

Bharat Heavy Electricals Ltd (BHEL)

Dominance under threat



SELL

CMP: INR 1766

Target Price: INR 1282

September 4, 2008

Strictly confidential

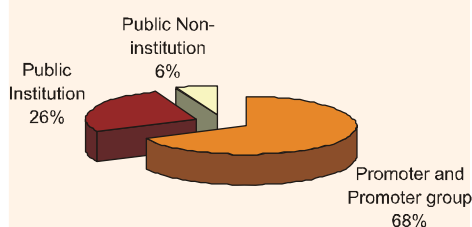
Market Data

Sector	:	Industrials
Listing	:	NSE & BSE
Market Cap (INRbn)	:	864
Market Cap (USDbn)	:	19
O/S Shares (m)	:	490
Free Float (m)	:	157
52-wk HI/LO (Rs)	:	2930/1327
Avg Daily Vol ('000)	:	1,533
Face Value (Rs)	:	10
Bloomberg	:	BHEL IN
Reuters	:	BHEL.BO

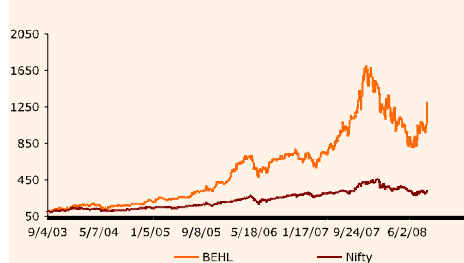
Price Performance (%)

	1m	3m	6m	12m
Absolute	2.2	12.5	(21.6)	(5.0)
Relative	(0.8)	19.7	(8.7)	(3.6)

Share Holding Pattern



Share Performance Vs NIFTY



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BHEL's dominance under threat

Most capacity expansions that are expected to come up in the 12th Plan are likely to be through large-size supercritical units, which we perceive as a weakness of Bharat Heavy Electricals Ltd (BHEL). As more plants are being set up through biddings, strategic tie-ups with large utilities have become the norm. But the company has not been able to secure even a single order from such market players. Since BHEL has been able to garner only 37% of the hydro capacity addition in the 11th Plan, we expect the ratio to continue or even deteriorate further during the 12th Plan. We expect the news flow to be negative for equipment players like BHEL in the near term.

Macro environment not cohesive for aggressive expansion

Rising interest rates and commodity prices will affect the capital expenditure, which in turn will make the infrastructure costlier. Due to rising prices of commodities and interest rates, the fixed cost per kWh has gone up by at least INR0.2/kWh in the past 9 months. Besides, fund raising through equity as well as debt has become increasingly tough for all infrastructure players. We believe that fund raising will affect the incremental order book position of capital goods substantially over the next 2 quarters, especially in the case of BHEL.

Valuation and rating

BHEL will register a CAGR of 21% in EPS over the next 3 years on the back of a huge order-book position, which we believe would come down to a CAGR of 18% on a 5-year term, as we have estimated a declining order book to sales ratio. Its margin will be under pressure, due to rising raw material costs and significant wage increase. Being in a cyclical industry, we would like to assess its value through relative valuation using EV/EBITDA multiple. On the other hand, we would like to value its long-term growth on the back of the huge order book, based on the DCF to equity valuation method. We initiate on BHEL with a 'sell' rating, and establish a target price of INR1,282 per share, indicating 27% downside from current levels.

Risk to our call

If commodities and interest rates come down drastically in the near term, it could prove to be the biggest risk to our call on BHEL. In addition, better macroeconomic environment, with better flow of funds to infrastructure sector, could be another risk to our call.

INRm	FY08	FY09e	FY10e	FY11e
Revenue	205,696	260,059	324,267	392,767
EBITDA	37,438	44,507	57,442	72,039
EBITDA growth (%)	4.7%	18.9%	29.1%	25.4%
PAT	26,404	32,493	40,169	50,111
EPS (INR)	53.9	66.4	82.1	102.4
EPS growth (%)	9.4%	23.1%	23.6%	24.8%
P/E	32.7	26.6	21.5	17.3
P/B	8.0	6.6	5.5	4.5
EV/EVITDA	21.5	18.1	14.0	11.2
RoE (%)	24.5%	24.9%	25.4%	26.0%

Source: Company, Antique Research

Investment Thesis

BHEL's dominance under threat

Most capacity expansions that are expected to come up in the 12th Plan are likely to be through large-size supercritical units, which we perceive as a weakness of Bharat Heavy Electricals Ltd (BHEL). As more plants are being set up through biddings, strategic tie-ups with large utilities have become the norm. But BHEL has not been able to secure even a single order from such market players. Since BHEL has been able to garner only 37% of the hydro capacity addition in the 11th Plan, we expect the ratio to continue or even deteriorate further during the 12th Plan. We expect the news flow to be negative, for equipment players like BHEL in the near term.

12th Plan orders to be the biggest order inflow so far

12th Plan: Emphasis on large-size units

We believe that more than 60% of coal-fired units proposed for addition in the 12th Plan will be through large-size (660/800 MW) units. BHEL's performance in this segment has not been as good as in lower-size units.

The 12th Plan estimates for capacity expansions in the power sector range from 91,759 MW to 155,931 MW. The wide range is mainly on account of a large number of coal plants, which are being envisaged by various private players in the country, and also five additional ultra-mega power projects (UMPP) that are being promoted by the government. The likely expansion of 91,759 MW is based on the estimate of an 8% GDP growth till FY17. The table below summarizes the estimates for the 'likely expansion' and 'on the shelf'.

Planned capacity addition in the 12th Plan

Fuel	Likely expansion	Overall on shelf
Hydro	31,734	40,658
Thermal	47,225	102,473
Nuclear	12,800	12,800
Total	91,759	155,931

Source: CEA, Antique

The 47,225 MW of thermal power envisaged consists of five UMPPs (5x4,000 MW) and 9,000 MW of NTPC. All of this will either be 660 MW or 800 MW supercritical units. This clearly signals that there is a shift toward large-size supercritical units for more efficient equipment. Although this was envisaged in the 11th Plan itself, it finally appears to be getting off the ground.

BHEL: Lagging behind in large-size unit contracts

BHEL's current market share in the large-size unit installation is far less than the 65% share in the current overall installed capacity of the country, which generally has small to medium-sized frames. The table below shows the same.

Major large-size unit contracts awarded or bid

Project	Capacity-MW	Boiler	Turbine
Mundra-UMPP	4,000	Doosan	Toshiba
Sasan-UMPP	3,960	Shanghai Electric	Shanghai Electric
Krishnapattanam-UMPP	3,960	Shanghai Electric	Shanghai Electric
APGENCO	1,600	BHEL	LT-MHI
Barh-II-NTPC	1,980	BHEL	BHEL
Tamil Nadu-TNEB	1,600	BHEL	BHEL
Mundra-Adani	1,320	SEPCO III	SEPCO III

Source: Infraline, Antique

Apart from large supercritical units mentioned above, subcritical units of 600 MW size have been awarded to Shanghai Electric, Dongfang and SEPCO III. All these players, with the exception of BHEL and L&T, have execution experience in large-size unit projects.

Private utilities: Poised to make their presence felt

According to our estimate, by the end of 12th Plan, private players will have 25-30% of the total installed capacity in the country. As on July 31, 2008, this figure in the total installed capacity is only 15%. Major players in the segment are Tata Power, Reliance Power, CESC, Torrent, Essar, GMR, Lanco, GVK and the Jaiprakash group. The government's effort in terms of mobilization of funds in the sector and increasing the pace of growth by de-regulation seem to be working, as these players have lined up ambitious plans for capacity additions, besides new entrants appearing on the list. The list below summarizes expansion plans of major private players in the sector.

