The Current Status: Thailand Power System

Country Presentation

8-9 November 2015
Current Thailand ESI Structure

Enhanced Single Buyer (ESB) Model

Generation
- Independent Power Producer: 13,167 MW
- Power Import: 2,404 MW
- Small Power Producer: 4,530 MW
- Vary Small Power Producer: 2,029 MW

Transmission
- EGAT Trans.: 213 substations, 32,527 circuit-km
- System Operator: ring fenced

Distribution
- PEA: 68%
- MEA: 30%

End User
- EGAT Direct Customers: 2%
- End Users
- Industrial Estate

*ERC: Energy Regulatory Commission
Contract Capacity
(by type of power plant)

EGAT System
(34,668 MW)

- Combined cycle 20,839 MW 60.1%
- Thermal 7,538 MW 21.7%
- Renewable 5,867 MW 16.9%

Thailand power system 37,612 MW
- EGAT system 34,668 MW
- SPP Non-Firm (RE, Cogeneration) 915 MW
- VSPP (RE, Cogeneration) 2,029 MW

Remark: Data as of December 2014
Thailand Power System: Energy Generated (by fuel type)

Energy Generated: **182,859 GWh**

Remark: Data as of December 2014
EGAT Monthly Net Peak Generation

June 11, 2015
27,345.8 MW at 2.02 p.m.

May 2013
26,598 MW
Electricity Consumption

Electricity Consumption: 168,620 GWh

Remark: Data as of December 2014
## Alternative Energy Development Plan (AEDP)

<table>
<thead>
<tr>
<th>Type</th>
<th>Solar</th>
<th>Wind</th>
<th>Hydro</th>
<th>MSW</th>
<th>Biogas</th>
<th>Biomass</th>
<th>Energy Crop</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of 2014</td>
<td>1,298.5</td>
<td>224.5</td>
<td>3,048.4</td>
<td>65.7</td>
<td>311.5</td>
<td>2,541.8</td>
<td>-</td>
<td>7,490.4</td>
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<tr>
<td>End of 2036</td>
<td>6,000</td>
<td>3,002</td>
<td>3,282.4</td>
<td>500</td>
<td>600</td>
<td>5,570</td>
<td>680</td>
<td>19,634.4</td>
</tr>
</tbody>
</table>

### MW

- **Solar**
- **Wind**
- **Hydro**
- **MSW**
- **Biogas**
- **Biomass**
- **Energy Crop**

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1. **Total** refers to the sum of all energy types for the respective period.
2. The chart illustrates the growth of energy production from 2015 to 2036, with each year showing the cumulative total for each energy type.
Power Purchase from Neighboring Countries
(Power Cooperation MOU and Electricity Transaction)

**China**
MOU: 3,000 MW
- Interconnection Study

**LAOS**
MOU: 7,000 MW
- Purchase/Sale with EDL (400 MW)
- Purchase from Private Power Projects
  - 5 Projects in Operation (3,087 MW)
  - 4 Projects under Construction (2,334 MW)
- Potential Projects under Studies and Negotiation

**Myanmar**
MOU
- Potential Projects under Studies and Negotiation

**Cambodia**
MOU
- Sale with EDC (80-100 MW)
- Potential Projects under Studies and Negotiation

Potential Projects under Studies and Negotiation

Purchase/Sale with TNB (300 MW)
Principle of Thailand Power Development Plan (PDP2015)

1) Security of Power System
   - To enhance power system security of Thailand in terms of generation, transmission, and distribution
   - To focus on fuel diversification in order to reduce the use of natural gas as the major energy source

2) Economy
   - To generate electricity with reasonable cost for all power consumers, as well as to support long-term country development

3) Ecology
   - To alleviate environmental and social impacts for sustainable development