

WIDJANARKO

DIRECTOR

PLC & TECHNICAL, TECHNICAL GOVERNMENT AFFAIRS
PT TOYOTA MOTOR MANUFACTURING INDONESIA

Education

- ✓ 1994: Bachelor degree, Mechanical Engineering at Trisakti University.
- ✓ 2021: Master Degree, Industrial Engineering at Institut Teknologi Bandung.

Professional Experience

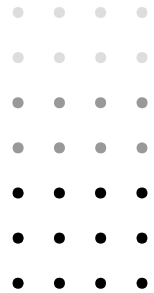
- ✓ **1995** Start working at Toyota Astra Motor, Purchasing Division.
- ✓ **1999-2000** Assignment in Japan at Toyota Motor Corporation(TMC) as Country Representative Officer for Purchasing Project Planning.
- ✓ **2010-2012** Assignment in Thailand at Toyota Motor Asia Pacific Engineering Manufacturing as Deputy General Manager of Purchasing Project Planning for Asia Pacific
- ✓ **2014-2016** Purchasing Div. Head at PT Toyota Motor Manufacturing Indonesia
- ✓ **2016-2019** Product Business Management Div. Head at PT Toyota Motor Manufacturing Indonesia
- ✓ **2019-2021** Assignment in Thailand at Toyota Daihatsu Engineering & Manufacturing (TDEM) as General Manager of Regional External and Public Affairs.
- ✓ **2021~ 2023** Deputy Chief Officer 2023 - present as Director for Technical & Production Logistic Control at PT Toyota Motor Manufacturing Indonesia (TMMIN).



Toyota Strategy through Green Product & Green Industry towards Indonesia Net Zero Emission 2060



by
Widjanarko
Director



GIAC August 15' 2023



AGENDA

01 Toyota Indonesia Overview

02 Global & National Environment Concern

- *Global concern and ID Government's Policy*
- *Toyota Commitment on Carbon Neutrality*

03 Toyota ID Initiative & Action

- Green Product [Challenge -1]
- Green Supply Chain [Challenge -2]
- Green Manufacturing [Challenge-3]



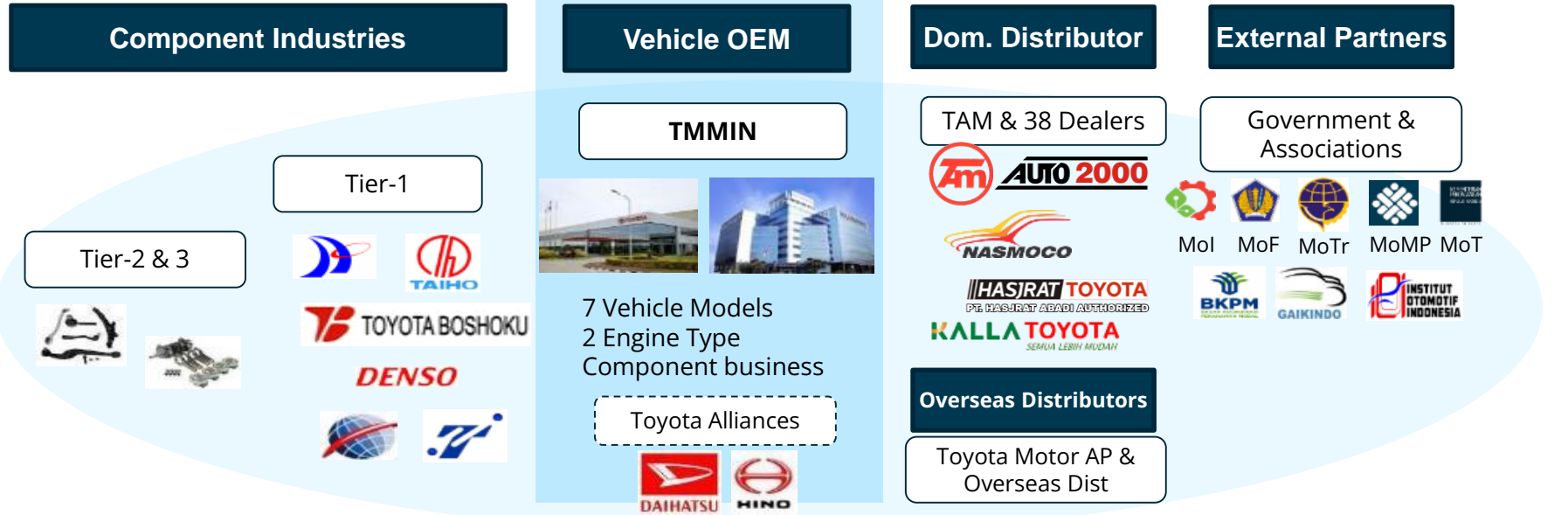


01

Toyota Indonesia Overview

Toyota Indonesia Overview

TMMIN as Vehicle OEM influences total Automotive Industries with more than 130 companies and more than 100 thousand employees