Plan of major private players

Private players	Overall	Under construction			
	plan - MW	MW	EPC/BTG	MW	EPC/BTG
Reliance Power	28,200	5,200	Shanghai Electric		
Tata Power	11,800	4,000	Doosan/Toshiba	1,300	BHEL
JSW Energy	6,000	1,200	Shanghai Electric		
JSPL	4,000			1,000	BHEL
Jai Prakash	5,645	1,000	Voith Siemens		
Sterlite Energy	10,000	2,400	SEPCO III		
CESC	3,850			250	BHEL
Adani	9,900	2,640	SEPCO III, SFPML		
Lanco	15,000	2,285	Dongfang		
GVK	1,764	464	Alstom	930	BHEL
Torrent Power	1,128	1,128	Siemens		
Essar	6,000	1,500	GE		
Total	103,287	21,817		3,480	

Source: Antique, Infraline

These major players have plans to add 103,287 MW during 11th and 12th Plan periods. More than 24,000 MW is under construction, out of which BHEL has been able to secure orders for only 3,480 MW. Historically, BHEL has not been a leader in the private segment, and even if 70-80% of its planned capacity comes on stream, we fear the company might find it hard to gain a strong foothold in this segment.

BHEL: Hydro performance has been moderate

In terms of hydro projects, though BHEL has been the largest supplier of electro-mechanical equipment, it has been able to win only around 36.6% of total projects under construction, which is widely regarded as less than its thermal presence of above 65%.

11th plan-Hydro plan orders

Total projects under construction	15,627
Order to BHEL	5,723
% share	36.6%

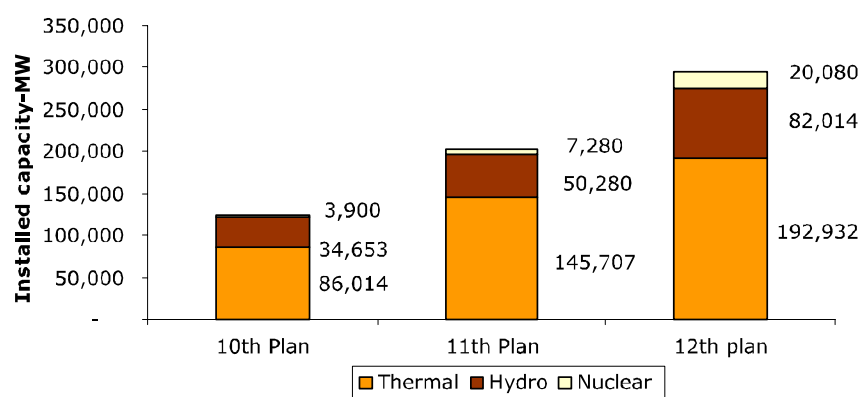
Source: CEA, Antique

Voith Siemens has been able to bag about 17% in the segment. Further, BHEL, which has in the past looked almost formidable in terms of contracts from state utilities, has bagged orders of only 580 MW out of the total capacity of 3,127 MW commissioned or under construction projects for the 11th Plan.

India's overall hydro potential is estimated at around 150,000 MW, with Arunachal Pradesh, Jammu & Kashmir, Uttaranchal and Himachal Pradesh being high-potential states. The government, along with Central Electricity Authority (CEA), has carved out a 50,000 MW hydro initiative, whose benefits are expected to largely start accruing from the 11th Plan.

Fuel-wise Generation capacity

Estimated fuel mix by the end of 11th and 12th plan



Source: CEA, Antique

The emphasis on the hydro power sector is evident from planned capacity additions in the 12th Plan. More than 31,000 MW of hydro power has been planned for the 12th Plan, which is almost twice that of the 11th plan (plans an addition of 15,627 MW) on account of the increased participation from private players.

Considering the strong pipeline of hydro power plants and the company's moderate performance in the 11th Plan in this segment, we estimate that it will just manage to retain its market share.

Tariff-based projects: Focus on strategic tie-ups

We found that strategic tie-ups have become the norms for equipment procurement, rather than traditional international competitive bids while bidding for plants through tariff-based bids. Some of the recent wins in these tariff-based bidding have been in Mundra UMPP, Sasan UMPP, Krishnapattanam UMPP, Anpara 'C', and Mundra-Adani. BHEL has not bagged any orders from them. On the other hand, state electricity boards (SEB) and regulated utilities opt for the negotiated route or international competitive bidding, where BHEL has been one of the preferred bidders. We believe, going forward, the tariff-based bidding will be the preferred route of capacity addition in majority of states, and hence BHEL needs to gear up for such a regime.

Tariff-based bids

Projects	Developer	State	BTG/EPC
Mundra UMPP-4 GW	Tata Power	Gujarat	Toshiba/Doosan
Sasan UMPP-4 GW	Reliance Power	MP	Shanghai
Krishnapattanam UMPP-4 GW	Reliance Power	AP	Shanghai
Anpara C-1.2 GW	Lanco	UP	Dongfang
Salaya-1.2 GW	Essar	Gujarat	In discussion with foreign players
Mundra-2.6 GW	Adani	Gujarat	SEPCO
Talwandi- 2 GW	Sterlite	Punjab	SEPCO
Bhaiyathan-1.6 GW	Indiabulls	Chhattisgarh	In discussion with foreign players

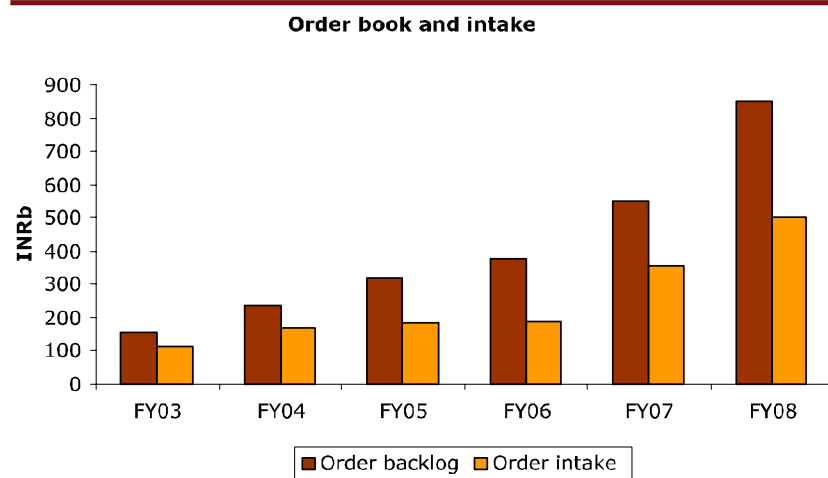
Source: Infraline, Antique

Execution, a challenge to BHEL: might buckle under its own weight

Too much in the plate

BHEL has seen its order book grow phenomenally over the past 5-6 years buoyed by orders for the 11th Plan capacity additions and higher industrial growth. The company has seen a consistent rise in its order intake in these years (INR112bn in FY03 to INR502bn in FY08), and had an overall order intake of around INR1,500bn in the past 6 years. The table below shows the increase in order intake, and order backlog at the end of the year.

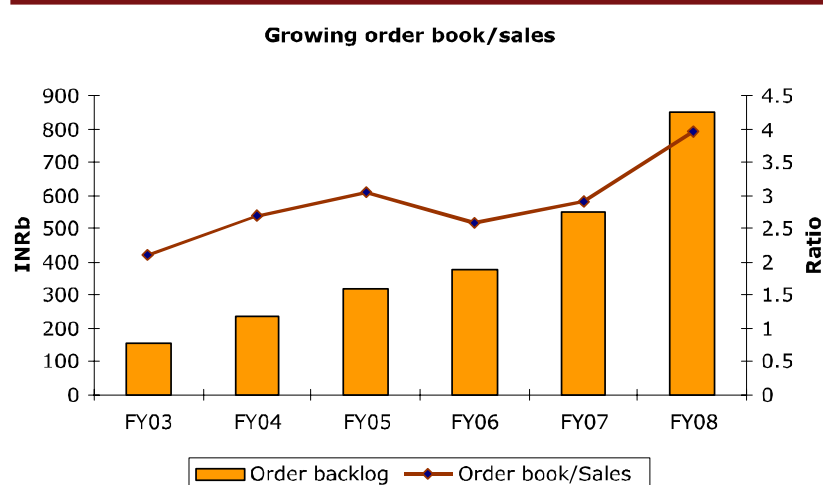
Order book growth



Source: Company, Antique

Due to high growth in the order intake, BHEL's order book to sales ratio has moved to the all-time high figure of 4x at the end of FY08. The company has received orders worth INR140bn in Q109 as well, totalling its order backlog to INR950bn at the end of the quarter.

