

# ENGINEERING AND CAPITAL GOODS



*Visit to the boiler heartland of India*

We recently visited various boiler ancillary companies at Tiruchirapalli in Tamil Nadu, most of them largely sub-contractors of BHEL, to understand their preparedness to cater to increased BHEL demand. We also attended the India Boilers 2010 Conference in Chennai. This report presents key highlights of our interaction with the boiler entities and also of the conference:

## ■ 'Away centre fabrication' straining vendors' working capital

BHEL usually supplies material to its fabricators/machinists in Tiruchirapalli at their factories. For jobs outside Tiruchirapalli, however, the company follows the away centre fabrication (ACF, introduced by BHEL two years ago) model. Here, the sub-contractor procures material from BHEL's preferred vendors and does the job work. This process generally brings working capital under significant pressure, which, in turn, strains cash flow of vendors, as BHEL generally does not give any advance for this.

## ■ BHEL's focus shifting from tonnage to sequential dispatch

To improve its execution timeline, BHEL has been emphasizing on sequential dispatch from vendors. This could lead to a substantial saving in overall project execution time (possible saving of 2-3 months) and also contribute to better site erections.

## ■ BHEL added 100 sub-contractors in past one year at Tiruchirapalli

BHEL currently has ~440 vendors at Tiruchirapalli versus 346 last year, of which, more than 60 are in critical pressure parts, while the balance include small and large fabricators and machining entities. While pressure parts sub-contractors are adequate in number, addition to the non-pressure parts vendor base is still on. As far as total employee base of 440 vendors is concerned, almost 16,000 people are employed, which is expected to rise to 21,000 in the next 1-2 years.

## ■ Increased tonnage from Tiruchirapalli

Total tonnage capacity for the Tiruchirapalli vendor base has increased 35% plus in the past 1.5 years to 38,000 tonnes per month, which we believe should take care of increased volumes from BHEL for boiler and boiler ancillaries. As we understand, job work from BHEL for boiler parts (both pressure and non-pressure), fabrication etc., is on an uptrend, with an average increase of 25-35% expected in volumes in FY11 and FY12.

## ■ Outlook: Execution to improve

BHEL's strong vendor base at Tiruchirapalli for boilers, we believe, will continue to support increased execution requirement from the company, given an increase in overall vendor base and vendor capability in the past one to two years. Some addition in fabrication/machining capacities is still needed, which is expected to be addressed in the near term. We also believe, BHEL will have to address issues like vendor financing and other business terms, to further boost vendor motivation to execute jobs on time and as per quality, which, to us, appears achievable. While we returned positive regarding the company's overall execution capability going forward, we strongly believe, new order pipeline for BHEL will remain its key focus going forward, as more players join the boiler manufacturing.

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- **Elongated payment cycle to sub-contractors**

We tried to understand the business terms that BHEL's sub-contractors have with the company, and found an increase in the average payment cycle from BHEL from 30 days (six months ago) to around 45 days now. BHEL levies LDs for job work delays at 5% per week with a maximum 7% of the job charges, in case the sub-contractor delays any of BHELs projects. We feel, BHEL will have to work on improving the business terms with its important vendors in order to further motivate them to improve upon job timeline and quality.

## India Boilers Conference, 2010

Further to our Trichy visit, we attended India boilers conference- 2010 at Chennai to further get a sense of long term trends and key challenges in the Indian Power equipment space. Following are the key highlights:

- **Scope for reduction in project execution cycle; Focus on better quality of projects**

Senior industry experts accentuated ways to reduce power projects execution cycle by adopting various measures like use of multiple cranes at the Boiler Island etc. They also emphasized to do majority of welding work at vendors' manufacturing facility rather than at client's site, to improve the overall quality of projects. There seemed to be increasing need to follow lean manufacturing process in the power plant equipment manufacture as in the automobile industry, for which overall business process re-engineering need was felt.

- **Stricter emission norms for power plants in next 5-10 years**

While developed nations follow stringent norms with respect to SO<sub>x</sub>, NO<sub>x</sub>, mercury emission at plant levels, India is expected to see tightening of regulations with respect to these emission over the next few years. GoI has already commenced its planned capacity addition in the efficient super-critical category in its five year plans, beginning in the Eleventh Five Year Plan, which is expected to be 100% of the Thirteenth Plan period. With ~25% of the global carbon dioxide produced by CHPs and coal power plants, global standards would also be further tightened to achieve ~90% carbon capture by 2030.

