



Automotive  
Engineering  
Bureau

DLT

# Thailand's measures related to vehicle safety and environmental protection

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The Public and private joint Forum in Asian Region

30<sup>th</sup> November 2023

# Outline

- 1. Thailand's xEV policy and Recent outcome**
- 2. Introduction to Related Government Agencies**
- 3. Current / Future National Regulations (DLT)**
- 4. Current / Future National Regulations (TISI)**
- 5. Thailand 's vehicle testing facilities**
- 6. ATTRIC**



**Target : 30@30**

30% of car production in Thailand is “xEV” by 2030



## Launch xEV supporting measures

### Supply Side

Investment promotions for production of BEV PHEV HEV and BEV as well as EV Parts and Installing Charging station.



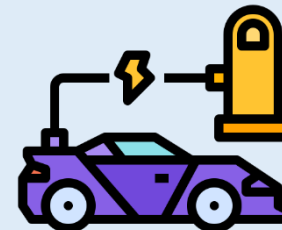
### Infrastructure

- Scrappage & Recycle ecosystem
- Promote & Facilitate Charging Station
- Human Resource Development (HRD) for next generation vehicle
- Standardization for EVs and Testing center

### Demand Side

Tax Incentive

- Import duty
- Excise tax
- Annual tax



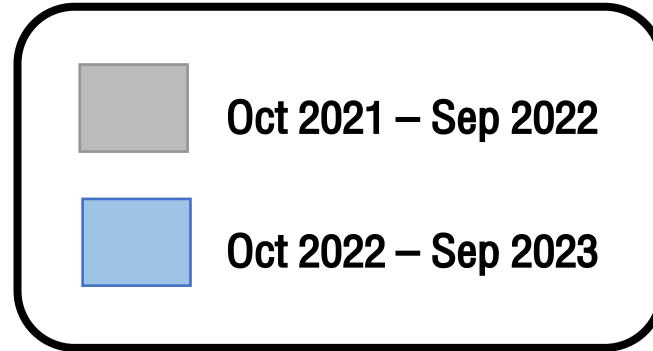
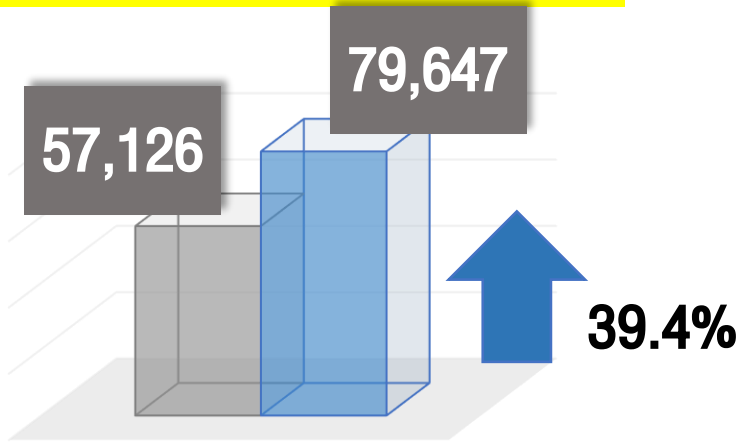
# Recent outcome : xEV Registration in Thailand