Order book to sales ratio



Source: Company, Antique

We believe such high order book to sales ratio might make utilities concerned over award of fresh orders to the company, unless BHEL promises a timely capacity expansion plan.

Present capacity not equipped to manage timely execution

In Q2FY09, out of 4,652 MW commercial operation date (COD) to be achieved, 1,920 MW was required to be commissioned by BHEL in July, 2008. Out of this, only Parichha Unit-4 (210 MW) and Kahalgaon Unit-5 (1x500 MW) have been declared on commercial operation in July, 2008, while 1,210 MW capacity has slipped to subsequent months.

There have been similar instances in the past as well. Delays have been on account of BoP issues, changes in parameters, unavailability of critical equipment, and production capacity constraints.

As per a media report, BHEL may have to pay PSEB a penalty of up to 5% of the total cost of the 500 MW Lehra Mohabbat stage-4 thermal project, commissioning of which has been delayed by over a year. The project is estimated to be worth around INR18 bn, and any penalty of such sort can affect the bottom line. We believe the company might end up having a similar situation in the case of the delay of the 250 MW lignite-based units (around INR12b) of GIPCL, which has now been delayed by 5-6 months.

In the wake of a large order backlog, BHEL has increased its capacity from 6,000 MW to 10,000 MW in FY07-08. It plans to increase this capacity to 15,000 MW by December 2009 with an investment of INR50b. The capacity addition will be in phases, with some capacity expected to come up in April 2009 and the rest by December 2009. On a longer term, the company plans to step up this capacity to 20,000 MW by FY12.

BHEL's production capacity plan

MW	Present	FY10e	FY12e
Hydro	2,500	2,500	
Thermal	6,000	11,000	
Captive	1,500	1,500	
Total	10,000	15,000	20,000

Source: Antique, Company

We believe any delay in the capacity expansion might lead to execution delays, and hence liquidated damages for the company.

Balance of plant (BoP) capacities: Tight delivery

While a number of players have entered the main plant contracting area, the balance of the plant area still has constraints in terms of the number of players and their capacities. Key players in the market include Elecon, Paharpur, TRF, DCIPS, Jyoti, Gammon India, Driplex, ERA and Techno Elect, among others. Although quite a few of these contracting work is being carried out by BHEL as well, we believe the company is already over-booked from the main plant contracts to undertake further contracts.

Balance of plant (BoP) orders placed for the 11th Plan

Name of BoP	BoPs required for projects Commissioned & Under Construction	BoPs required for projects where LOA is yet to be placed	Total BoPs required	Order placed	Orders to be placed
Coal Handling Plant	76	13	89	50	26
Ash Handling Plant	76	13	89	52	24
Demineralized(DM)	81	14	95	39	42
Cooling Tower	84	14	98	50	34
Chimney	85	14	99	55	30
Fuel Oil (FO) System	85	14	99	37	48
PT Plant	82	14	96	47	35
Total	569	96	665	330	239
% orders placed					42%

Source: CEA, Antique

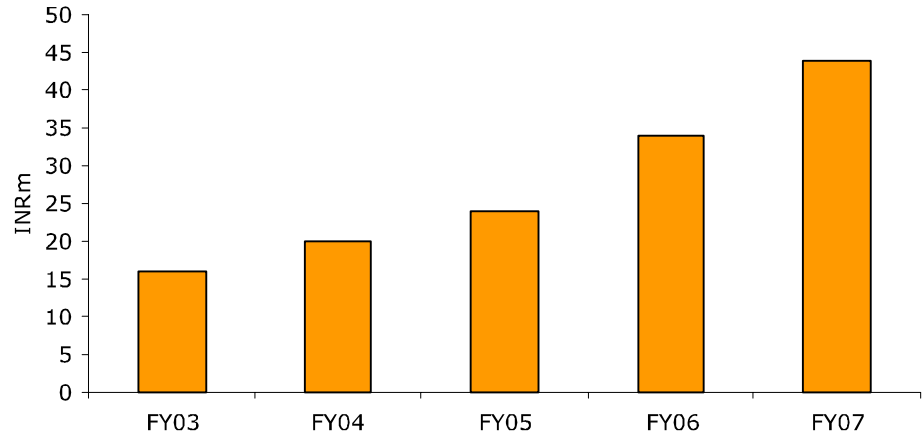
The table on BoP clearly indicates that execution delays on account of BoP are expected to further worsen in the near future, as only 42% of orders for the 11th Plan have been placed. We believe all projects, wherein BHEL has turnkey contracts, might face the risk of delay.

Manpower - Are BHEL employees the target for poaching?

With growing order book, BHEL will need to enhance its human capital to execute projects. It has over 42,000 skilled employees, who have shown better employee skill development, which is clear from the increasing turnover/employee over the years.

Consistently rising productivity

Turnover per employee



Source: Company, Antique

Since the number of players in the engineering space is on the rise, the requirement of skilled engineers would make BHEL a vulnerable target.

Competition: Is sellers' market coming to an end

The global slowdown will create spare capacity for various players in their markets, leading to aggressive bidding. This is likely to happen 6-12 months from now. But whenever that happens, it will affect margins of all equipment players. We expect further pressure coming from home-grown competition on margins from global majors through joint ventures with local players. Chinese and other global players earn razor-thin margins as compared with BHEL, which may erode its margins in the long term.

Power equipment market: Global players vying for their share in India

Some years ago, we had very few equipment providers in India. But with the size of the overall pie increasing, a large number of global players have entered the market, thus changing the dynamics of the sellers' market that existed in the recent past. The Indian engineering space has players such as GE, Siemens, Alstom, ABB, Areva, Shanghai Electric, Harbin, Dongfang, SEPCO, CMEC, Toshiba, Doosan and MHI. We believe the competition from these players will further intensify.

We have already seen a mixed bag of wins in the space, with global players outbidding BHEL in some contracts and vice versa. In the last 3 years, orders for boilers and turbines have been placed for a capacity of around 70,000 MW, and over a fifth of them have gone to global players. Earlier, we have highlighted that in IPPs and private utilities space, BHEL has been able to win only 10-12% of awards.

We believe BHEL will face stiff competition from these players, and the greater participation from bidders will ensure the sellers' market coming to an end completely, which probably has already begun.

Chinese have arrived - The cost and quality conundrum

Recent wins of Chinese players have again raised the million-dollar question whether the Indian capital goods market will be over shadowed by these players. Chinese manufacturers such as Dongfang, Shanghai Electric Corporation, SEPCO, CMEC and Harbin are anywhere between 10% and 15% cheaper than BHEL.

While initial cost for these units supplied by Chinese players is generally less, there have been quality issues with these sets. In the newly commissioned 300-MW Sagardighi thermal unit in West Bengal, not only turbine blades collapsed, but also boiler tubes developed leaks. Dongfang, the Chinese equipment provider, took 81 days to stabilize the unit, though one of the reasons for the delay was the China earthquake. In another instance, there have been issues of under-powered fans at stations at the BALCO unit of Sterlite Industries Ltd.

New entrants: Capitalize on the India advantage through JVs

The power market has also seen few Indian engineering majors enter the market. Larsen & Toubro (L&T) has been a successful bidder in the recent Krishnapattanam bid of APGENCO, where it outbid BHEL in the turbine contract. Players like Thermax and BGR Energy have also entered the market, thus making the going tougher for BHEL. These companies have taken the JV route to enter the space. While L&T has a JV with MHI, Thermax has tied up with Babcock. These JVs will have a twin advantage: Indian cost and global technology.

