Excellence in thermal power
Erbil Power Plant, Phase I+II, 1000 MW GTPP

Reference fact sheet

The customer
ABB’s partner and customer is Mass Group Holding (MGH), a locally based multi-industry company that produces electricity, cement, steel and fertilizer. MGH is a private investor acting in close cooperation with the autonomous Kurdish Government regarding the fuel and electricity power purchase agreements. MGH is the company that has contributed perhaps more than any other to the improvement in power supply and it is also known to be the first independent power producer (IPP) in Iraqi Kurdistan.

The task
Iraq’s need for electrical energy is huge. The country currently generates around 8,500 MW but requires around 20,000 MW of electricity to meet the daily demand.
The main goal and task was to reach a fast track approach to get the project synchronized to the electrical grid helping to overcome the shortage on electricity supply to the suffering people of Iraq. Erbil Phase I was the very first power plant with an IPP and a new business concept. Further challenges were the project set up and teaming up with the Gas turbine OEM, the customer team and the unknown security situation on site.

The solution
Above all, a key factor in the successful project execution is the teaming up of the three partners (MGH, GE and ABB). As the project is being implemented with a minimum number of contractual partners, the number of interfaces is substantially reduced and there is much less coordination work required in terms of project management, engineering and jobsite activities. This approach helps to assure a higher project quality and cut the overall project execution time. In close cooperation with General Electric, the gas turbine supplier, ABB has been able to contribute its special expertise as a field-experienced system integrator.
The customer answered in an interview asked for the benefits and value add of this approach: "... time, money and a modular approach. Our relationship now extends to the highest level of management in both companies – that is itself a benefit. We take a ‘one-team-approach’ when tackling a problem, which saves us a lot of money and makes life easier for ABB and GE. As a result of these project, both ABB and GE are now well-known to the Kurdistan government and renowned for their supplier reliability."
Scope of supply and services

Key figures

<table>
<thead>
<tr>
<th>Site</th>
<th>Erbil, Northern Iraq</th>
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</thead>
<tbody>
<tr>
<td>Type of power plant</td>
<td>1000 MW GTTP</td>
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<tr>
<td>Gas turbines</td>
<td>General Electric Frame 9E, each unit 125 MW (ISO)</td>
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<tr>
<td>Completion Phase I</td>
<td>500 MW in 2008 (4 units)</td>
</tr>
<tr>
<td>Completion Phase II</td>
<td>500 MW in 2011 (4 units)</td>
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</tbody>
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Supply

Automation system
- Central Control Room equipment incl. Human System Interface
- DCS-Equipment incl. control system
- RTU, telecontrol transmission station
- Camera monitoring system

Electrical systems
- 132 kV high voltage substation
- Generator step up transformers
- Unit auxiliary transformers
- Generator bus ducts
- Medium- and low voltage switchgears
- DC power supply incl. batteries and UPS
- Generator- and unit protection systems
- Emergency diesel generators
- Earthing systems
- Lightning protection system
- Plant illumination system

Mechanical Systems
- Liquid fuel oil systems incl. tankfarm
- Fuel gas systems
- Fire detection system incl. electronic devices
- Fire protection and fire fighting systems
- Water system incl. water tanks

Services

Engineering
- Complete plant design, general layout, construction and infrastructure design
- Automation and DCS design
- Arrangement design
- Electrical engineering
- Mechanical engineering

Project Management
- Professional handling of the multiple challenging tasks supported by comprehensive overall engineering and time scheduling by certified project managers
- Quality control
- Factory acceptance tests
- Purchasing and logistics

Site Management
- Extremely rapid erection and commissioning with the following key elements
- Carefully optimized parallel work in civil, mechanical and electrical areas
- Strong ABB HSE and security standards
- Experienced team of supervisors and commissioning engineers with close cooperation as partners together with all involved contractors

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