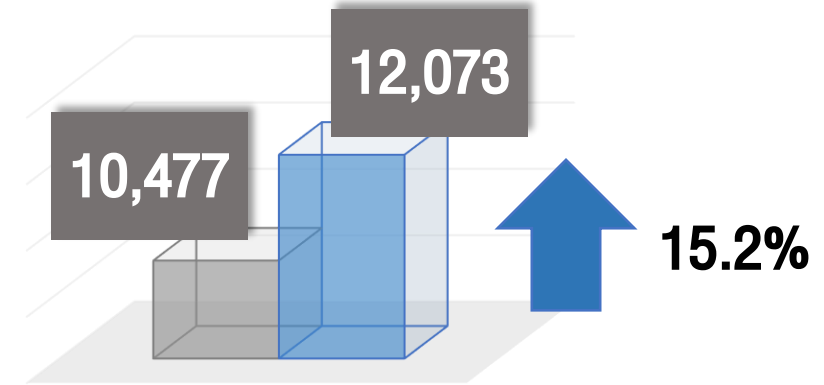
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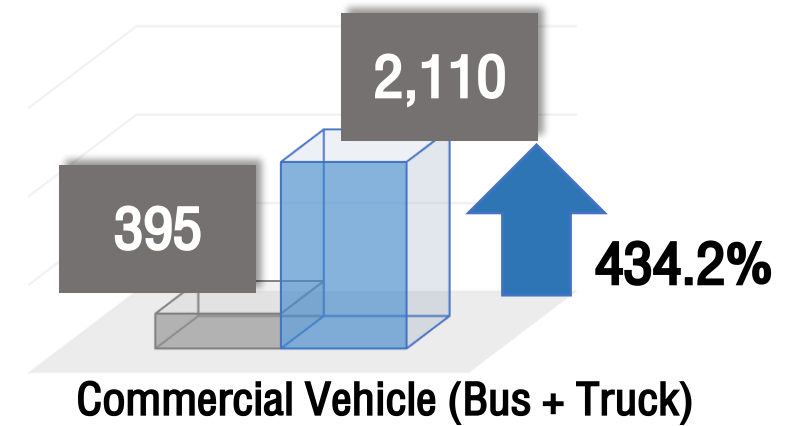
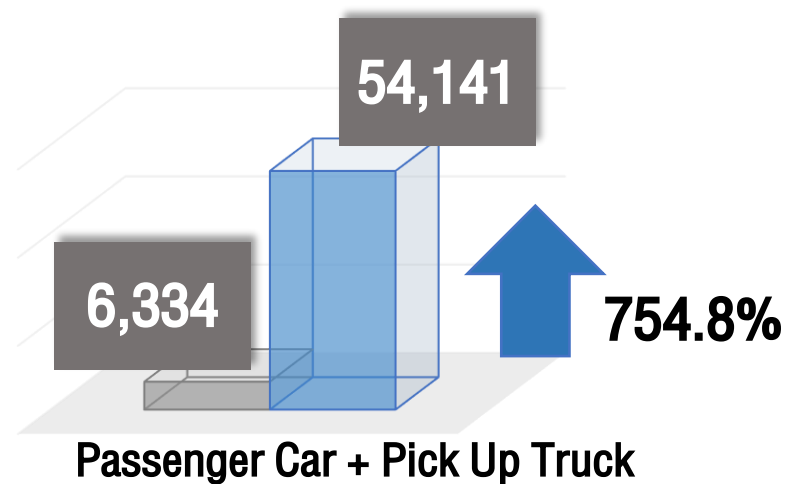
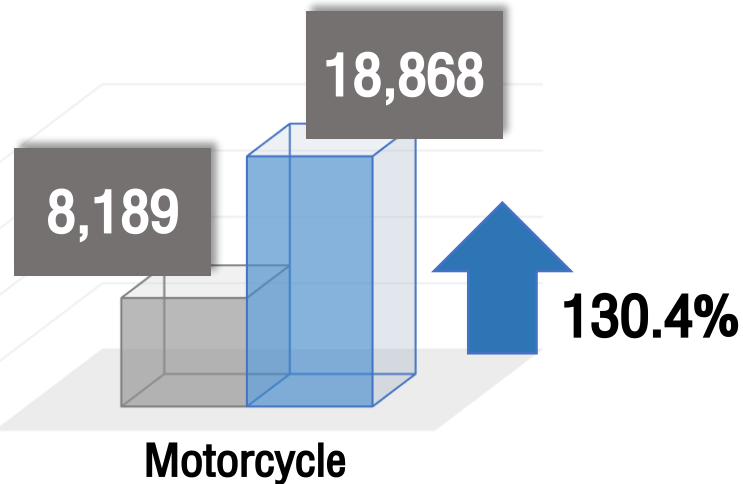
## 1. HEV NEW REGISTERED



