Energy Efficiency Policies in Transport Sector in Thailand

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Ministry of Energy

Workshop of APEC Supporting the Development and Implementation of Low-Emission Development Strategies (LEDs) in Transport Sector
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Outlines

1. Energy Situation in Thailand
2. Energy Efficiency Plan 2015
3. Energy Efficiency in Transport Sector
Total Energy Consumption in 2016*

- **Transportation**: 19,843 KTOE (37%)
- **Industry**: 19,609 KTOE (37%)
- **Residential**: 7,787 KTOE (14%)
- **Commercial**: 4,167 KTOE (8%)

Total Energy Consumption = 53,587 KTOE

*Jan-Aug*

Source: DEDE
Thailand Integrated Energy Blueprint

Integrating 5 Major National Energy Plans

- Based on the same period through long term approach planning (2015-2036)
- Main Focus on Country’s Competitiveness & Sustainability
Energy Efficiency Plan (2015-2036)

A Target to reduce Energy Intensity by 30% in 2036, compared with that in 2010

- **EI (2010) actual**: 15.28 ktoe/billion baht
- **EI (2013) actual**: 14.93 ktoe/billion baht
- **EI (2030) forecast**: 11.0 ktoe/billion baht
- **EI (2036) forecast**: 10.7 ktoe/billion baht

**Assumption:**
- GDP Growth 3.8%
- Population Growth 0.03%

**Key Data:**
- **Final Energy Consumption (ktoe):**
  - 2010: 70,248
  - 2012: 81,144
  - 2014: 92,040
  - 2016: 102,936
  - 2018: 113,832
  - 2020: 124,728
  - 2022: 135,624
  - 2024: 146,520
  - 2026: 157,416
  - 2028: 168,312
  - 2030: 179,208
  - 2032: 190,104
  - 2034: 201,000
  - 2036: 211,996

- **With EE Plan:***
  - 2028: 131,000
  - 2032: 151,500

- **BAU Case:**
  - 2028: 187,142

- **Saving from the past & recent measures (EI 15.28 → 14.93):**
  - 4,442 ktoe

- **Saving from EEDP:**
  - 51,700 ktoe

- **Electricity: 15%**
  - 7,641 ktoe
  - 89,672 GWh

- **Heat: 85%**
  - 44,059 ktoe
<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Total (ktoe)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE1</td>
<td>Enforcement of ENCON Act 1992 on energy conservation standards for designated factories and buildings</td>
<td>5,156</td>
<td>10%</td>
</tr>
<tr>
<td>EE2</td>
<td>Building Energy Code (BEC) on new buildings</td>
<td>1,166</td>
<td>2.2%</td>
</tr>
<tr>
<td>EE3</td>
<td>Energy Labeling on equipment/appliances (HEPs &amp; MEPs)</td>
<td>4,150</td>
<td>8%</td>
</tr>
<tr>
<td>EE4</td>
<td>Enforcing Energy Efficiency Resource Standard (EERS) for large energy producers and distributors</td>
<td>500</td>
<td>1%</td>
</tr>
<tr>
<td>EE5</td>
<td>Financial Incentives and support for energy performance achievement</td>
<td>9,524</td>
<td>18.4%</td>
</tr>
<tr>
<td>EE6</td>
<td>Promoting and encourage to use LED</td>
<td>991</td>
<td>2%</td>
</tr>
<tr>
<td>EE7</td>
<td>Energy saving measures in transport sector</td>
<td>30,213</td>
<td>58.4%</td>
</tr>
<tr>
<td>EE8</td>
<td>Support the energy efficiency technology research &amp; development</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>EE9</td>
<td>Support the human resource development on energy conservation</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>EE10</td>
<td>Support the public awareness and behavioral change on energy conservation</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>51,700</td>
<td>100%</td>
</tr>
</tbody>
</table>
Energy Efficiency Plan on Transport Sector

Saving Target (2015-2036)

Target 2015-2036 = 30,213 ktoe

Reconstruction the structure on fuel price (diesel) EE7-1
Tax structure for vehicle & Eco sticker EE7-2
Standard and Labeling EE7-3
Logistics and Transportation Management EE7-4
Eco Driving EE7-5
Revolving Fund in Transport Sector EE7-6
EE Subsidies in Transport Sector EE7-7
Public Transport EE7-8
Railway Improvement (Double Track) EE7-9
Pipeline Improvement EE7-10
Electric Vehicles EE7-11

1 tonne of oil equivalent = 7.35 barrel

Fuel Consumption without the EEP
Fuel Consumption with the EEP (EEDP2015 100%)
## EE7 Performance