Toyota Indonesia Value Chain


More than **130** Companies


85% Part Localization


>100,000 Employees

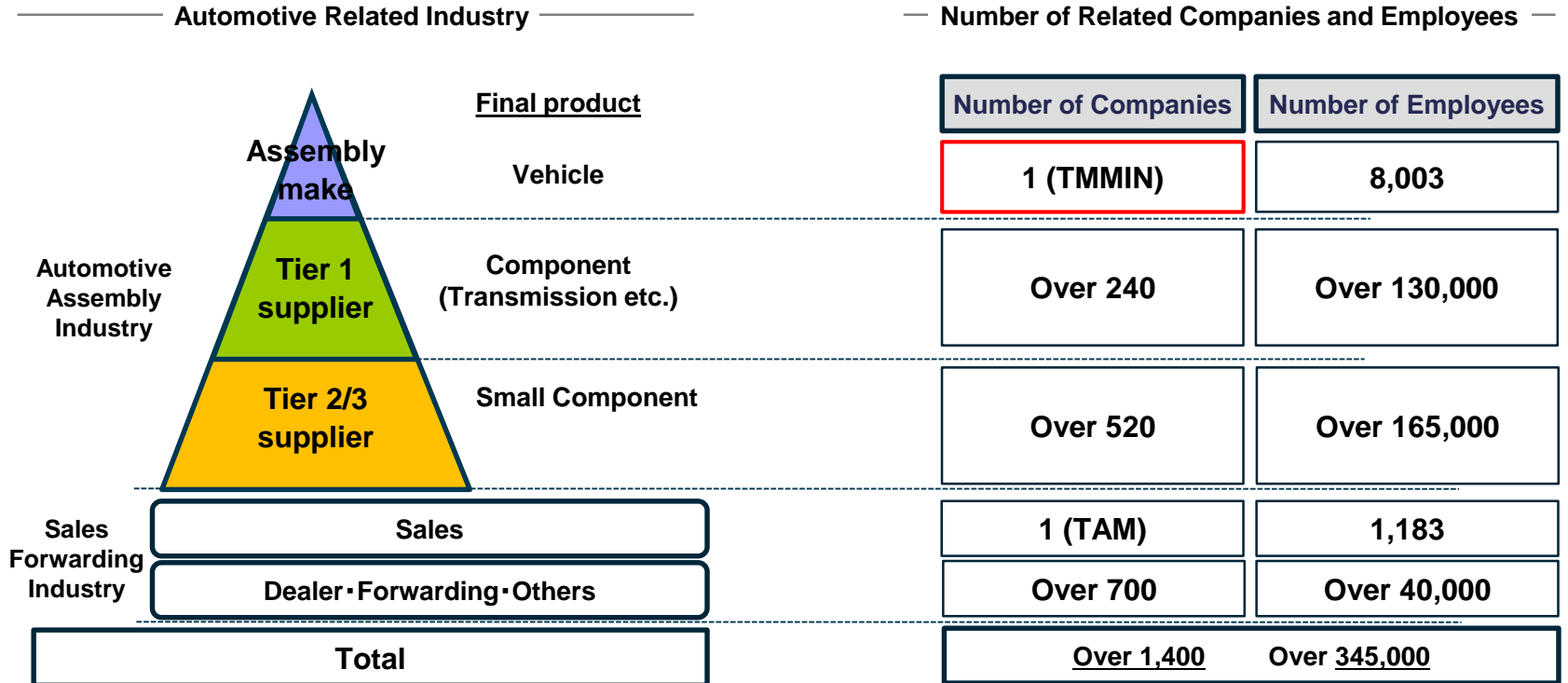
Toyota Indonesia Social Contribution

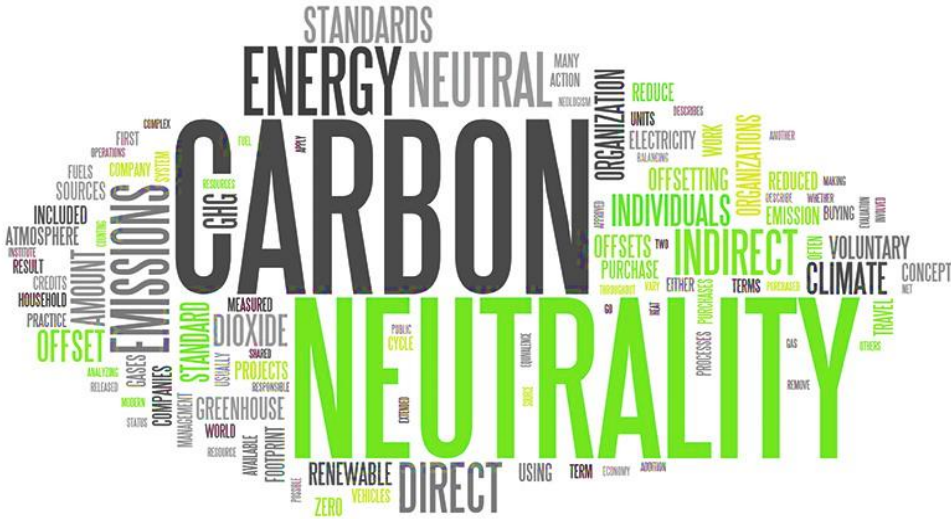

1,640,000 trees planted


85,000 Scholarship

Toyota Group Value Chain

TOYOTA GROUP is working to nurture the automobile industry and peripheral industries in Indonesia and contributes to securing employment of about 300,000 people.





Global & National Environment Concern


Global & National Environment Commitment

Global Commitment and ID Government's Policy of Carbon Neutrality

- Rising CN/NZE movement is influencing Governments and businesses everywhere to take climate action
- These drive Toyota to make effort & contribution for Carbon Neutrality [CN]

Global CN Commitment

“well below 2°C” /
Net zero in 2nd half
century



