Department of Land Transport

Regulation and operation of Public Transport fleet and Electric Vehicle in Thailand

Regional Meeting on Just Transition to Low Carbon Mobility in Asia and the Pacific
11th August 2022
Strategy for Transport systems

Thailand’s 20-year development strategy for transport systems (2018 - 2037)

Green & Safe Transport

Inclusive Transport

Efficient Transport

Innovation & Management

DLT WAY
3 S Approach

SAFETY & SECURITY

SUSTAINABILITY

SMART TRANSPORT
Goal = Internationalization of Vehicle Safety Regulations

**UN Regulations**
- Safety-belt anchorages (R14)
- Safety belt (R16)
- Seats anchorages and head restraints (R17)
- Reflector (R3)
- Battery Safety (UN R100*)

**DLT Regulations**
- Speedometer (R39)
- Safety glass (R43)
- Audible warning device (R28)
- Noise (R51)

**Safer Vehicles**
- UN R78 (Braking)
- UN R81 (Rear-view mirror)
- UN R41 (Noise)
- UN R136* (Battery Safety)

**Current National Regulations**
- M1 N1: Enforced
  - Speedometer (R39)
  - Safety glass (R43)
  - Audible warning device (R28)
  - Noise (R51)
- L3: Enforced
  - Speedometer (UN R39)
  - Safety-belt anchorages (R14)
  - Safety belt (R16)
  - Seats anchorages and head restraints (R17)
  - Reflector (R3)
  - Battery Safety (UN R100*)

**Enforce 1 Jan 2023**

Department of Land Transport

Bureau of Automotive Engineering
Current National Regulations (Cont.)

Safety Regulations for Bus

- Large Bus Stability Test
  - Enforce 1 Jan 2013

- Seat Strength, Seat Belt Anchorages (UN R14, 17, 80)
  - Enforce 1 Jan 2018

- Tempered Glass as addition Emergency Exit
  - Enforce 29 Oct 2014

- Burning Behaviour of Interior Material (UN R118)
  - Enforce 1 Jul 2022

- Seat Strength, Seat Belt Anchorages (UN R14, 17, 80)
  - Enforce 1 Jan 2018

- Tempered Glass as addition Emergency Exit
  - Enforce 29 Oct 2014

- GPS Installation on all Public Buses
  - Enforce 25 Jan 2016

- Check and Maintenance of Vehicle
  - Enforce 31 Oct 2022

- Strength of Bus Superstructure (UN R66)
  - Enforce 1 Jan 2023

Safety Regulations Under Drafting and Studies

- ABS and Endurance Braking System (UN R13)

- Installation of Indirect Vision for Large Vehicles (UN R46)

- Battery Safety (UN R100)
Safety Regulations for Trucks

- GPS Installation on 10W-Truck and Tractor (Enforce 25 Jan 2016)
- Coupling Device (UN R55) (Enforce 1 Jan 2019)
- Safety glazing (Enforce 29 Oct 2014)
- Twist-Lock for Container Carrier (Enforce 1 Apr 2020)
- Retro-Reflective Installation (UN R104) (Enforce 1 Jan 2018)
- Check and Maintenance of Vehicle (Enforce 31 Oct 2022)

Additional topics:
- Dangerous Goods Vehicle Standard (ADR)
- Installation of Indirect Vision for Large Vehicles (UN R46)
- ABS and Endurance Braking System (UN R13)
- Underrun protective devices RUPD, LPD (UN R58, 73)
- Battery Safety (UN R100)
- Current National Regulations
- Safety Regulations Under Drafting and Studies
### DLT’s EV Subsidy Policies

#### Tax Reductions

**Current**

**EV under Motor Vehicle Act.**
- Annual Vehicle Tax of EV Sedan (Not more than 7 Pass.)
- Base tax on weight of Microbus & Passenger Van.
  - EV 1,000 Baht
  - Decrease by 80% for first year.
  - (1,800 cc, 1,800 kg)

**EV under Land Transport Act.**
- Annual Vehicle Tax of Bus & Truck
- Half the tax of ICE.
  - EV 1,450 Baht
  - Decrease 50% (7,000 kg)

**In Process**

**EV under Motor Vehicle Act.**
- Annual Vehicle Tax
- Decrease by 80% for first year.
  - EV 1,000 Baht
  - (1,800 cc, 1,800 kg)

### Public Transport Measures

**Incentive Measures for EV Public Transport**

- **Revised rule of Fixed Route Transport Operator Consideration**
  - Increased point of Pollution & Environment from 4 to 15 points.

**Fixed Route Electric Bus - Category 1**
(Bangkok and Continuous Route)
- 8 Routes, 112 Units.
- And 77 Routes are currently under consideration, not less than 800 units in 2022.

**Incentive Measures for xEV Taxi**

- The study of extend the life of xEV Taxi
  - ICE Taxi: 9 years
  - HEV Taxi: 10 years
  - BEV Taxi: 12 years
- IEV and HEV Taxi can only use if it passes the rules and procedures of Electric Vehicle Inspection.
### DLT’s EV Subsidy Policies (Cont.)

**Other Measures**

- **Symbol for EV**: Enforce 4 Feb 2021
- **DLT’s EV Subsidy Policies**:
  - **Sort of EV type (HEV / PHEV / BEV)**
  - **DLT database of EV type**: (Since 1 Aug 2020)
  - The data use to analyze EV Industry Trends and Developments.