A large number of global majors such as Alstom, ABB, Areva, Bechtel, Caterpillar, Cummins, GE, Hitachi, Komatsu, Mitsubishi, Toshiba and Siemens have started participating directly or through listed subsidiaries, JVs or technology transfers in the market. Siemens and Alstom have provided BHEL with technology for turbines and boilers for coal plants (including supercritical projects). GE has supplied technology for gas-based turbines to BHEL. Mitsubishi has two 50:50 JVs with L&T to manufacture supercritical turbines and boilers in India.

JV with NTPC: Baby yet to be delivered

BHEL as well as NTPC are losing talented engineers on a regular basis to private companies. We expect the company to attract more talent through a joint venture with NTPC, as it is prepared to pay remuneration on par with market standards. Although the JV company is expected to get rest of the plant work, it will execute engineering, procurement and commissioning (EPC) contracts, and equipment orders of mega power projects. Currently, the rest of the plant work is the most critical element in the execution process, as it has not been able to build these capacities for years, but wishes to deliver them shortly.

This entity would soon have a new private sector partner in the form of a private company promoted by two PSUs. Initially, the company will focus on the BoP. We believe this is a positive step by the company towards coping with execution delays on account of BoPs. However, we have not considered the income from this company in our estimates due to lack of complete clarity. To start with, it looks good for the execution of BHEL's projects, whereas the new partner will focus on high-end of the business segment, which will end up with direct competition with BHEL.

Advantage BHEL: Quality equipment with reliable service

Company and product portfolio

BHEL, one of leading international players in the engineering space, is the market leader in providing equipment for power plants. The company manufactures over 180 products under 30 major product groups, besides catering to core sectors of the Indian economy, namely, power generation and transmission industry, transportation, renewable energy, etc.

BHEL's operations are organised around three business sectors: power, industry including transmission, transportation and renewable energy, and international operations.

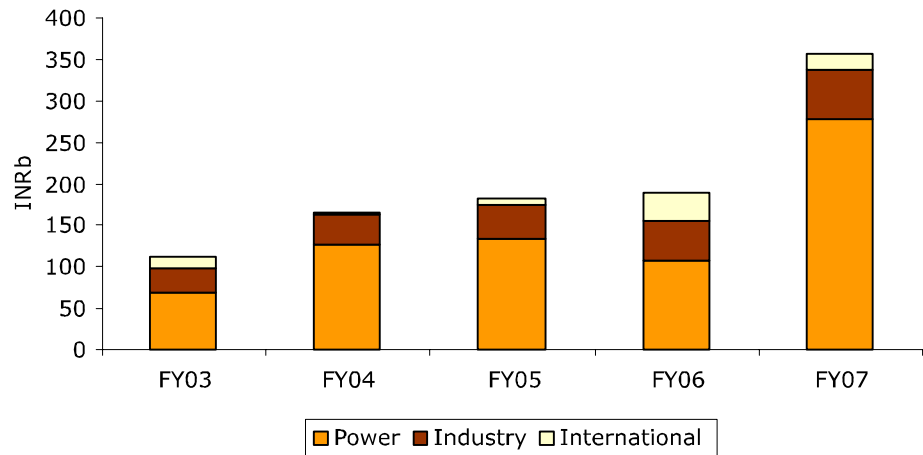
Power, which is BHEL's focal area, comprises thermal, nuclear, gas, diesel and hydro businesses. Currently, the company's sets account for nearly 65% of the total installed power generating capacity in the country. It has supplied sets of up to 500 MW, and has recently taken orders for supplying 800 MW sets as well. It has access to technology for supplying gas turbines of up to 279 MW sets. The power business sector has a 'spares and services business group', which acts as a single-window facility for customers.

The industry business sector consists of transmission sector, oil and gas, transportation and renewable energy. BHEL has the capability to supply complete onshore drilling rigs, super-deep drilling rigs, desert rigs, mobile rigs, workover rigs and sub-sea well heads. The company supplies a wide range of products and systems for transmission and distribution applications, including power transformers, instrument transformers, dry-type transformers, shunt reactors, capacitors, vacuum and SF₆ switchgear, gas-insulated switchgear and ceramic insulators, among others.

BHEL's international operations span over as many as 60 countries. Its product range in the international market include turnkey power projects of thermal, hydro and gas-based, transmission substation projects, rehabilitation projects for boilers and power stations, besides a wide variety of products such as transformers, reactors, compressors, valves and oil field equipment, electrostatic precipitators, photo-voltaic equipment, insulators, switchgears, heat exchangers, and castings and forgings.

The segment-wise order intake shows that the power business segment constitutes 70-80% of the total portfolio.

Segmentwise order intake

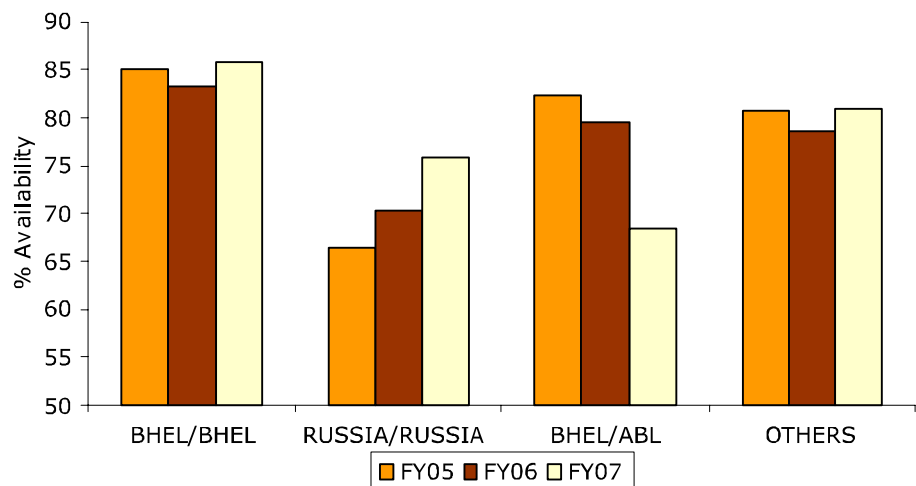


Source: Company, Antique

Good quality standard maintained

Over the years, BHEL has maintained high quality standards, which is evident from its sets in India and overseas. The company has been able to maintain the quality and reliability of its products on account of its emphasis on design, engineering and manufacturing of international standards by acquiring and adapting some of the best technologies from leading companies in the world, together with technologies developed in its own R&D centres.

Operating Availability



Source: CEA, Antique

BHEL has shown its high quality standard by maintaining high operational performance throughout the years. The figure indicates the turbine/boiler make, and the operating availability over the past 3 years.

Gas projects: Able to maintain its strike rate

BHEL has shown good performance in some of the gas-based projects, both within the country and globally. In Q109, it has bagged an INR35,880mn turnkey contract for Pragati III combined cycle power plant of four advanced class frame 9FA gas turbines to be installed at Bawana in Delhi. Also, BHEL has bagged EPC orders from GPCC for a 700 MW gas-based power plant, besides a 345 MW gas-based captive power plant from Reliance Industries.

Gas projects	MW	INRm
National		
Pragati III-CCPP	1,371	35,880
GSPC Pipavav Power	700	18,930
RIL,captive-CCPP	345	8,660
Intenational		
IER, UAE	84	1,400
IER, UAE	84	1,600
Al Ghail Power LLC	84	1,500

Source: Company, Antique

With regard to international operations, BHEL made its third breakthrough in the UAE in the last 11 months. The company has received orders for six gas turbine generating units of 42 MW in the last three wins. Of these, two orders are from International Energy Resources (IER), UAE, in the last 2 months. The order reflects the customers' confidence in BHEL's capabilities and its proven technological excellence.

The Middle East is one of BHEL's key export regions, where it has set up 14 power projects so far, apart from substations and the supply of a host of equipment for power and oil and gas sectors.

We believe this is a significant achievement considering the presence of good international players such as GE, Siemens and Alstom in the space.