“Limit to 1.5°C” /
Net zero by 2050

SUSTAINABLE DEVELOPMENT GOALS

Carbon
Neutrality

Toyota Global CN Policy



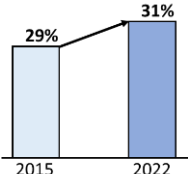
TOYOTA
Akio Toyoda
“...Carbon is
our enemy...”

**TOYOTA ENVIRONMENTAL
CHALLENGE 2050**



ID Govt CN Commitment

NDC target 2030




Revised target from 29% → 31%

Ongoing Initiatives

- Carbon Tax introduction
- Green Industry campaign & initiatives
- Green Energy

Toyota ID- CN Action

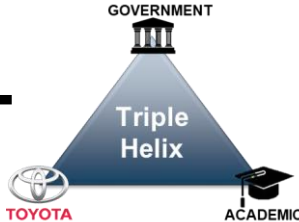
TOYOTA INDONESIA
PT. Toyota Motor Manufacturing Indonesia



TOYOTA ENVIRONMENTAL CHALLENGE 2050

PLUS Net Positive Impact Challenge

TOYOTA ENVIRONMENTAL CHALLENGE 2050 + GOVERNMENT Triple Helix

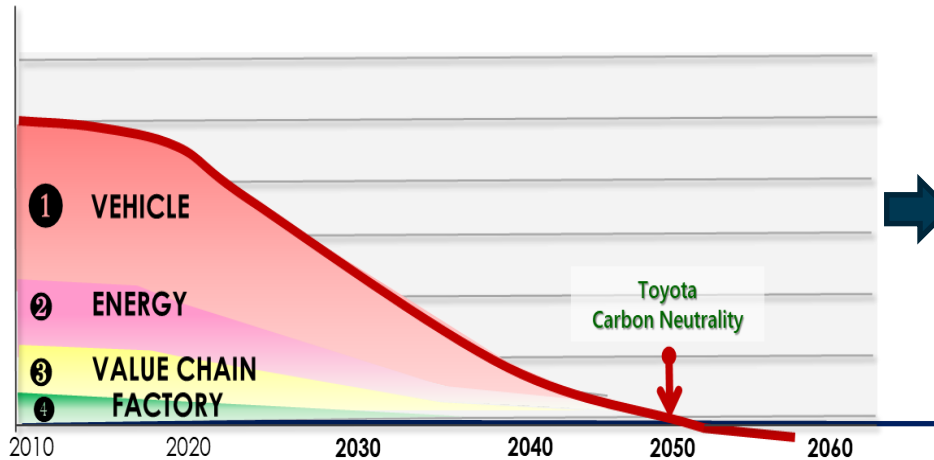


TOYOTA ACADEMIC

Toyota is contributing to achieving the goals and targets of Carbon Neutrality through **Toyota Environmental Challenge 2050**

