PT. Lestari Banten Energy
Banten IPP 1x670 MW
Coal-Fired Power Plant

China Export Model
The cost difference between Chinese versus non-Chinese manufactured equipment can make a significant difference in decisions involving the overall budget of an infrastructure project. Any equipment provider must be able to demonstrate experience with Engineering, Procurement, and Construction (EPC) contractor work processes, codes and standards, project execution, and performance expectations. While quality must be a consideration with a Chinese equipped and/or constructed project, Chinese companies can deliver international standard quality equipment when paired with the proper expertise and oversight from the Project Management & Control (PM&C) contractor and the owner.

**China Export Model Solution**

Defined by Black & Veatch as the exportation of Chinese manufactured major and balance of power plant equipment, the Chinese Export Model (CEM) is most successful with an established system of quality processes and best practices. The model typically includes equipment sized and designed by a Chinese Design Institute, and supplied and managed by a Chinese EPC contractor. Utilizing Black & Veatch’s Project Management and Control (PM&C) services provides the technical basis and industry knowledge to drive success and ensure delivery that meets performance and quality expectations.

**Why Choose Black & Veatch?**

*We start with the end in mind*

- Extensive work in all aspects of EPC, both in China and around the world.
- Complete staff of project engineers, procurement professionals, and QA/QC professionals utilizing their depth of knowledge, specific to managing Chinese EPC contractors and suppliers.
- Unique understanding of international and Chinese codes and standards, with special attention to application of Chinese contracting methods.
- Fully-developed protocols for evaluating and ranking suppliers based on company capabilities, past performance, and depth of experience.
- Exclusive experience with design review, project management, quality control, and site management.
- Well-developed risk analysis tools to identify potential issues and implement proactive mitigation solutions.
- Expertise in early development of international projects, including financing and proposal advisory services.

**Key Capabilities**

- EPC Contractor Selection, Ownership and Financing
- Communication
- Equipment Sourcing and Inspection
- Design Review
- EPC Contractor Project Management:
  - Payment Review/Approval
  - Schedule
  - Quality Assurance/Quality Control
  - Health and Safety
  - Construction Supervision
  - Commissioning Management
With over one million man-hours of work in the CEM arena, Black & Veatch has performed key roles with winning results for a wide variety of clients.

**CEM Project Highlights Since 2010**

- **1M+** Man Hours
- **16** Countries
- **32,000+** Total MW

**Benefits**

- **Leverage more than 30 years of direct work with Chinese designers, engineers, contractors, and developers.** Longstanding, valuable relationships drive deep understanding of Chinese engineering and contracting, both in-country and on a global scale.

- **Utilize technical advisory expertise spanning over 100 CEM projects.** From technology and site assessment to design, and permitting to development cost estimates, our partnership will start at our lessons learned and result in timely and cost-effective decisions.

- **Mitigate risk for optimized return on investment.** Hands-on, comprehensive understanding of the CEM process, potential issues, and key milestones allows us to create a risk strategy at project outset.

- **Gain specialized insight from industry-leading consultants.** Long-term and highly-regarded relationships with asset owners, global developers, and financial institutions help to guide financing, create partnerships, and assist with mergers and acquisitions.

- **Partner with an experienced Owner’s Engineer.** With successful completion of more than 40 projects outside of China, our OE efforts result in reliable, cost-effective, and technically compliant power generation assets.

**Recent Featured Projects**

**Hassyan Power Plant**
- **Location:** United Arab Emirates
- **Type:** 4x660 MW Ultra Supercritical Coal Fired
- **B&V Scope:** Engineering and PM&C

**Sohar**
- **Location:** Oman
- **Type:** 1700 MW Combined Cycle
- **B&V Scope:** Owner’s Engineer

**Ibri**
- **Location:** Oman
- **Type:** 1450 MW Combined Cycle
- **B&V Scope:** Owner’s Engineer

**GNPower Dinginin**
- **Location:** Philippines
- **Type:** 2x660 MW Ultra Supercritical
- **B&V Scope:** Technical Advisor and Owner’s Engineer

**Banten IPP**
- **Location:** Indonesia
- **Type:** 670 MW Supercritical Coal Fired
- **B&V Scope:** Owner’s Engineer

**Pampa Sul Power Plant**
- **Location:** Brazil
- **Type:** 345 MW CFB Coal Fired
- **B&V Scope:** Owner’s Engineer
## Key Project Experience

A comprehensive listing of our CEM project experience (more than 100 projects) is available upon request. The following listing features major projects since 2010.

