Thailand-EC Cooperation Facility

Enhancing Institutional Capacities for the Market Development of Decentralised Energy Systems in Thailand

Decentralised Energy
A Local Solution for Global Problems

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World Alliance for Decentralized Energy (WADE)

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What is Decentralized Energy?

Decentralized Energy is the high efficiency production of electricity (and heating/cooling where possible) near the point of use, irrespective of size or technology.

Fuels -- Gas, Wind, Solar, Biomass, Hydro and or coal.
Centralized generation – pros and cons

**Claimed advantages**

- Easier to plan
- Economy of scale
- Low-cost coal = low energy tariff
- Standardisation of equipment

**Flip side**

- Capacity addition always trailing demand
- Long gestation period
- High T&D losses
- Poor efficiency and high carbon footprint
- Peak demand is managed only through load shedding
# Why Cogeneration/Trigeneration

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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<tr>
<td>Energy Cost Savings</td>
<td>Energy costs can be a high proportion of the product cost in many industries. Cogeneration/trigeneration can reduce the energy costs by up to 40%.</td>
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<tr>
<td>Security of Supply</td>
<td>Cogeneration/trigeneration can increase the reliability of power supply. Production processes need to avoid unscheduled shutdown.</td>
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<tr>
<td>Environmental protection</td>
<td>The high overall thermal efficiency of cogeneration/trigeneration minimizes the production of carbon dioxide. Other exhaust emissions can be controlled by the use of low emission combustion technology.</td>
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<tr>
<td>Flexibility of operations</td>
<td>Optimize your operation, dependent on fuel and electricity prices, factory power and heat load.</td>
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Thailand Roadmap:
Looking to the Future
Thailand Status Today

- Natural Gas pipeline expanding
- Energy Planning and Policy Office (EPPO) - concluded that 3300 MW of CHP potential
- VSSP expanded to 10 MW -
  - Fossile fuel fired DE/CHP gen - have primary energy savings of 10 %
  - Net export increased to 10 MW
Challenges to DE/CHP Development

- Gas Pipeline System - Lack of pipeline networks for district cooling
- DE is not included in the planning stages by the Power Development Plan
- No Regulatory Authority to oversee the energy markets
- No Standardization of DE
- Impact of DE on existing network performance
- Net metering and Connection charges
- Incentives and financing
- Co-ordination of DE activities in Thailand
- DE/CHP power sales through open access rules is currently expensive
  - high surcharges, imposition of duplicative transmission charges
Options/Potential

- Improve CHP/DE capacity
  - Create government definition for CHP, track data
  - Perform economy-wide potential study (WADE Study)
  - Create industrial awareness for CHP
- Raise awareness in federal, state and local governments
  - Create special CHP/DC economic zones
- Provide preferential treatment to DE/CHP for arranging transmission via open access
- Explore the benefits and costs of extending feed-in tariffs for DE/CHP
Policy Messages for DE

• Deep emissions cuts are technically achievable
  - We need an energy revolution
• Cooperation with developing nations is essential
• The task is urgent
  - Capital stock turnover is low
  - Technology deployment needs time to deploy
• Start with existing opportunities
  - Governments should identify and pursue all cost-effective DE/CHP today
THANK YOU

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