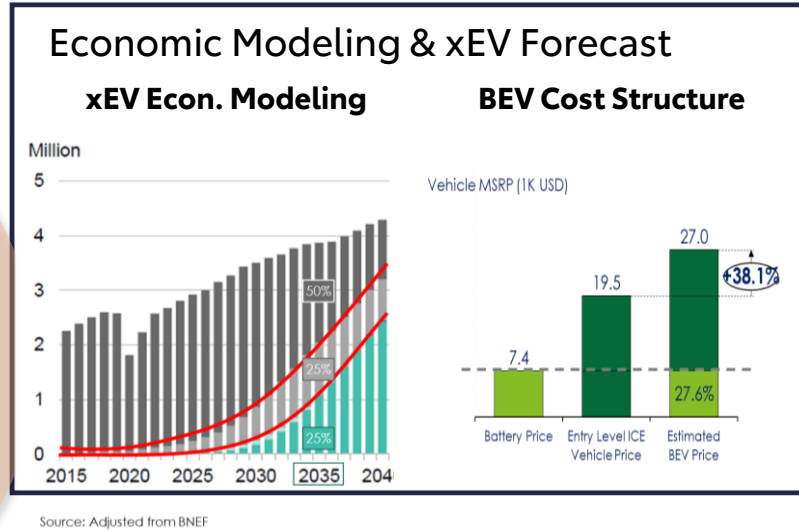
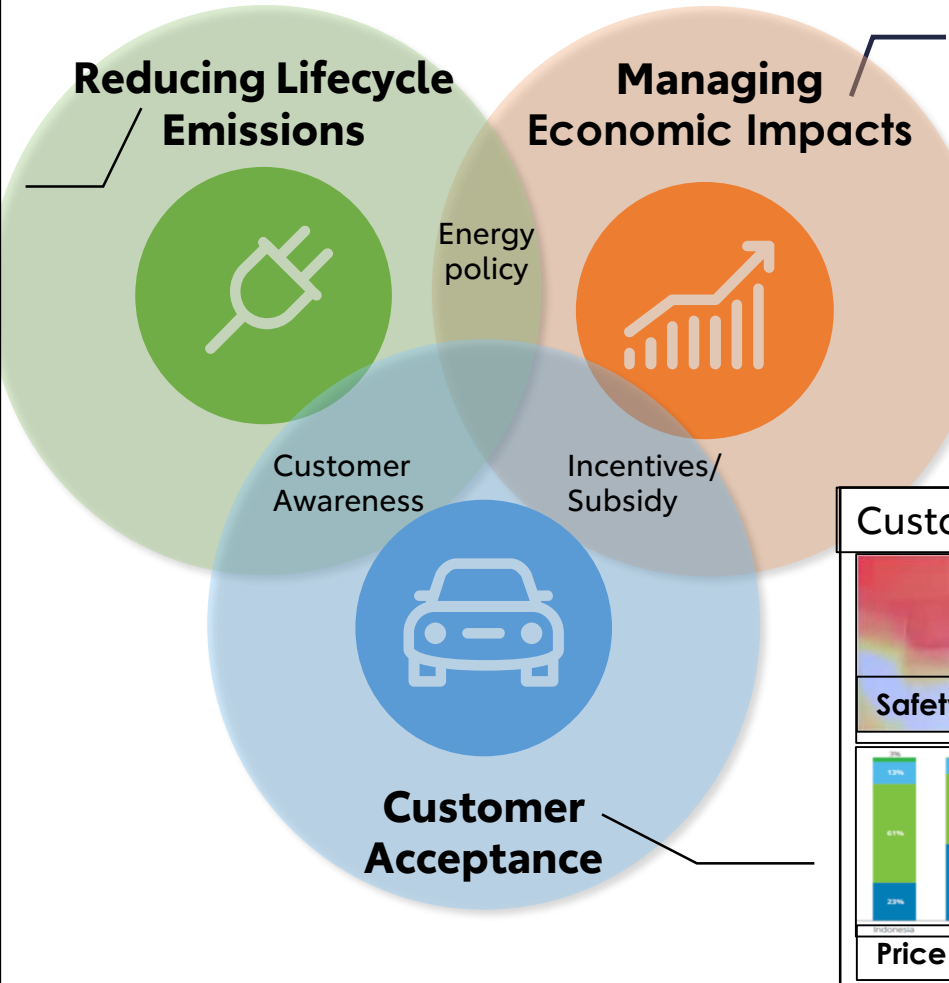
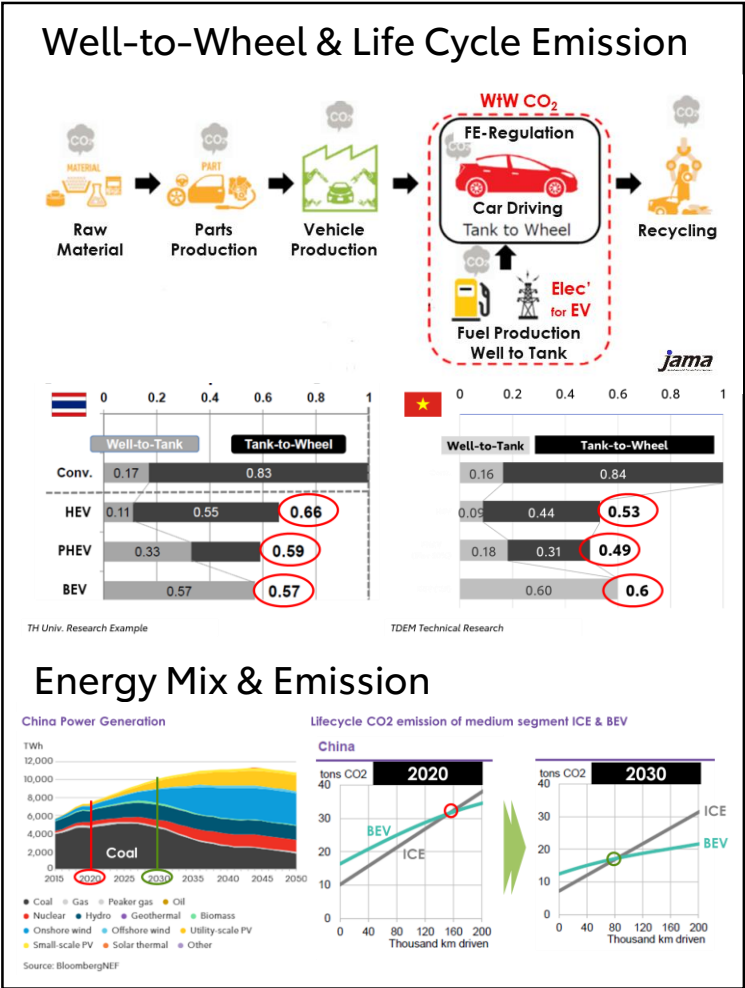
Global Toyota's Strong Commitment to BEV