#### Type of Electric Vehicle

<table>
<thead>
<tr>
<th>Type of Electric Vehicle</th>
<th>Rated Power (kW)</th>
<th>Speed (km/h)</th>
<th>30 min of driving</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorcycle</td>
<td>0.25</td>
<td>45</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Motor tricycle</td>
<td>4</td>
<td>45</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Small Car</td>
<td>4</td>
<td>45</td>
<td>✓</td>
<td>S</td>
</tr>
<tr>
<td>Sedan Van &amp; Pick Up</td>
<td>15</td>
<td>00</td>
<td>✓</td>
<td>E</td>
</tr>
<tr>
<td>Road Roller &amp; Tractor</td>
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#### Symbol for EV: Enforce 4 Feb 2021

- **Motorcycle**
- **Motor tricycle**
- **Small Car**
- **Sedan Van & Pick Up**
- **Road Roller & Tractor**

#### Code for EV Type:

<table>
<thead>
<tr>
<th>Code</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>0</td>
<td>Non Fuel</td>
</tr>
<tr>
<td>1</td>
<td>Gasoline</td>
</tr>
<tr>
<td>2</td>
<td>Diesel</td>
</tr>
<tr>
<td>3</td>
<td>LPG</td>
</tr>
<tr>
<td>4</td>
<td>LPG + Gasoline</td>
</tr>
<tr>
<td>5</td>
<td>LPG + Diesel</td>
</tr>
<tr>
<td>6</td>
<td>Electric</td>
</tr>
<tr>
<td>7</td>
<td>BEV</td>
</tr>
<tr>
<td>8</td>
<td>CNG - Gasoline</td>
</tr>
<tr>
<td>9</td>
<td>CNG - Diesel</td>
</tr>
<tr>
<td>A</td>
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<tr>
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<tr>
<td>C</td>
<td>CNG - LPG</td>
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<td>Gasoline + LPG + CNG</td>
</tr>
<tr>
<td>E</td>
<td>Diesel + LPG + CNG</td>
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#### Code for Fuel Type:

- **H**: LPG + Gasoline - Electric
- **I**: Diesel - Electric
- **J**: LPG - Diesel - Electric
- **K**: CNG - Diesel - Electric
- **L**: CNG - Gasoline - Electric
- **M**: Hydrogen
- **N**: Gasoline - Electric Plug
- **O**: Diesel - Electric Plug
- **P**: LPG - Diesel - Electric Plug
- **Q**: CNG - Diesel - Electric Plug
- **R**: CNG - Gasoline - Electric Plug
- **S**: LPG + Gasoline - Electric Plug
- **T**: LNG
EV Registration Statistics

Number of BEV Registered in Thailand as of 31 July 2022: 20,087 Units

- **Fixed Route Bus**: 126 Units (44%)
- **Non Fixed Route Bus**: 118 Units (42%)
- **Private Bus**: 41 Units (14%)

**Motorcycle**: 11,566 Units

**Sedan (Not more than 7 Pass.)**: 7,561 Units

**Urban Taxi**: 125 Units

**Microbus & Passenger Van**: 5 Units

**Hotel Taxi**: 5 Units

**Total Truck**: 20 Units

**Van & Pick Up**: 51 Units

**Motor tricycle**: 47 Units

**Private Bus**: 41 Units

**Public Motorcycle**: 71 Units

**Non Fixed Route Bus**: 118 Units

**Fixed Route Bus**: 126 Units

**Tuk Tuk**: 351 Units

(Transport Statistics Sub-Division, Planning Division, Department of Land Transport)
The Registration of New EVs

Vehicle Components

Current Vehicle Registration

Vehicle Dimensions

Electric Motor

Power Rating


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Power Ratio of Electric Motor under Land Transport Act.

Power Ratio not less than 5 kW/ton GVW.
The Registration of EV Conversion

**Required Documents**

1. **Vehicle Certification (Design / Stability / Safety / Electric)**
   - Mechanical Engineer, Associate Engineer (in case of consideration not more than 100 kW) certify Design or Conversion / Motor and Battery Installation / Braking System / Suspension System / Powertrain System / Motor and Battery Specification / Gross Vehicle Weight (GVW) / Top Speed / Range / etc.
   - Electrical Engineer, Associate Engineer (in case of consideration for all rating) certify Electrical System (Electrical Circuits and Wiring Diagram)

2. **Electric Motor Power Rating Certification**

3. **30 min of driving Test Report**

4. **Symbol**

   - S
   - e

**Inspection**

- Conversion Checking with Evidence
- Motor and Battery Installation Checking ***
- Other Conversion Checking (Brake Booster / Power steering system / etc.)

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**Vehicle Dimensions**

- Chassis
- Body
- Steering System

**Vehicle Components**

- Chassis
- Body
- Suspension System

**Electric Motor Power Rating**

- Motorcycle: Rated Power ≥ 0.25 kW
  - Speed ≥ 45 km/h

- Sedan: Rated Power ≥ 15kW
  - Van & Pick Up
  - Speed ≥ 90 km/h

- Small Car: Rated Power ≥ 4 kW
  - Speed ≥ 45 km/h

- Motor tricycle: Rated Power ≥ 4 kW
  - Speed ≥ 45 km/h
The study of rules and procedures on Electric Vehicle Inspection

- Ensure electrical safety of users and equipment
- Reduce the accident caused by electrical Failure
- To process the draft of DLT notifications on rules and procedures of Electric Vehicle Inspection

Action
1. Make a rules and procedures of Electric Vehicle Inspection
2. Training for DLT and Private Inspector
3. Prepare the equipment for Electric Vehicle Inspection
   (Ohm Meter, Milliohm Meter, Insulation Tester, Rubber Gloves, Finger Test & Wire Test)
Thank You

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