Toyota Commitment for Carbon Neutrality

TOYOTA CARBON NEUTRAL PAVE

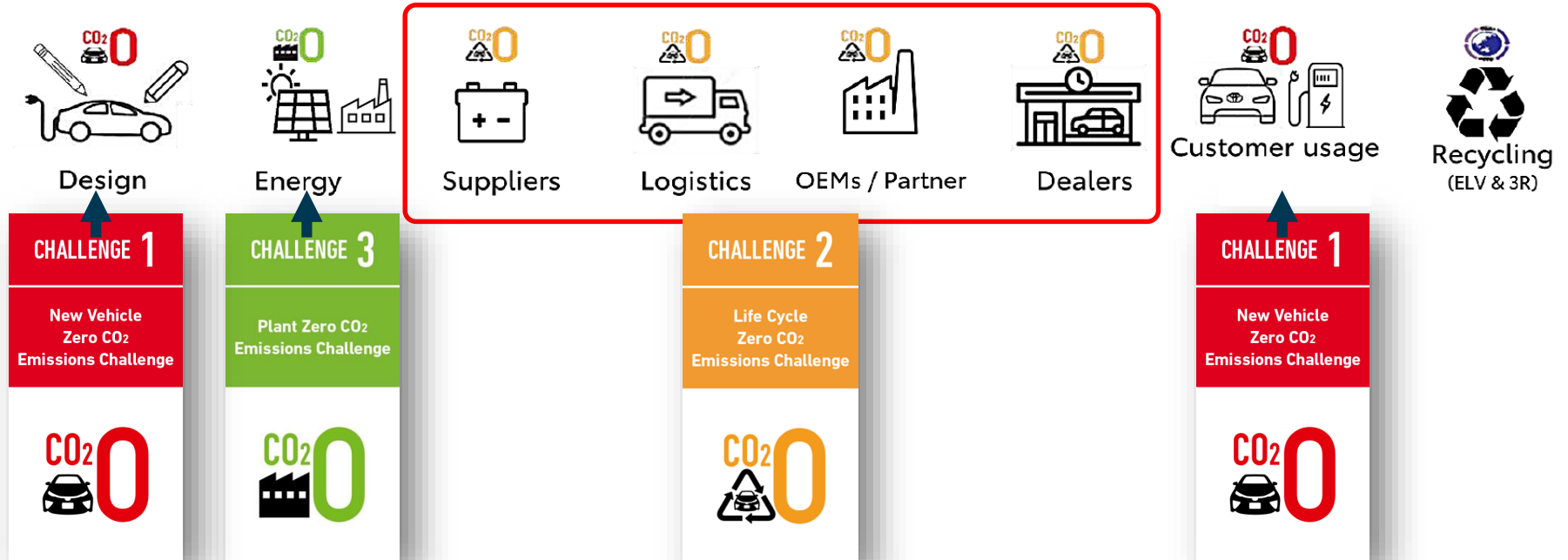


Toyota Environmental Challenge 2050

Achieve Zero CO2 Emissions	CHALLENGE 1 	New Vehicle Zero CO2 Emissions Challenge
	CHALLENGE 2 	Life Cycle Zero CO2 Emissions Challenge
	CHALLENGE 3 	Plant Zero CO2 Emissions Challenge
Net positive Environmental Impact	CHALLENGE 4 	Minimizing & Optimizing Water Usage
	CHALLENGE 5 	Waste Recycling based Society & Systems
	CHALLENGE 6 	Future Society in Harmony with Nature

Toyota Environmental Challenge in Lifecycle Action

Key Action for Carbon Neutrality through value chain





03

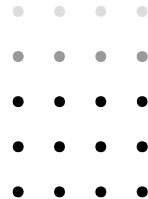
CHALLENGE 1

New Vehicle
Zero CO₂
Emissions Challenge



Toyota ID Initiative & Action

- **Green Product [Challenge -1]**
- Green Supply Chain [Challenge -2]
- Green Manufacturing [Challenge-3]