## 2. PHEV NEW REGISTERED



## 3. BEV NEW REGISTERED



# Related Government Agencies



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- Responsible for the land transport law, motor vehicle law, Vehicle Registration, etc.
- Vehicle/systems Type approval
- Issue DLT notifications align with UN regulation



- National standards development
- Product certification : Voluntary and mandatory certification mark
- Focusing on automotive parts, EV auto part and emission standard



THAILAND  
AUTOMOTIVE  
INSTITUTE  
สถาบันยานยนต์

- Provide relevant information and direction for government
- Testing service for industrial standards (UN , TISI..)
- Operate The Automotive and Tyre Testing, Research and Innovation Center (ATTRIC)

# DLT's Current National Regulations



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Goal = Internationalization of  
Vehicle Safety Regulations



UN Regulations



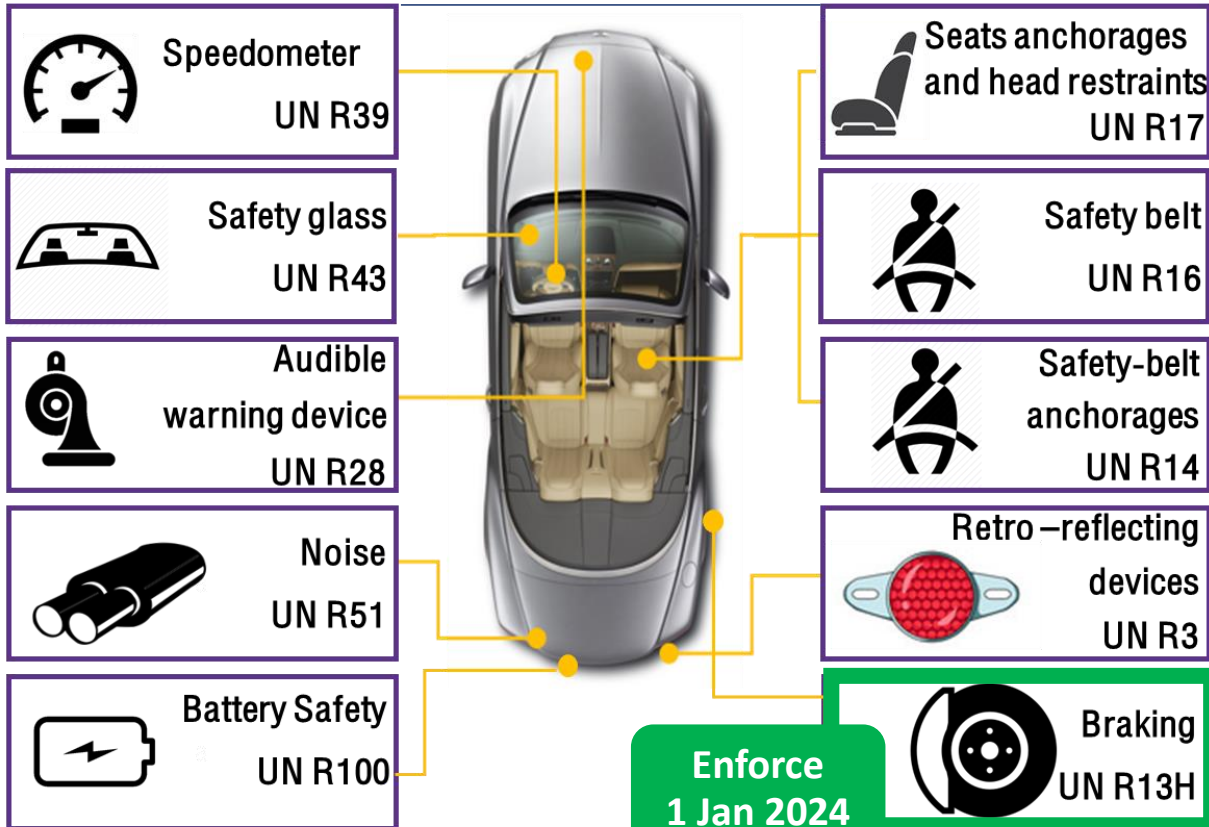
DLT Regulations



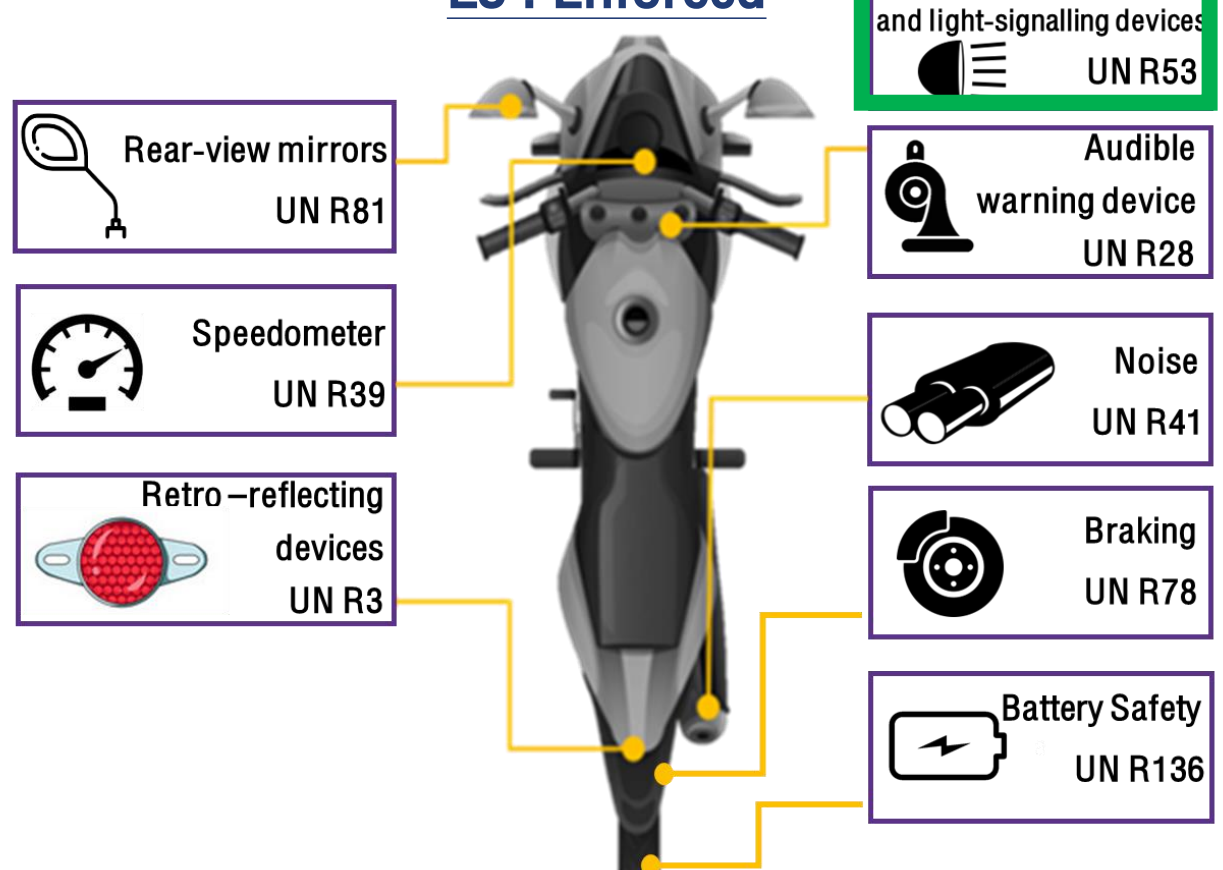
Safer Vehicles

Enforce  
1 Jan 2024

## M1 N1 : Enforced



## L3 : Enforced



# DLT's Current National Regulations (Cont.)



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Safety Regulations  
for Bus