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3 Lens towards understanding Electrification & Decarbonisation



Under the 3 lens approach above, it is easier to understand Toyota's earnest approach to electrification and carbon neutrality 10

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Toyota's Electrification Initiatives

Towards future electrification, **Toyota will provide multiple pathways** of electrification and clean energy options (incl. bio-fuel) for Indonesia's customers... **Leaving No One Behind !**

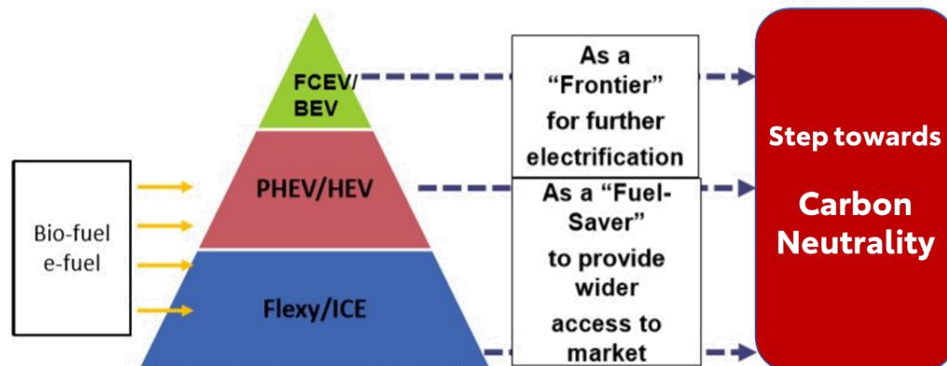


TOYOTA
INDONESIA



Localization & Export Business

(HEV Local Prod. from 2022 and Battery Assy Prod./ 3R)



