Energy Efficiency Policies for the Southeast Asia Region
Shangri-La Hotel (Java Room)
11-12 December 2013

Regional cooperation on vehicle fuel economy standards

Thanawat Koomsin, Secretary General,
Thai Automotive Industry Association
Brunei
Cambodia
East Timor
Indonesia
Laos
Malaysia
Myanmar
Philippines
Singapore
Thailand
Vietnam

Car Population
YTD OCT ’13
4W = 3.7 Mil
2W = 9.5 Mil

AAF’s report
Energy dissipation in city and highway driving (Image)
Energy dissipation in city and highway driving (Image)

Highway Driving

- Fuel 100%
- Engine 25%
  - Eng. Loss 69%
- Drive Train 20%
  - Drive train loss 5%
- 20%
- Aero dynamic 11%
- Rolling 7%
- Braking 2%

Stand by 4%
Acc. 2%
Regional cooperation on vehicle fuel economy standards

- Vehicles standard by refer to the same international standard (ECE)
- More stringent on Emission standard (Euro Std)
- Consider on CO2 limit (ECE R 101)
- Use MRA (Mutual Recognition Agreement) as tool for common understanding.
Reduce usage of Fossil oil

- Product improvement for more fuel efficiency, Durable Lighter greener and safer.
- More renewable fuel usage such as Ethanol and Biodiesel.
- More alternatives energy such as CNG, Biomass and co – generator.
- Considering for Hybrid vehicles and EV, HEV (Fuel cell).
- More green energy usage i.e. Solar Energy, Hydro, Wind etc.
ENERGY EFFICIENT VEHICLES (EEV)

- Low Fuel Consumption
- Low emissions
- High Efficiency

- EV
- PHEV
- Hybrids
- Fuel Cell

- Monofuel
- Bio-Diesel B5
- Euro 4

- Bio-Diesel B5
- Euro 4

EEV – FUEL EFFICIENCY AND CARBON EMISSION
ACROSS ALL VEHICLE TYPES AND SEGMENTS
CURB WEIGHT
Regional cooperation on vehicle fuel economy standards

- Strengthen the dialogue between the auto-industry, petroleum industry, and the government regarding fuel policy/standard for the Euro 4.

- Maximum blending ratio of FAME up to B7 is acceptable subject for stringent quality control.

- Revised Bio-fuel specifications for Euro 4, and specifications for Euro 5 have been considered by AAF/TC3
<table>
<thead>
<tr>
<th></th>
<th>Euro 4 Emission</th>
<th></th>
<th>Euro 4 Fuels</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>timing</td>
<td>notes</td>
<td>fuel std.</td>
<td>notes</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2017-</td>
<td>planned</td>
<td>no draft yet</td>
<td>planned, 2016 /17-</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2016-</td>
<td>planned</td>
<td>issued</td>
<td>decided, 2015-</td>
</tr>
<tr>
<td>Philippines</td>
<td>2016-</td>
<td>planned</td>
<td>issued</td>
<td>planned, 2015-</td>
</tr>
<tr>
<td>Singapore</td>
<td>2014.04</td>
<td>decided, for gasoline</td>
<td>no fuel std.</td>
<td>gasoline, 2013.10-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Euro 5 diesel, 2013.07-)</td>
</tr>
<tr>
<td>Thailand</td>
<td>2012.11 2012.12</td>
<td>for diesel for gasoline</td>
<td>issued</td>
<td>already in the market</td>
</tr>
<tr>
<td>Vietnam</td>
<td>2017-</td>
<td>planned</td>
<td>no draft yet</td>
<td>planned, 2016-</td>
</tr>
</tbody>
</table>
End of Presentation