Large Bus Stability Test

Enforce  
1 Jan 2013



Tempered Glass as  
additional Emergency Exit

Enforce  
29 Oct 2014



GPS Installation  
on all Public Buses

Enforce  
25 Jan 2016



Height Restriction of 4.00 m  
for Double Decker Bus

Enforce  
19 Mar 2017



Retro-Reflective Installation  
(UN R104)

Enforce  
1 Jan 2018



Seat Strength, Seat Belt  
Anchorage (UN R14,17, 80)

Enforce  
1 Jan 2020



Burning Behaviour  
of Interior Material  
(UN R118)

Enforce  
1 Jul 2022



Check and Maintenance  
of Vehicle

Enforce  
31 Oct 2022



Strength of Bus Super  
Structure (UN R66)

Enforce  
1 Jan 2023

# DLT's Current National Regulations (Cont.)



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## Safety Regulations for Trucks

Enforce  
29 Oct 2014



Safety glazing

Enforce  
25 Jan 2016



GPS Installation  
on 10W-Truck and Tractor

Enforce  
1 Jan 2018



Retro-Reflective Installation  
(UN R104)

Enforce  
1 Jan 2019



Coupling Device (UN R55)

Enforce  
1 Apr 2020



Twist-Lock for Container  
Carrier

Enforce  
31 Oct 2022



Check and Maintenance  
of Vehicle

Enforce  
1 Jan 2024



Lateral and Rear Underrun  
protective devices RUPD, LPD  
(UN R58, 73)



# DLT's Future Enforcement Plan



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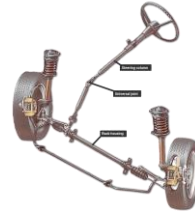
M1, N1



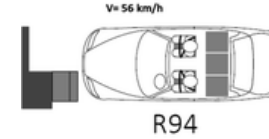
UN R46



UN R48



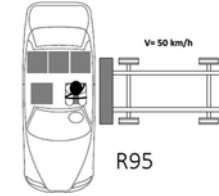
UN R79



V= 56 km/h

R94

UN R94



V= 50 km/h

R95

UN R95



UN R10



L3



UN R60



UN R10



Truck  
& Bus



UN R13



UN R46



UN R100



UN R105

# TISI's Current National Regulations



Enforce  
25 Aug 2001

TIS 341-2543 Motorcycle  
exhaust muffler



Enforce  
26 Feb 2011

TIS 721-2551 Seat Belts  
for Automobiles



Enforce  
26 Aug 2016

TIS 2602-2556 Safety  
glazing materials for  
vehicles



Enforce  
21 Jan 2019

TIS 2718-2560  
Pneumatic tyres for  
motor vehicles



Enforce  
21 Jan 2019

TIS 2719-2560  
Pneumatic tyres for  
commercial vehicles



Enforce  
21 Jan 2019

TIS 2720-2560 Pneumatic  
tyres for motor cycles  
and mopeds



Enforce  
24 Sep 2019

TIS 2721-2560 Rolling  
sound emission adhesion  
on wet surfaces and rolling  
resistance



Enforce  
29 March 2020

TIS 2915-2561  
motorcycles  
(emission Euro 4)



Enforce  
1 June 2021

TIS 683-2562 Inner  
Tubes for motorcycles  
and mopeds



Enforce  
5 May 2022

TIS 2979-2562 Retreaded  
pneumatic tyres for  
commercial vehicles

# TISI's Future Enforcement Plan



- REESS for electric powertrain

Estimate Enforcement : 2024



TIS 3026-2563  
REESS for electric powertrain  
of M, N category (UN R100 part 2)