Toyota's Initiative Toward Carbon Neutrality

Toyota Environmental Challenges

Sustainable Devl Goals

CHALLENGE

1



[Challenge 1] New Vehicle Zero CO2 Emissions Challenge

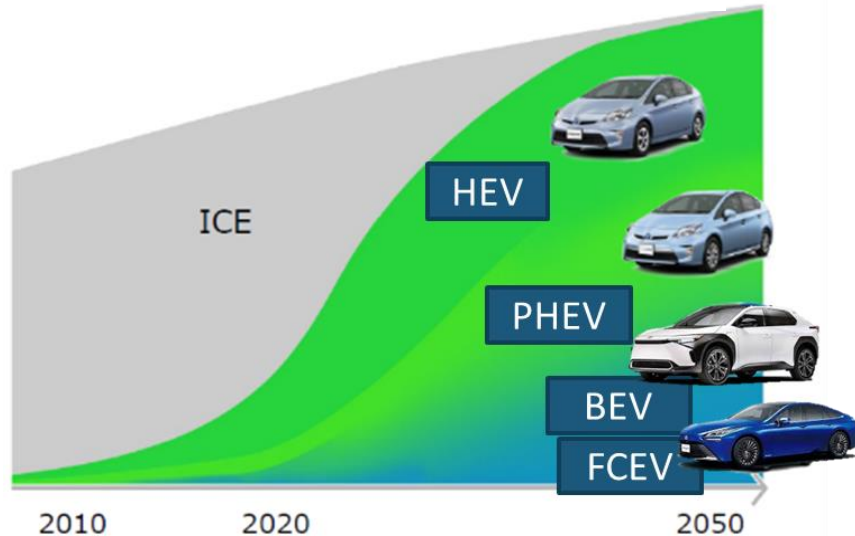
Toyota provide many option of vehicle technology, customer can choose that most suitable for them
→ **No one left behind** to contribute CO2 emission reduction



Mr. Koji Sato – Toyota Motor Corp. CEO

Continue to **pursue a variety of options**, based on a **multi-solutions**, to stay **close to the future of energy** and the condition of each region.

Various powertrains technologies



ICE : Internal Combustion Engine
(or conventional car)

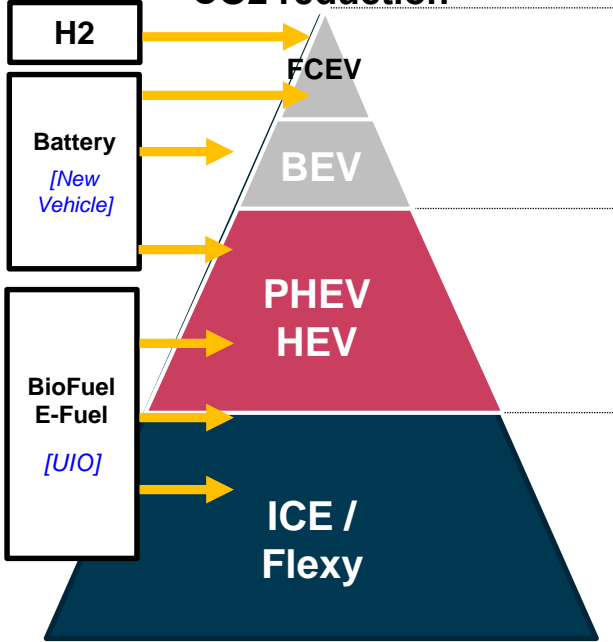
HEV : Hybrid Electric Vehicle
PHEV : Plug-in Hybrid Electric Vehicle
FCEV : Fuel Cell Electric Vehicle
BEV : Battery Electric Vehicle

Toyota ID Approach toward Carbon Neutrality

Toyota ID approach that allows all technology contribute to reduce CO2 emission
 → realistic solution from now that everyone can contribute to reduce CO2 considering segmentation affordability

Technology vs Buyer Affordability

“All xEV Technology contribute CO2 reduction”



Entry Buyer	Low Buyer	Medium Buyer	High ~ Premium Buyer
*FCEV, ID may start utilization of FCEV for public transportation & logistic vehicles			
Segment Expansion			BEV
Segment Expansion			PHEV
Segment Expansion	HEV 		
Eco Car 	Bio-Fuel/Synthetic-Fuel Adoption <ul style="list-style-type: none"> Bio-Diesel (~ B35) & Bio-Ethanol (depend on fuel readiness) Hydrogen (in development stage) 		
Efficiency Improvement 			