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Agency</th>
<th>Activities</th>
<th>Target</th>
</tr>
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<tbody>
<tr>
<td>EE7-1 Reconstruction the structure on fuel price (Diesel)</td>
<td>EPPO</td>
<td>Floating Diesel price. Target saving of 9.2 million liters</td>
<td>456</td>
</tr>
</tbody>
</table>
| EE7-2 Tax structure for vehicle & Eco sticker              | OIE and The Excise Department    | • Eco Sticker the rate of CO2 and oil consumption (Start on the January 1st 2016)  
 • Approved 97 company of 2,249 versions Eco Stickers  
 • From that date the CO2 emission has decreased  
 • Sales on the first tenth month of 2016 passenger car: 266,938 cars  
 pick-up truck and others: 350,221 cars  
 • Further information: [www.car.go.th](http://www.car.go.th) | 13,731 |
<p>| EE7-3 Standard and Labeling for tire                      | DEDE and TISI                    | TISI is constructing the driving test circuit and tire testing center, which will be completed in 2018. The study of standard and labeling will be studied after its complete and will be ready by 2020 | 469    |</p>
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| EE7-4 Logistics and Transportation Management | DEDE and FTI    | • Transportation management system demonstration for an efficient logistics management  
  - Train 110 logistics company  
  • Tracking and initiatives to reduce energy consumption in transport sector  
  - Traffic modeling  
  - Create a data base to collect each car mileage | 1,362  |
| EE7-5 Eco Driving                  | DEDE, DLT and FTI | • Eco- driving Training  
  - 4 region total of 400 drivers (2 days training)  
  - Create a network for training centers  
  - In 2018 target 5,000 drivers | 1,491  |
| EE7-6 Revolving Fund in Transport Sector | DEDE and FTI    | Under evaluation for a appropriate approach  
  - ESCO for transport sector | 588    |
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<td>EE7-7 Subsidies in Transport Sector</td>
<td>DEDE and FTI</td>
<td>• In 2016 Encourage to switch to radial tire - Support 200 companies of 500,000 baht each (total of 100 million baht)</td>
<td>1,216</td>
</tr>
<tr>
<td>EE7-8 Public Transport</td>
<td>OTP</td>
<td>• Under construction: Sky train network and Subway train network • Fundamental information about energy saving evaluation</td>
<td>4,823</td>
</tr>
<tr>
<td>EE7-9 Railway Improvement (Double Track)</td>
<td>OTP</td>
<td>• Under construction: Double Track Railway • High-Speed Rail</td>
<td>4,922</td>
</tr>
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### EE7 Performance

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<td>EE7-10 Pipeline Improvement</td>
<td>DOEB</td>
<td>Action plan on transporting oil via pipeline to northern and eastern parts of the country</td>
<td>34</td>
</tr>
<tr>
<td>EE7-11 Electric Vehicles (EV)</td>
<td>EPPO</td>
<td>• Foundation to develop the infrastructure on electric vehicles&lt;br&gt;• Development Plan for EV&lt;br&gt;• Subsidy for 150 electrical charging stations&lt;br&gt;• Encourage tuk tuk to be EV&lt;br&gt;• Purchase of 200 EV buses</td>
<td>1,123</td>
</tr>
</tbody>
</table>
**Structure of Responsible Ministry/Bureau for EE7 Plan**

**Working and Tracking Committee**
- DEDE Director General or DEDE Deputy Director General as a president of the committee
- Representatives from the Energy Efficiency Plan Committee
- Relevant Agencies
- DEDE works as a secretary

**Energy Efficiency Plan on Transportation Committee**
- Deputy Prime Minister as a Chairman
- Minister of Interior
- Minister of Energy
- Minister of Transport
- Minister of Industry
- Minister of Natural Resources and Environment
- Permanent Secretary of Ministry of Finance or Representatives
- Permanent Secretary of Ministry of Energy or Representatives
- Permanent Secretary of Labour or Representatives
- Secretary of Fiscal Policy Office or Representatives
- Director of The office of Transport and Traffic Policy and Planning or Representatives
- Director of The Office of Industrial Economics or Representatives
- Director of The Energy Policy and Planning Office or Representatives
- Representative from The Land Transport Federation of Thailand
- Professional Advisory in Energy Efficiency on Transport Sectors
- DEDE works as a secretary
1. Unstable policies
2. The project fundamental is behind schedule
3. Fluctuate in oil price
4. People understanding on energy efficiency
Thank You

Department of Alternative Energy Development and Efficiency, Ministry of Energy, Thailand

www.dede.go.th