TIS 2952-2561  
REESS for electric powertrain  
of L category (UN R136 part 2)

- Emission Standard

Estimate Enforcement

GASOLINE

DIESEL



	< 2023	2024	2025	2026	>
		EURO 4		EURO 6 (1 Jan 2025)	
	EURO 3	EURO 5 (1 Jan 2024)		EURO 6 (1 Jan 2026)	
	EURO 4	EURO 5 (1 Jan 2024)		EURO 6 (1 Jan 2026)	
	EURO 3	EURO 5 (1 Jan 2024)		EURO 6 (1 Jan 2026)	

# Thailand's vehicle testing facilities



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## Related to DLT's Regulation



Thailand Automotive  
Institute



Electrical and Electronics  
Institute



Electrical and Electronic  
Products Testing Center

1. Braking system (M1 N1) UN R 13H	▲		
2. Safety-belt anchorages UN R 14	✓ ✓		
3. Safety belt UN R 16	✓ ✓		
4. Seat and headrest UN R17, 25	✓ ✓		
5. Audible Warning UN R 28	✓ Installation	✓ Installation	▲ Installation
6. Speedometer UN R 39.00	✓ ✓	✓	▲

### Obtained ISO/IEC 17025 Accreditation

✓ UN Regulation

✓ DLT's Regulation

▲ Testing Facility

# Thailand 's vehicle testing facilities



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## Related to DLT's Regulation



7. Noise Emission UN R 41.04		Stationary Pass by noise	
8. Safety glass UN R 43.00	Installation		
9. Sound level UN R 51.02		Stationary Pass by noise	
10. Installation of lighting UN R 53.01		Installation	
11. Braking system UN R 78.04			
12. Rear-view Mirrors UN R 81.00	Installation	Installation	
13. Electric vehicles (M1 N1) UN R 100			6.2, 6.3, 6.4, 6.7, 6.8, 6.9
14. Electric vehicles (L3) UN R 136			6.2, 6.3, 6.7, 6.8, 6.9
15. EMC UN R 10			

# ATTRIC : Automotive and Tyre Testing, Research and Innovation Center



- Located in EEC, the Heart of Thailand Automotive Industry .....
- Area : 1,976,000 Square Meters



# Automotive and Tyre Testing, Research and Innovation Center -- ATTRIC



## Test track

- ❶ High Speed\*
- ❷ Dynamic platform
- ❸ Skid Pad
- ❹ Park Brake (Hill Test) [UN R13, R13H]
- ❺ Brake Performance [UN R13, R13H, R78]
- ❻ Tyre and noise test [UN R117, R41, R51]

## Testing laboratory

- ❼ EV Battery testing [UN R100, R136]
- ❽ Tyre and automotive part testing [UN R117 (Tyres), UN R13, R13H (Brake), UN R14, R16, R17, R25 (Seats, Safety belts)]
- ❾ Vehicle crash test building [UN R94, R95]\*
- ❿ Administration building