- Provide cleaner **multiple powertrain pathways** (bio-fuel, HEV, PHEV, BEV) to **meet with each mobility need**
- **Support and accelerate battery industry dev.** by **creating xEVs demand**
- Initiate **Battery 3R management**

Toyota's Electrification Initiatives

Continuing to **support Indonesia's national interests**, including towards understanding and development.

Toyota initiative to collaborate between Gov't, Industry, and Academia

- Towards **battery industry development**, Toyota support **people** development and as a **demand** creator



- **BEV trial project in Bali and beyond**, to contribute to customers & vehicle usage
- **Collaborate w other JP OEMs**
- **Support BEV for G20 in Bali**



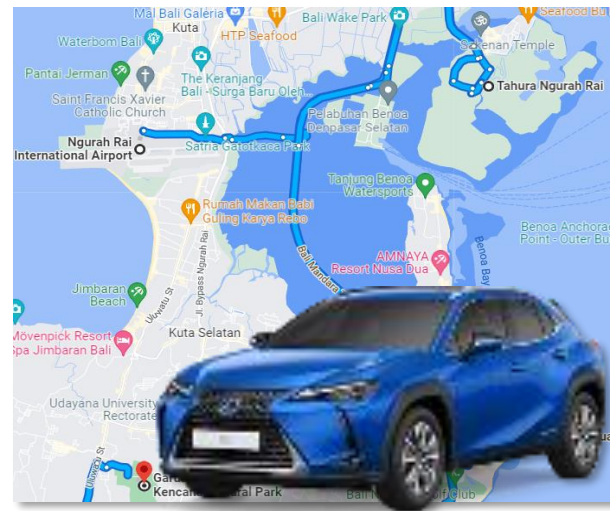
- **Establish xEV Center** as a foundation for sustainable **electrification eco-system**
- **Open for public visit**



... and Beyond

Toyota Ongoing Initiative: Bali Mobility Project on Electrification

Green and digitalization for sustainable green mobility



- Develop human-centric public transport system
 - Create model for optimizing public transport that:
 - Improves transport efficiency based on demand

Under Study

- Develop model of potential response to xEV
 - Optimal routes for xEV
 - Optimal location for xEV charging stations
 - Impact of EV to transport and carbon emissions

HR Development

Crucially, Toyota ID is making utmost **effort to develop local human resources**, not only in **automotive business** but also to **next generation of technology for mobility**



- Establishment of **Toyota Learning Center & Toyota Indonesia Academy** to facilitate **vocational education development**



TMMIN PD Warih Direction

- **HRD is our top priority - "Make people, before Make Product"**



- Together with Indonesian engineers, developed **Kijang Innova EV concept** to **study technology and real usage conditions in Indonesia**

Summary

1. We need immediate and collective action to resolve climate change

2. Toyota believes in Multiple Pathways towards speed and scale of Decarbonization

- Each mobility technology has its role. All should be supported to meet national objectives.
- Toyota committed to provide all xEV technologies in line with the customer's needs

3. The 3 Lens towards appropriately understanding Electrification & Decarbonisation

- Emission reduction to be effective with energy transition
- There is a need to develop comprehensive electrification support and scheme to manage market and industry transition
- Resolving customer concerns on infrastructure, range, and charging time are key priority to accelerate electrification adoption.

4. Toyota's Initiatives and Efforts in Indonesia

- Toyota is making several initiatives in building electrification mobility, together with awareness and HR Development for Indonesian society.



Move your world