Spares and services group to play key role in the future

BHEL has been the equipment provider to nearly 65% of the total installed capacity in India, which comprises sets of various sizes, ranging from 50 MW to 500 MW. With a large portion of these units having vintage in the range of 20-30 years, the renovation and modernization, and life extension programme is a huge market for the company. As per the R&M programme for the 11th Plan, BHEL will undertake R&M of 87% of units.

MW	Total R&M	By BHEL	%
State	5,035	5,035	100%
Central	14,170	11,670	82%
Total	19,205	16,705	87%

Source: CEA, Antique

Ray of hope: Some wins to keep hopes alive

BHEL has geared up for competition from global players, and has outbid them in few of the recent private sector bids. The company is the best bidder in the 2,400-MW Debrand project of Tata Power, and in the 1,050-MW Orissa project of Monnet Ispat. However, contracts are yet to be formally awarded. In both cases, Harbin Power of China is the second-best bidder. Earlier, BHEL had outbid Doosan of Korea in the 250 MW Trombay of TPCL, and 250 MW Budge-Budge of CESC.

Macro environment not cohesive for aggressive expansion

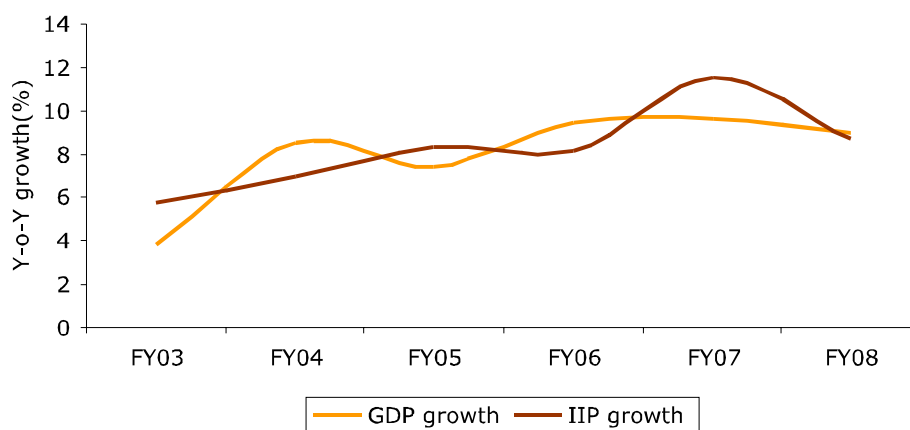
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Tightness to continue

Robust macro environment showing signs of erosion

The IIP numbers of the past 5 years clearly show that the manufacturing segment, capital goods in particular, has shown a remarkable performance, thus indicating the strong growth, which also fuelled the high GDP growth. While IIP has grown from 5.8% in FY03 to 8.7% in FY08, GDP has grown from 3.8% to 9% in the same period. Capital goods sector within IIP grew from 10.5% to 18.1% during the same period.

GDP and IIP growth (y-o-y)

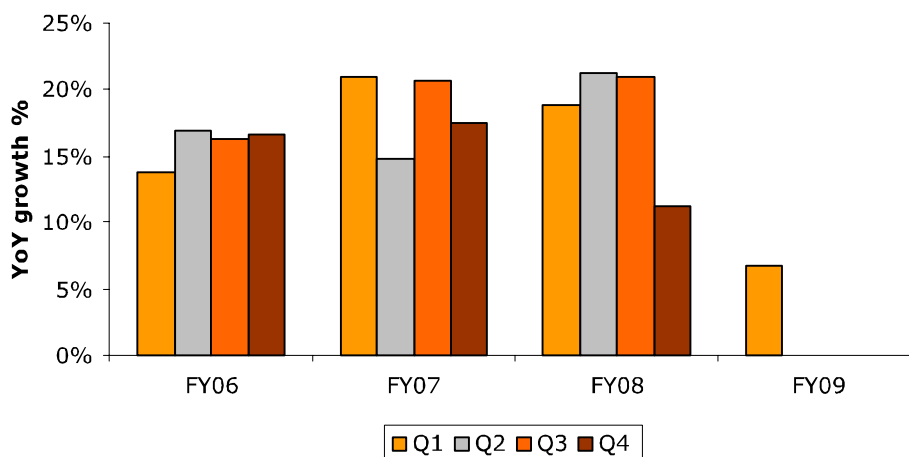


Source: RBI, Antique

We feel this high growth scenario is going to ease off on account of high interest rates and double-digit inflation, which is currently at a 13-year high. We expect this regime to continue over the next 12-18 months.

In its recent publication, the RBI has clearly signalled a lower GDP estimate (8% growth) for the current fiscal. The indication of this has already begun to be seen in the last few months. The capital goods y-o-y growth over the period from FY06 to FY08 in all quarters has been in the double-digit, ranging from 11% to 24%. For Q1FY09, the capital goods sector in the IIP has grown by a mere 6.8%.

Capital goods growth



Source: RBI, Antique

Further, on a monthly basis, there has been only 2 months in the period from February 2005 to December 2007 when the growth has been in single digits. But the more recent trends indicate that the pain will linger even longer. In the 6 months from January 2008 to June 2008, there have been 3 months when the growth has been in single digits (i.e., 3%, 3% and 6%).

Interest rate to hurt the pace of financial closure in power projects

In the past few years, a large number of private players have entered the power sector on account of the demand-supply gap and increased de-regulation. We believe, with the high interest rates regime and lack of adequate fund, this pace will slow down. The movement of the weighted average benchmark prime lending rates (BPLR) are shown below.

BPLR-%	March'07	March'08	June'08
Public sector	12.43	12.84	12.94
Private	14.33	15.1	15.22

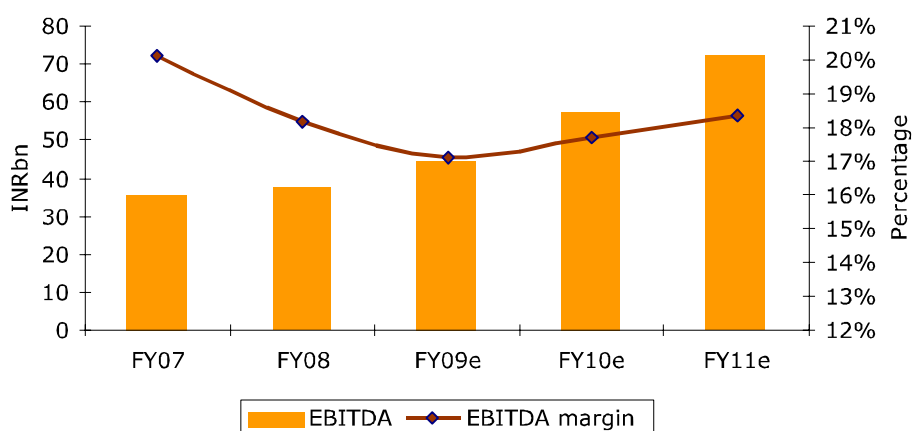
Source: RBI, Antique

With inflation rates at a 13-year high, we believe there will be further tightening of interest rates, leading to a slower rate of growth in the sector. This will adversely impact the capital goods sector. Hence, we believe the pace of growth is going to ease off, and we might see the year ending with low capital goods growth.

Rising cost of commodities and increase in wage

Over the past one year, raw material prices, including ferrous, non-ferrous, insulating materials, cables and magnet wires, have risen significantly by 40-50%.

EBITDA and margin



Source: Company, Antique

We believe this will increase the cost to the company by 3-5%. Also, cement prices have gone up by around 15%, which would add another 0.6% rise in the cost element. The graph above shows our estimate for the EBITDA and the EBITDA margin over the next 3 years. The margin in FY09e (17.1%) is estimated to be 1.1% lower than 18.2% in FY08. The effect in FY09e is on account of increase in raw material price and provision for wage. In FY10e and FY11e, we have considered a moderate increase in the wage, and hence, there is an improvement in the EBITDA margin.

Currently, the company has gained from high inventory levels on account of FIFO accounting. But we believe there will be some impact once the recently procured steel comes to the consumption stage.