Majority market in ID

As a “Frontier” for further electrification

As a “Fuel Saver” to provide wider access to market





03

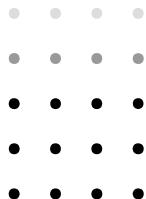
CHALLENGE 2

Life Cycle
Zero CO₂
Emissions Challenge



Toyota ID Initiative & Action

- Green Product [Challenge -1]
- **Green Supply Chain [Challenge -2]**
- Green Manufacturing [Challenge-3]





[Challenge 2] Life Cycle Zero CO2 Emissions Challenge

Toyota Global Policy

Completely Eliminate All CO2 Emissions Throughout the Entire Vehicle Life Cycle



Design



Energy

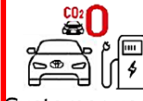


Suppliers

Logistics

OEMs / Partner

Dealers



Customer usage & charging



Recycling (ELV & 3R)

Strategy to reduce CO2 emission :

- ✓ Maximize energy efficiency
- ✓ Low CO2 technology
- ✓ Renewable energy

Toyota ID Action

Suppliers

- 1.Green Purchasing guideline
- 2.Promote CO2 reduction [Energy Efficiency & RE application]



Green Purchasing Guideline

- Acquire ISO 14001
- Eco Friendly Materials
- Reduce CO2 Emission



CO2 Reduction in supplier

- CN Task Force
- CN Education, Kaizen Sharing

Logistic

1. Efficient route, max truck loading
2. Clean energy & special activities [eco driving, biofuel, transport mode, etc]



Efficient route, biofuel, Eco Drive



Parts Logistic

Optimizing Container Space

Dealer

Promote Eco Dealership



ECO Friendly Dealer [Energy efficiency, EMS]



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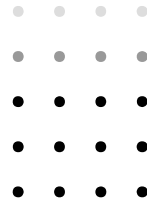
CHALLENGE 3

Plant Zero CO₂ Emissions Challenge



Toyota ID Initiative & Action

- Green Product [Challenge -1]
- Green Supply Chain [Challenge -2]
- **Green Manufacturing [Challenge-3]**