<table>
<thead>
<tr>
<th>Project</th>
<th>Owner</th>
<th>Location</th>
<th>Capacity</th>
<th>B&amp;V Scope</th>
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<tbody>
<tr>
<td>Hassyan Power Plant</td>
<td>Dewa</td>
<td>UAE</td>
<td>4x660 MW, SC</td>
<td>Engineering and PM&amp;C</td>
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<tr>
<td>Hambantota CCPP and LNG</td>
<td>CMEC</td>
<td>Sri Lanka</td>
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<td>Ibri</td>
<td>Acwa &amp; Mitsui</td>
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<tr>
<td>Sohar</td>
<td>Acwa &amp; Mitsui</td>
<td>Oman</td>
<td>1700 MW, CC</td>
<td>Owner’s Engineer</td>
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<td>Shenergy</td>
<td>Vietnam</td>
<td>2x1000 MW, USC</td>
<td>Technical Advisor</td>
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<tr>
<td>Malta Retrofit</td>
<td>Enemalta Corporation</td>
<td>Malta</td>
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<tr>
<td>GNPower Dinginin</td>
<td>GNPD</td>
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<td>Pampa Sul</td>
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<td>Banten, Jawa, Indonesia</td>
<td>2x1000 MW, USC</td>
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<td>Salalah 2</td>
<td>Acwa &amp; Mitsui</td>
<td>Oman</td>
<td>447 MW, CC</td>
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<td>Dewan Wind Farm</td>
<td>Jhimpir Power</td>
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<td>Panchorakan Susu</td>
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<td>2x200 MW, PC</td>
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<td>Bengkulu IPP</td>
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<td>Tavan Tolgoi, Mongolia</td>
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<td>Owner’s Engineer, Phase I</td>
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<tr>
<td>Yildirim Energy Power Plant</td>
<td>Yildirim Energia</td>
<td>Canakkale, Turkey</td>
<td>2x800 MW, USC</td>
<td>Technical Advisor</td>
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<td>Soma Kolin</td>
<td>Soma</td>
<td>Kolin, Turkey</td>
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<td>Technical Advisor, Phase II</td>
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<tr>
<td>Kauswagon Power Plant</td>
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<td>Mindanao, Philippines</td>
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<td>Pontianak Parit Baru</td>
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<td>Banten</td>
<td>Genting Energy</td>
<td>Java, Indonesia</td>
<td>1x670 MW, PC</td>
<td>Owner’s Engineer</td>
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<td>Rabigh</td>
<td>Acwa/KEPCO</td>
<td>Saudi Arabia</td>
<td>2x660 MW Heavy Oil-fired</td>
<td>Owner’s Engineer</td>
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<tr>
<td>Salalah</td>
<td>Sembcorp</td>
<td>Oman</td>
<td>400 MW, CC</td>
<td>Owner’s Engineer</td>
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<td>Banjarsari Power Plant</td>
<td>Pt. Bukit ASAM</td>
<td>Sumatra, Indonesia</td>
<td>2x135 MW, CFB</td>
<td>Owner’s Engineer</td>
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<td>Paiton Power Plant</td>
<td>PLN</td>
<td>Java, Indonesia</td>
<td>1x660 MW, PC</td>
<td>Owner’s Engineer</td>
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<td>Guddu Power Plant</td>
<td>CPHCL</td>
<td>Pakistan</td>
<td>700 MW, CC</td>
<td>Engineering &amp; Design Review</td>
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</table>

Suqing Wang | Vice President, CEM Global Director
3F Tower C/Building, No. 6
Ronsin Technology Center
No. 34 Chuangyuan Road
Chaoyang District
Beijing
100032, P.R. China
P +86 10 5816-5705 | M +86 13911136730
E WangS2@bv.com