- **Efficient power plants to command premium over long term**

While fuel shortage has been a key challenge as far as power generation is concerned, given India has ~20% of the global population while its coal reserves are ~ 10% of the global reserves, it is expected that power plants which are more efficient would command premium going forward.

- **Heating accounts for 18-19% of India's energy needs**

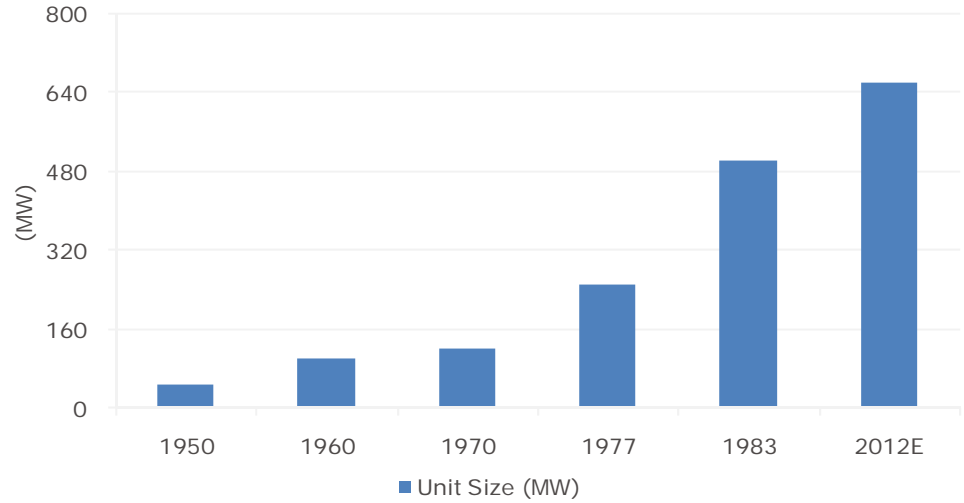
While power plants are a major source of energy, it is estimated that ~18-19% of India's energy needs are in the form of process heating. This indicates good potential for small boilers, on which not many equipment players are currently focused.

**Table 1: Super-critical capacity addition - To be a focus area**

	Main steam/Reheat (° C )	Achievable efficiency	Capital cost (USD/Kw)	CO2 emission (KG/MW)
Sub critical	< 560	33-39%	1,100	920
Super-Critical	560-620	45-47%	1,200	820
Ultra Super-Critical	> 620	50-55%	1,300	780

Source: IEA, Boilers- 2010

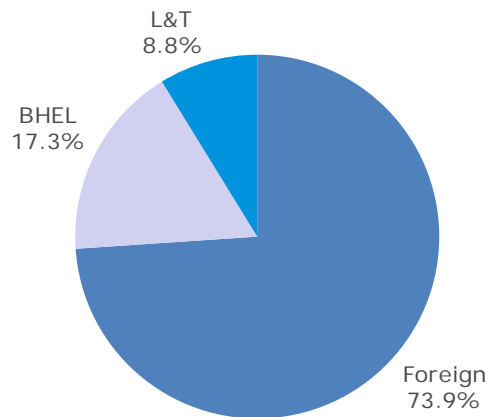
**Chart 1: Evolution of coal sets in India**



Source: Industry

More than 400 super-critical plants are operational globally, having a total installed capacity of 250 Gw. While developed nations like US, France, and Japan see this technology as conventional, emerging economies like India and China started planning for capacity addition only in the past 3-4 years. India has seen ordering of more than 37 Gw of super-critical sets till date; the first super-critical is set to commission in FY12. GoI has proposed 100% capacity addition (for central and state utilities) in super-critical plants for the Thirteenth Plan period, and is expected to come up with certain regulatory changes with respect to fuel source allotment to promote the super-critical technology, owing to plant efficiency and reduced emission benefits.