BHEL has taken steps to cut down its materials cost. It is opting for a 3D modelling of structures, which would lead to tonnage reduction. Further, the company is going ahead with 'Advanced Manufacturing Actions'.

Based on the recommendation of the Pay Commission, the company had started the provision for the wage increase in FY08 itself. In FY08, it had provisioned INR5.9bn for the same, and would be provisioning INR13bn in the current fiscal. We believe this will have a significant impact on earnings in FY09e. We have assumed a 30% increase in the overall staff cost for FY09e. Going forward, considering the expansion plan of the company, we feel there would be a further increase in the staff cost. Currently, it has 42,000 employees, which after the expansion in FY12 will go up to 50,000.

One of the major reasons for the delay in the recent past has been the scarcity of imported components used in power plants. According to the company, for all the 11th Plan projects, it has already ordered all critical materials, castings and forgings.

Investments in capital goods: Do we have enough resources?

We tried to take a look at various traditional ways of financing power and other industrial projects, and the ability of companies to raise funds efficiently. As Indian utilities need USD100bn to fund the capital expenditure in the 11th Plan, we find that we may not have enough resources to fund such a massive amount on our own. Most utilities, whether public or private, desperately need to raise equity to fund their expansion plans. On the debt side, the leverage for all massive projects may come down 1.5-3, depending on the project viability as compared with the earlier 1:4 in power generation projects. Funding of the debt component (USD70bn) will be a tough task when the Indian debt market remains tight, and foreigners are concerned over the macro situation to fund through external commercial borrowings. We have assessed all the three options separately.

Equity funding: Difficult to get at current valuations

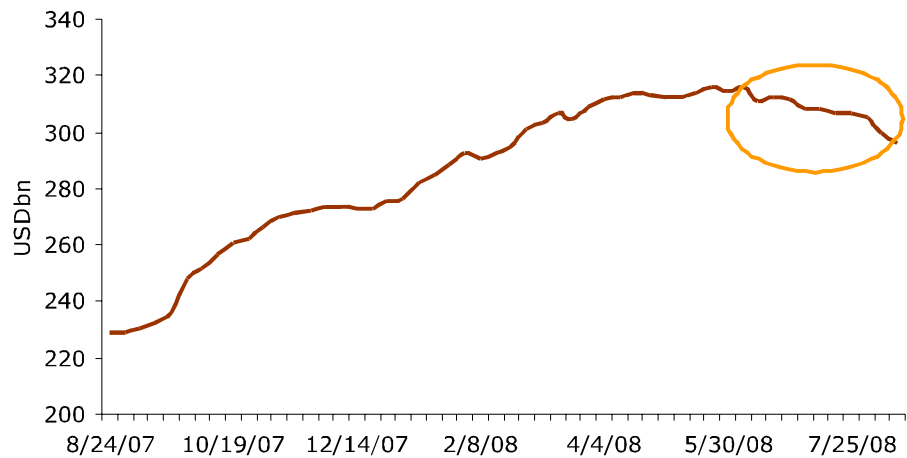
We believe Indian utilities that are set to expand by 10-20 times their existing capacities do not have enough cash to fund their expansion. Most of the recent merchant plants as well as plants through bidding are being set up by these players. We expect these companies would require at least INR500bn for expanding their capacities as per their ambitious plans. At current prices, promoters of such utilities will have to dilute a substantial portion for huge funding requirements. When we looked at the data provided by the RBI, we found that only INR20bn could be raised through equity issues in Q1FY09 as compared with INR130bn in Q1FY08. Good capital flows make such companies buoyant for announcing additional capacities, which could be difficult in the medium term due to tightness.

External commercial borrowings: Who has the appetite for Indian bonds?

We remain moderate on this front, and expect INR120bn (USD28bn) to be raised through ECBs for infrastructure companies. The global credit crunch is the biggest hurdle for the Indian infrastructure, as the availability of funds with global financial giants has come down substantially. With rising financial and current account deficits, it will be quite challenging for infrastructure firms or utilities to raise funds through ECBs in a big way, as they have INR-denominated revenues.

Thanks to the oil deficit and its impact on India's current account, we have already wiped out USD19.9bn from our foreign exchange reserves in the last 13 weeks. If the situation continues, it will take only 12 months to reach USD200bn.

Forex reserves

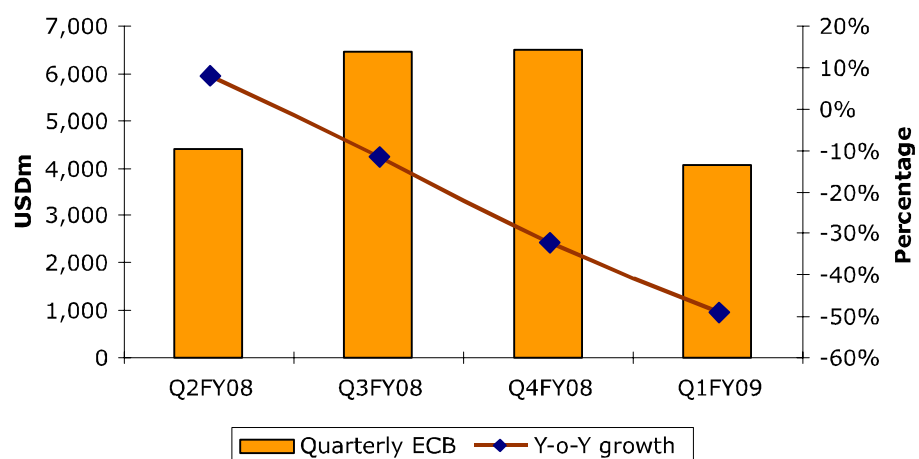


Source: Bloomberg, Antique

This may force international credit rating agencies to downgrade India's sovereign rating, which will further erode the borrowing capacity of Indian utilities. Indian infrastructure was the most-favoured investment for international banks, but it has become a question mark for quite a few of them.

We expect the RBI to be more liberal on ECBs. But that may not yield very good results, due to the deteriorating macro environment at home and international liquidity crunch. India's current account deficit is another worry for international debt investors; it has reached 1.5% of GDP on the back of rising oil prices. The trade balance is already touching USD90bn deficit, which is equivalent to 7.7% of GDP.

Quarterly ECB and YoY growth



Source: RBI, Antique

Corporate borrowings from Banks: Slowdown expected

We expect banks to go slow on infrastructure financing, as it is very difficult to maintain the 41% growth rate (y-o-y basis) recorded earlier. Our banking team expects it to slow down by 15% in the next 2-3 quarters. It clearly indicates that we will have just INR1.3tn (USD30bn) available for the rest of the plan period (11th) for infrastructure. This will prompt banks to tighten their lending norms for the project financing, especially on leverage, and a few may be asked to bring the equity component upfront. There is also concern over the possibility of liquidity conditions worsening further on the back of petroleum and fertilizer bonds. As the fiscal situation worsens with 6th Pay Commission awards, and the huge oil and fertilizer subsidy, interest rates may rise further. This will challenge the feasibility of quite a few aggressively bid infrastructure projects.

As raising funds at high leverage becomes tough, we see a slowdown in incremental order book for all capital goods companies from Q3FY09 onwards. The impact on BHEL would be substantial, as state-owned companies find it difficult to raise money. Hence, we expect the order book to sales ratio for BHEL to fall to 3.7 by the end of FY09e as against around 4.0x for FY08.

Valuation and outlook

BHEL is expected to register a CAGR of 18% in EPS over the next 5 years on the back of a huge order book position. But we estimate this to decline in the long term. Its margin is likely to be under pressure, due to the rising raw material cost. Being in a cyclical industry, we like to assess its value through a relative valuation tool of EV/EBITDA, whereas to value its long-term growth on the back of a huge order book, we use the DCF to equity valuation method. We initiate on BHEL with a 'sell' rating, and establish a target price of INR1,282 per share, indicating a 27% downside from current levels.

