Mae Moh, Thailand
Units 4–7 replacement project
Ultra-supercritical lignite-fired power plant

The Electricity Generating Authority of Thailand (EGAT) has awarded the Engineering, Procurement and Construction (EPC) contract for the Mae Moh Ultra-supercritical lignite-fired steam power plant to Alstom and its consortium partner, Marubeni Corporation.

This contract aims to replace the existing units 4 to 7 of the Mae Moh power plant, located in the Lampang province, 600 km north of Bangkok, close to the Mae Moh lignite mine.

This Ultra-supercritical lignite-fired steam power plant, the first of its kind in the region, features advanced steam parameters and state-of-the-art Air Quality Control Solutions. This means higher efficiency than the previous units for lower fuel consumption and more than 50% lower pollutant emissions, including a reduction of more than 20% in CO₂ emissions per unit of fuel burned compared to current installations.

**Customer:** Electricity Generating Authority of Thailand (EGAT)

**Electrical output:** 1 × 600 MW (net)

**Steam parameters:** Ultra-supercritical (USC)

**Fuel:** Lignite

**Scope:** Complete EPC power block

**Application:** Power generation

**ALSTOM’S SCOPE**

Engineering, procurement and commissioning of:
- Boiler island including two-pass, USC, once-through pulverised lignite boiler
- Turbine hall including STF60 steam turbine and GIGATOP 2-pole turbogenerator
- SCR, WFGD and ESP Environmental Control Solutions

The project will be executed in consortium with Marubeni Corporation, Alstom being responsible for the overall project management and general design of the power block as well as its commissioning.

**CUSTOMER BENEFITS**

- High output, 1×600 MW
- NOₓ, SOₓ and particulate matter emission better than the most stringent world standards
GOING ULTRA-SUPERCritical
The replacement unit will be the first at Mae Moh to benefit from leading Alstom Ultra-supercritical technology. Higher steam parameters, which allow producing higher electrical output while burning less lignite, will enable EGAT to continue generating power from its local lignite fuel, in a more reliable way and with a significant reduction of the environmental impact.

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power output</td>
<td>1 × 600 MW (net)</td>
</tr>
<tr>
<td>Turbine speed</td>
<td>3,000 rpm</td>
</tr>
<tr>
<td>Main steam pressure (HP turbine inlet)</td>
<td>275 bar</td>
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<tr>
<td>Main steam temperature (HP turbine inlet)</td>
<td>600 °C</td>
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<tr>
<td>Reheat steam temperature (IP turbine inlet)</td>
<td>610 °C</td>
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</tbody>
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PROVEN EXPERTISE
Alstom has more than 100 years of experience in the Engineering, Procurement and Construction (EPC) of new power plants. With operations in 70 countries, Alstom Power is close to its customers all over the world, ensuring rapid responses and service excellence at all times.

CLEAN POWER CLEAR SOLUTIONS™
LOWERING ENVIRONMENTAL FOOTPRINT

>98% SO\textsubscript{x} removal efficiency (\textit{at} BMCR)*

>99.9% particulate matter removal efficiency*

>20% CO\textsubscript{2} reduction
Reduction of more than 20% in CO\textsubscript{2} emissions per unit of fuel burned compared to current installations**

For more information please contact Alstom Power:
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Alstom originally supplied Mae Moh’s first 13 boilers. This demonstrates Alstom’s combustion expertise for difficult lignite fuels and position as leading supplier in the region.

* Guaranteed values when firing contractual lignite
** Savings calculated based on Net Plant Heat Rate (HHV) data of existing units 4–7 (as per FS) vs. the replacement unit (AMC guarantee) at 100% load, TMCR and burning contractual lignite