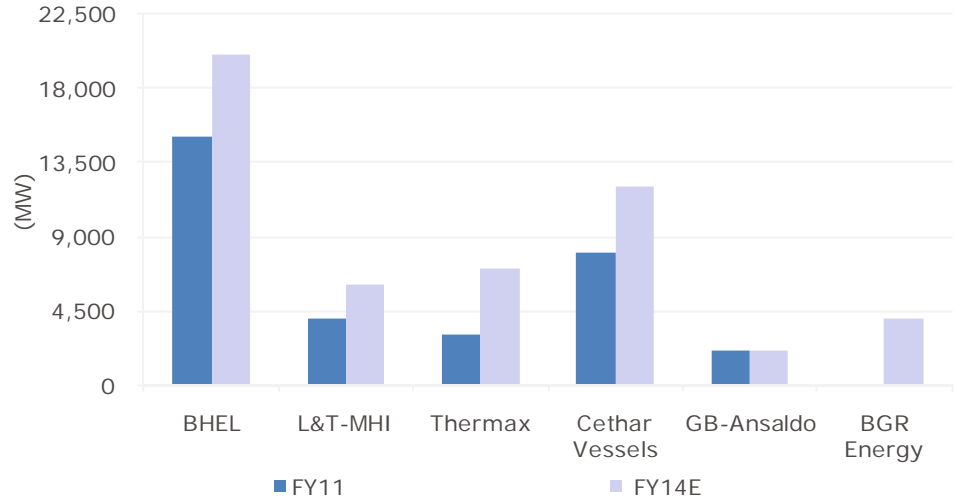
**Chart 2: Foreign BTG players enjoying the lion's share in India**



Source: Edelweiss research

India has seen total BTG awards of 37.6 Gw till date in the super-critical category, of which, Chinese, Korean and Russian players form the chunk (~74% of the orders). This is since foreign players offer lower BTG supply value and have reduced execution schedules, compared with domestic players.

**Chart 3: Boiler capacities- India**



Source: Company, Edelweiss research

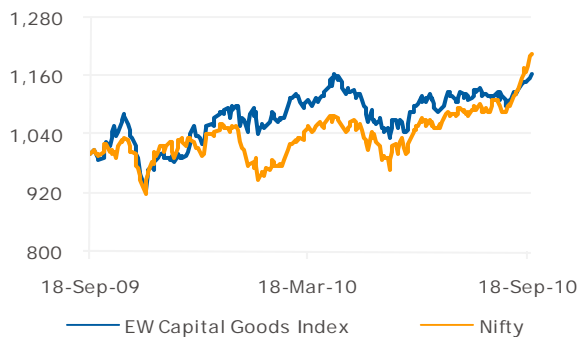
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### Coverage group(s) of stocks by primary analyst(s): Engineering and Capital Goods

ABB India, AIA Engineering, BGR Energy Systems, Bharat Heavy Electricals, Bajaj Electricals, Crompton Greaves, Havell's India, Jyoti Structures, KEC International, Cummins India, Kirloskar Oil Engines, Kalpataru Power Transmission, Larsen & Toubro, Punj Lloyd, Sanghvi Movers, Siemens, Techno Electric & Engineering, Thermax, Texmaco, Voltamp Transformers, Voltas

#### EW Indices



#### Distribution of Ratings / Market Cap

##### Edelweiss Research Coverage Universe

	Buy	Hold	Reduce	Total
Rating Distribution*	116	45	12	176
* 3 stocks under review				
	> 50bn	Between 10bn and 50 bn	< 10bn	
Market Cap (INR)	110	53	13	

#### Recent research

Date	Company	Title	Price (INR)	Recos
07-Sep-10	<b>KEC International</b>	Attractive acquisition with a long term vision; <i>Visit Note</i>	494	Buy
06-Sep-10	<b>Thermax</b>	The next big leap; <i>Visit Note</i>	792	Buy
13-Aug-10	<b>Cummins India</b>	Back to good old days; <i>Result Update</i>	672	Buy
13-Aug-10	<b>AIA Engineering</b>	In line with estimates; <i>Result Update</i>	349	Hold

#### Rating Interpretation

Rating	Expected to
<b>Buy</b>	appreciate more than 15% over a 12-month period
<b>Hold</b>	appreciate up to 15% over a 12-month period
<b>Reduce</b>	depreciate more than 5% over a 12-month period

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