Valuation methodology

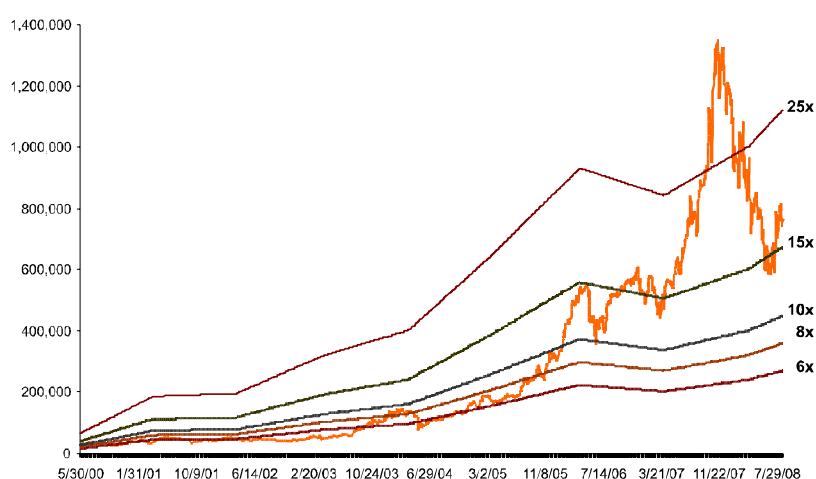
We apply two complementary methods to value BHEL: EV/EBITDA, which captures operating performance as well as debt for the company along with comparative peers, and discounted cash-flow analysis, which captures the net present value of the high growth in the future free cash-flow to equity. We have used the average of the two values to arrive at our fair value of INR1,282.

Relative valuation: EV/EBITDA multiple

In terms of relative valuation, we have used EV/EBITDA to PE, as it gives a better picture of operating margins, besides considering the debt on books. As BHEL is in expansion mode and is likely to employ both internal accrual and borrow debt, we believe it would be a better indicator than PE, though we have compared the PE range in which the stock is presently trading, and how it fared in similar periods of the cycle.

We have looked into the data from May 2000 to till date to understand various ranges in which the stock has been trading at different cycles.

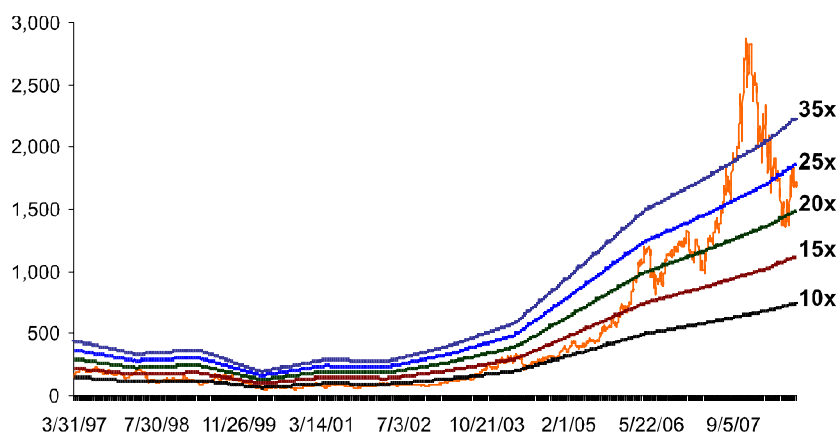
EV/EBITDA chart since May 2000



Source: Bloomberg, Antique

Over the period, the stock has traded from a wide range of 4x-25x of EV/EBITDA, which clearly signals the cyclical nature of the industry. The cyclical nature of the industry is also exhibited in the PE band chart, which shows that the band, over the last 10 years, has been from 8x-35x. Till September 2005, the company had traded below 15x its one-year forward earnings.

PE chart



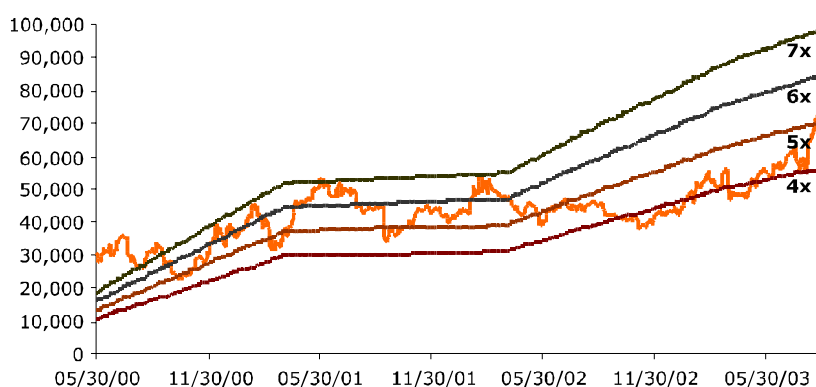
Source: Bloomberg, Antique

From May 2000 till September 2003, BHEL had traded in the range of EV/EBITDA of 4x-7x. This was the time when the addition of power equipment in the country was very less, and the company had an order book to sales ratio in the range 1.5x-2.5x. We believe this was among the lowest ratios for the company. Its performance can very well be ascertained from y-o-y growth figures of GDP, IIP and capital goods, in those 3 years.

YoY growth %	FY01	FY02	FY03
GDP	4.4	5.8	3.8
IIP	5.1	2.6	5.8
Capital goods	1.7	-3.4	10.5

Source: Antique

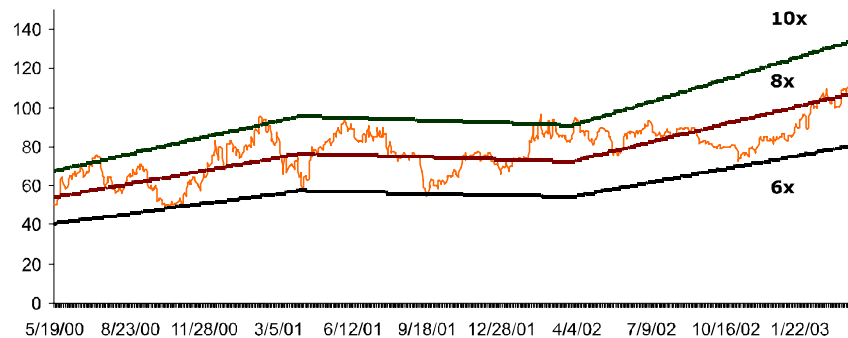
EV/EBITDA chart from May 2000 to July 2003



Source: Bloomberg, Antique

During the same period, BHEL had traded in the PE band of 6x-10x for the majority of the time.

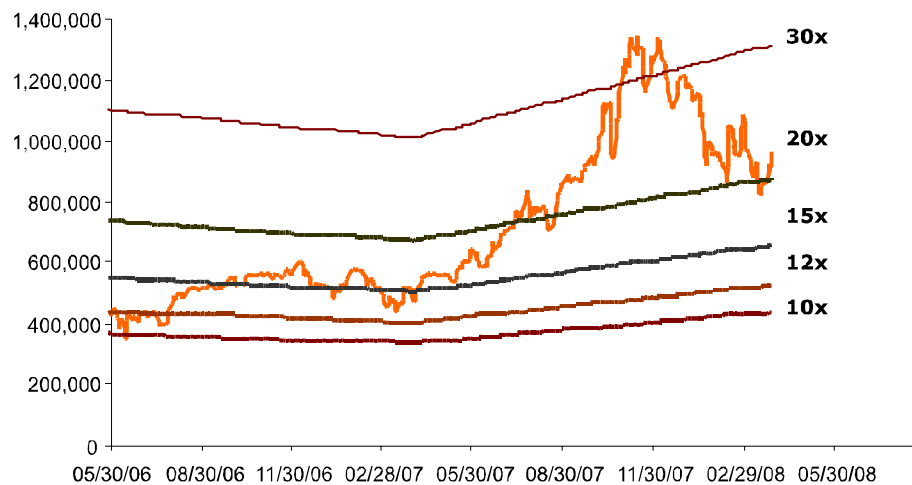
PE chart from May 2000 to January 2003



Source: Bloomberg, Antique

Since May 2005, the stock has been on a bull run, buoyed by the burgeoning order backlog. The order backlog has gone up from 2-2.5 levels to 3.5-4x levels in the recent past.