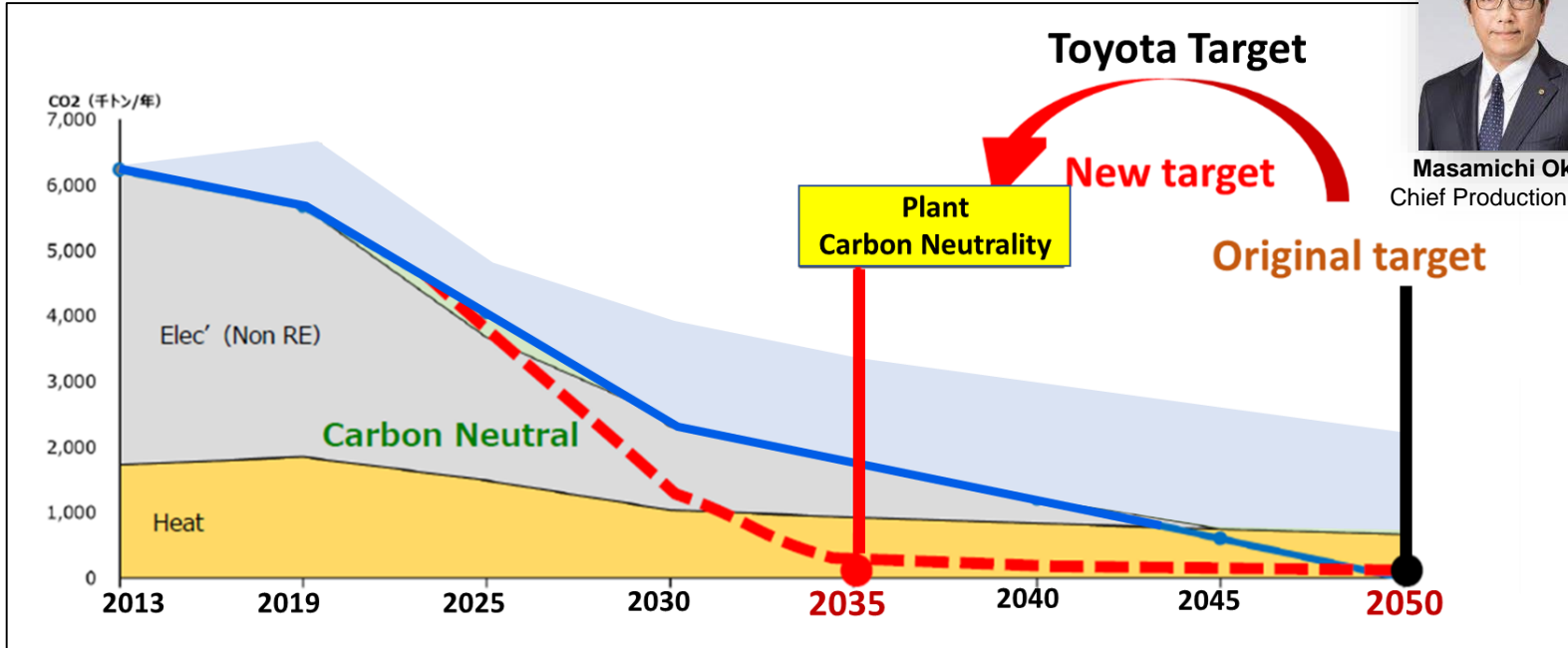




[Challenge 3] Achieve Plant - Zero CO2 Emission

Toyota's Factories aim to achieve Carbon Neutrality earlier 2050 → 2035

Manufacturing Carbon Neutrality Target [Toyota's Factories]



Masamichi Okada,
Chief Production Officer

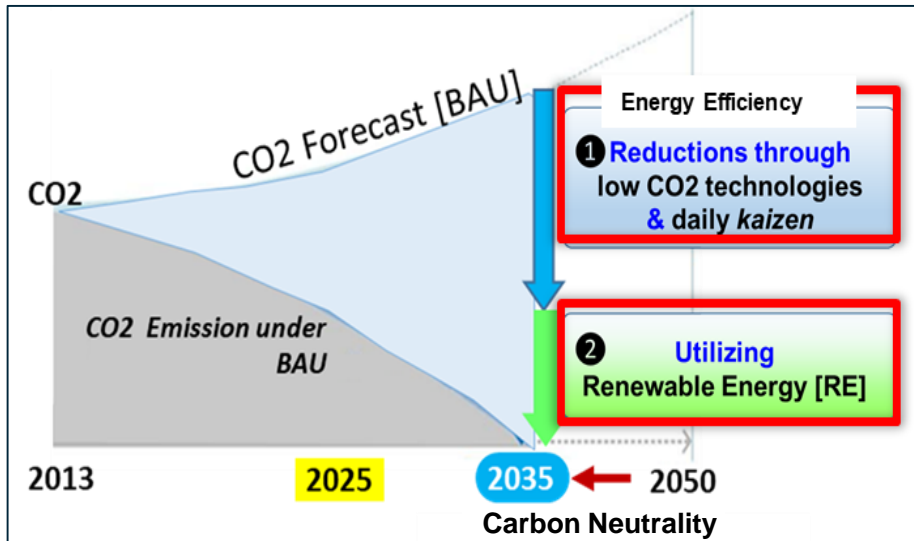
"...manufacturing carbon-neutral 2050→ 2035"



[Challenge 3] Achieve Plant - Zero CO2 Emission

Strategy : Maximize CO2 reduction through **energy efficiency & gradually** switch to renewable energy

Toyota ID Strategy Plant Carbon Neutrality

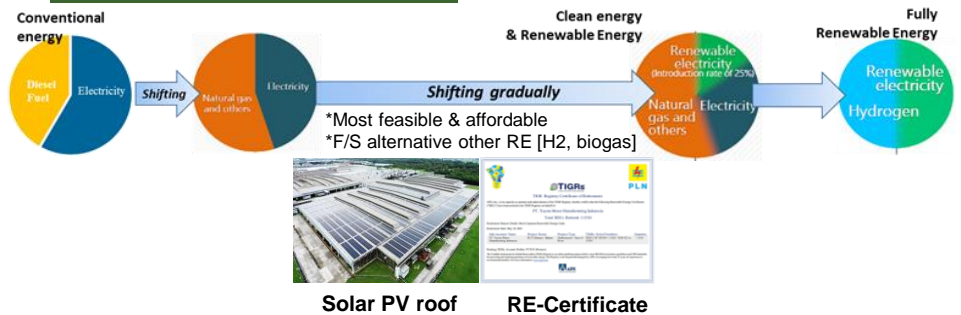


1 Energy Efficiency

- **Maximize daily kaizen [Low cost improvement] :**
 - Reduce energy loss, (ESCO – Energy Saving Collaboration)
 - Reduce MUDA energy
- **Low CO2 Technology equipt [Production & supporting facilities]**
 - High Efficiency & adaptive system equipment