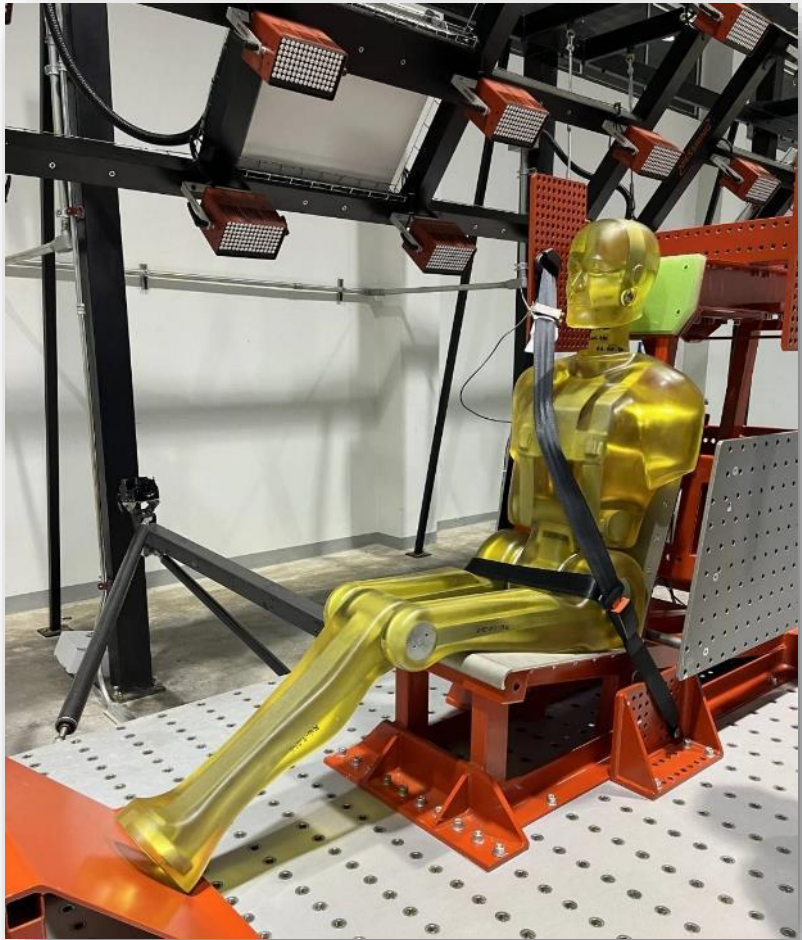
*\*Start construction in 2023 and finish in 2026*



สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม (สมอ.)



# Safety Belt UN R16



- Durability



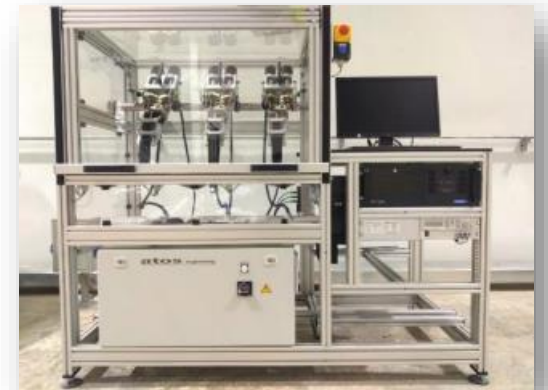
- Buckle and retraction device



- Retraction force
- Lock function



- Corrosion
- Dust
- Weathering, etc.

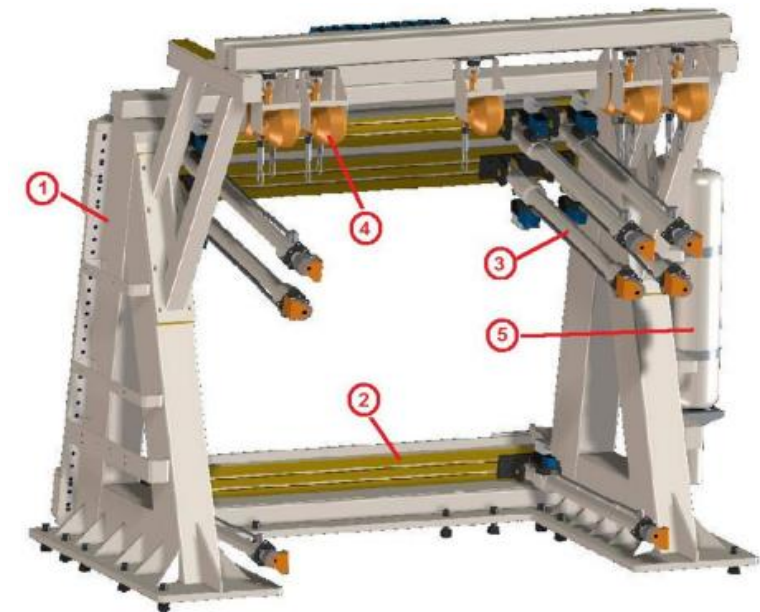


# Equipment for UN R14

## Safety-Belt and ISOFIX Anchorages



Seat Belts Anchorages test system





## Equipment for UN R25

A tester to determine the power dissipation on the headrest



## Equipment for UN R17

Head Impact Test Machine Pendulum (HITM-P)

Backrest strength test

- Position adjustment system
- The performance of the headrest

# Electric Vehicle Battery Testing Center

UN R100 and UN R136



Vibration  
การสั่นสะเทือน



Thermal shock and cycling  
การทนอุณหภูมิ



Mechanical shock  
การเปลี่ยนแปลงความแรงฉับพลัน



Mechanical integrity  
ความแข็งแรงของโครงสร้างชุดแบตเตอรี่



Fire resistance  
การทนไฟ



External short circuit protection  
การลัดวงจร



Overcharge protection  
ระบบป้องกันการชาร์จเกิน



Over-discharge protection  
ระบบป้องกันดิสชาร์จเกิน



Over temperature protection  
ระบบป้องกันอุณหภูมิเกิน



# Tyres and Pass-by Noise Testing



## TESTING SCOPE

UN-R117

UN-R41,51



# Brake Performance

## UN R13 and UN R13H



Dynamometer

# Brake Performance



# Test Hills (Parking Brake)





# Skid Pad

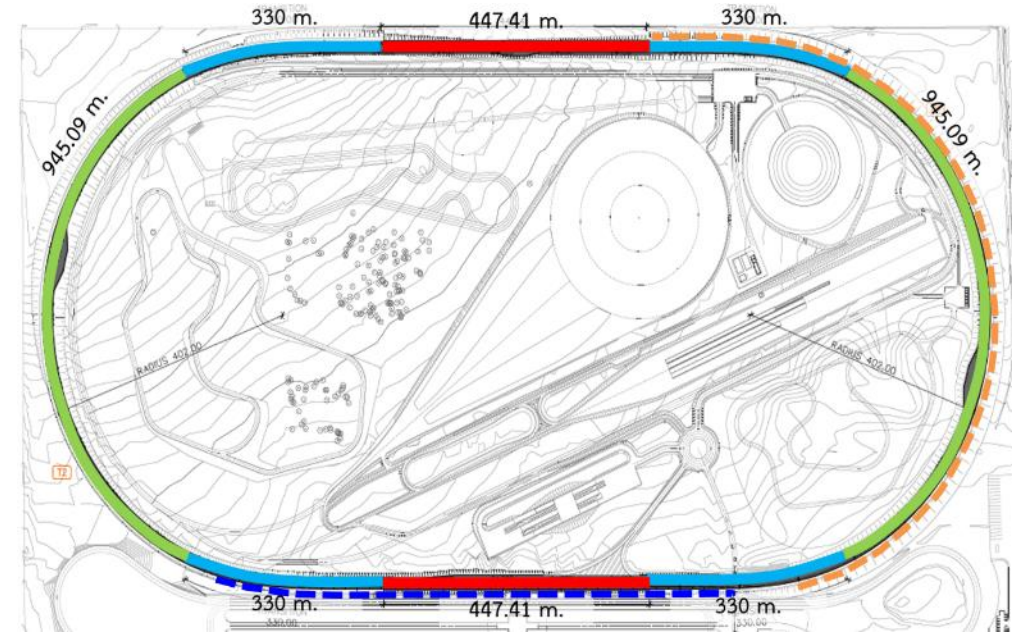


# Dynamic Platform



# Under construction

## ❖ High Speed Test Track (2026)



## ❖ Vehicle Crash Test Building (2026)

**UN R 94**  
**Frontal Impact**







**UN R 95**  
**Lateral Impact**





# Thank you

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