2 Utilizing Renewable Energy



KARAKURI SYSTEM [Unique activity] – Energy Efficiency

TMMIN Karakuri is Less energy movement

Use mechanical equipment device to create movement without external energy (only using natural energy) -Gravity

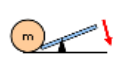
・物の重力
gravity



・ゼンマイ
spring



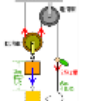
・テコ
lever



・カム
cam



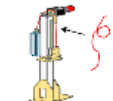
・滑車
Pulley



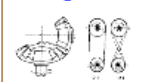
・リンク
Link



・ひも
thread



・歯車 等
and gear etc



Benefit :

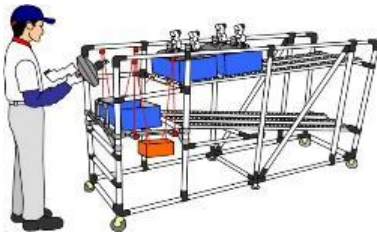
- Low cost – Low investment
- Eco-friendly
- Easy to make & maintain
- Easy to do improvement

Uniqueness:

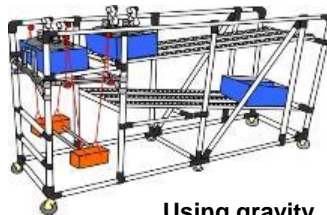
- Simple: one touch & go

No Touch Handling Empty Box

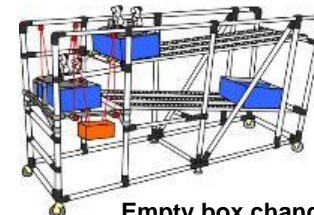
Benefit: Ergonomic, Productivity up



Member taking last part



Using gravity, box automatically exchange



Empty box change to loaded box

Toyota ID Initiative for Green Industry

Toyota **proactive** to response latest situation for sustainable business & society

Basic Compliance

- Env. Management System : ISO 14001 & Toyota G-EMS

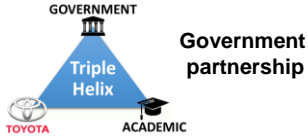


- Chemical Mgmt. : SoC Free
- Emission Policy : EURO 4, REACH
- Promote Global Warming

Preventive Monitoring

Beyond Compliance

- PROPER Green (MoE)
- Green Industry (Mol)
- SDGs
- Carbon Neutral Commitment
- xEV Product & Education



Create Innovation & New RE

Advance Management

- Carbon Policy : Carbon Border EX/IM (CBAM), Carbon Tax
- Achieve Carbon Neutral
- Carbon Credit Scheme
- 100% Renewable Energy
- Automation MFG System
- Prepare EURO 5/6

Proactive Action

GREEN INDUSTRY

+

People Development



~ 2010

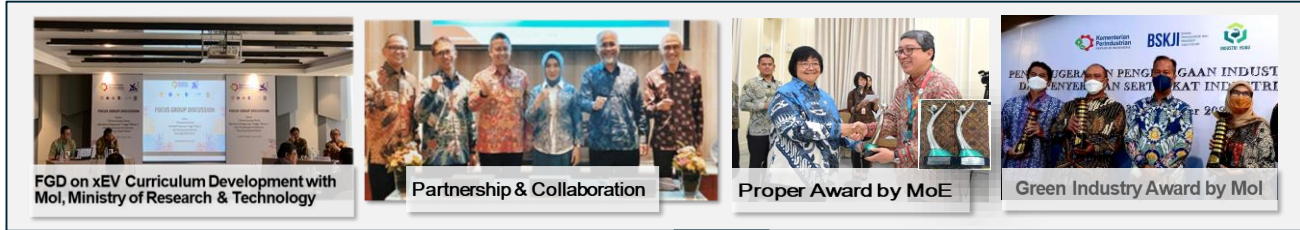
~ 2020

~ 2030

*CBAM : Carbon Border Adjustment Mechanism

People Development

Incorporating the Triple Helix concept into Toyota's people development can **drive our innovation**, **strengthen competitiveness**, and **contribute to sustainable society** to achieve carbon neutrality



GOVERNMENT



Triple Helix



TOYOTA



ACADEMIC

xEV research dissemination with ITB, UI, UGM, UNS, ITS, UNUD



New Biz. Mgt & Future Biz. Driver



xEV center
Education for green mobility



FGD Carbon Neutrality
*Carbon foot print
*Mitigation

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

**Together we contribute to the nation
to build sustainable green mobility
through innovation & breakthrough action**

TOYOTA *Producing Happiness for All*

Thank you !