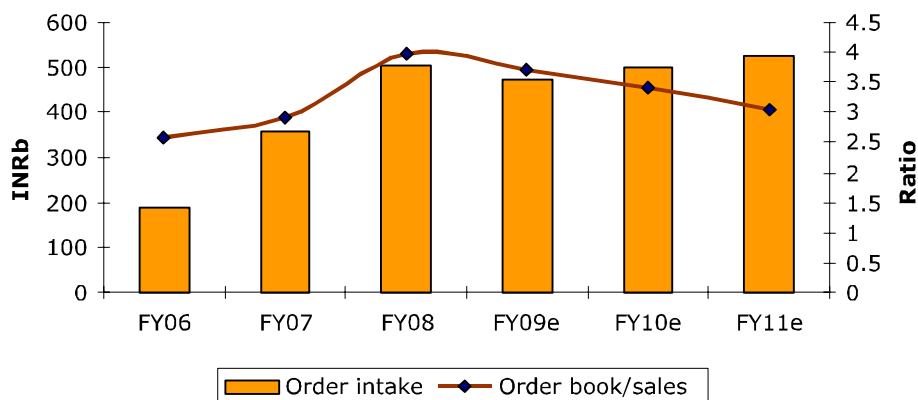
EV/EBITDA chart from May 2005



Source: Bloomberg, Antique

In the present scenario, which we have mentioned earlier in our report, the macro environment is not conducive to high growth in the power sector. We should better look into a realistic ratio, rather than the two above-given scenarios. Its Asian and European peers are trading at 9.2x and 8.1x FY10e EV/EBITDA respectively. We believe an EV/EBITDA of 10x would give the stock a correct valuation, as we estimate the order book to sales ratio to fall in the near future as shown in the figure below.

Order intake and Order book/sales



Source: Antique

The figure above shows that there would not be much growth in the order intake for the company in the next 2-3 years, though its production capacity would increase from 10,000 MW to 15,000 MW by FY11e. Based on this, we arrive at the fair price of INR1,363.

DCF valuation: To capture its capital-intensive business

Generally, due to the cyclical nature of the industry, valuations of engineering firms are done on a relative basis, i.e., PE or EV/EBITDA multiples. In the case of BHEL, on account of the visibility in terms of revenues (on the back of its huge order backlog) in the medium term, we have used the discounted cash-flow to equity to arrive at the fair value. In addition, it is investing heavily in expanding its capacity. Such capital-intensive business could be valued suitably with DCF valuation. The company has been present in the space for over 5 decades, and has also shown dominance in the power market, which makes us assign a terminal value, which would not be the case for small players.

Our assumptions for DCF and the fair value of INR1,200 are shown below.

	FY09e	FY10e	FY11e	FY12e	FY13e	FY14e	FY15e	FY16e
Net profit	32,493	40,169	50,111	54,501	65,038	74,377	78,970	87,133
Depreciation	3,717	4,587	5,645	6,245	6,845	7,445	7,745	7,745
Changes in working capital	16,528	(3,026)	(6,183)	(615)	(685)	(668)	(435)	(482)
Capex less debt repayment	(15,000)	(25,000)	(15,000)	(15,000)	(15,000)	(15,000)	(5,000)	(5,000)
Free cash flow to equity	37,738	16,730	34,573	45,132	56,198	66,154	81,280	89,396
Discounted cash flow	35,268	13,654	24,645	28,097	30,556	31,414	33,709	32,380
Risk free rate	8.5%							
India market risk premium	5.0%							
Beta	1.20							
Cost of equity (CAPM)	14.5%							
Terminal growth rate	5.0%							
Terminal value (INR)	357,884							
Fair value (INR m)	587,607							
Outstanding shares (m)	490							
Fair value per share (INR)	1,200							

Source: Antique

Sensitivity analysis:

Valuation of a company is always affected by sudden changes in various parameters, which impact its growth or margins. To assess the impact of these factors on its valuation, we have made an attempt to gauge the impact of changes in a few factors on its DCF value.

Sensitivity of our DCF to terminal growth rate and cost of equity

Our terminal growth is based on the assumption of a long-term GDP growth of 5%. We have also shown the sensitivity of CoE and terminal growth to our fair price. The value ranges from INR1025 to INR1,538.

1,200	4.0%	4.5%	5.0%	5.5%	6.0%
12.5%	1,286	1,337	1,395	1,461	1,538
13.5%	1,200	1,241	1,286	1,337	1,395
14.5%	1,131	1,164	1,200	1,241	1,286
15.5%	1,073	1,101	1,131	1,164	1,200
16.5%	1,025	1,048	1,073	1,101	1,131

Sensitivity of BHEL's DCF to sovereign yield and beta of stock

The sovereign yield (Rf) has been on the rise in the recent past with tight macro environment. We have assumed Rf as 8.5% and a Beta of 1.2. The sensitivity gives a range of INR967 to INR1,1563.

1,200	7.5%	8.0%	8.5%	9.0%	9.5%
1.00	1,563	1,455	1,360	1,276	1,200
1.10	1,455	1,360	1,276	1,200	1,133
1.20	1,360	1,276	1,200	1,133	1,072
1.30	1,276	1,200	1,133	1,072	1,017
1.40	1,200	1,133	1,072	1,017	967

Dividend policy: A comfortable payout ratio

BHEL has been paying dividend conservatively with a 30% payout. It is not paying enough as compared with its cyclical nature and low capital intensity of its business. It has more than enough cash to acquire a competitor and meet organic growth through capital expenditure. As the management has expressed its comfort with the current rate, we have maintained the current 30% payout in our estimates for the near future. Its dividend yield is good as compared with Chinese or global peers.

Peer comparison:

The table below shows some of the key peers. We have included key Asian and European players, as they would be primarily vying for the pie in the country.

Company	Ticker	Currency	Last Prices	Mcap \$ bn	PE		EV/EBITDA		DIV Yield	
					2009e	2010e	2009e	2010e	2009e	2010e
BHEL	BHEL IN Equity	INR	1,766	19.5	26.6	21.5	18.1	14.0	1.1%	1.4%
Larsen and Toubro	LT In Equity	INR	2,671	17.6	25.1	19.3	19.1	14.4	0.8%	0.9%
ABB	ABB in equity	INR	875	4.2	28.9	21.0	19.4	14.3	0.5%	0.6%
Siemens	SIEM in equity	INR	555	4.2	30.4	23.5	19.4	14.7	1.1%	1.3%
Crompton Greaves	CRG in equity	INR	269	2.2	19.6	15.1	11.8	9.5	0.8%	1.0%
Areva	ATD in equity	INR	1,608	1.7	28.2	21.9	17.3	13.2	0.5%	0.7%
Indian Average				47.8	26.5	19.4	18.4	13.7	1%	1%
Siemens	SIE GR Equity	EUR	73	97.0	16.4	11.1	8.5	6.8	2.5%	2.9%
ABB	ABB SS Equity	USD	160	56.5	14.0	12.7	8.0	7.2	0.3%	0.4%
Alstom	ALO FP Equity	EUR	69	28.4	17.4	13.7	9.8	8.2	1.6%	2.0%
Areva	CEI FP Equity	EUR	690	35.4	26.6	22.3	15.1	12.8	1.4%	1.4%
Europe Average				217.3	17.6	13.7	9.6	8.1	1.6%	1.9%
Shanghai Electric	2727 hk equity	CNY	3	4.7	11.4	10.9	5.1	5.0	2.2%	2.4%
Dongfang electric	1072 hk equity	CNY	23	3.0	20.4	8.7	6.9	4.7	0.7%	1.2%
Harbin	1133 hk equity	CNY	8	1.5	7.0	6.9	2.9	3.0	1.5%	1.4%
Doosan heavy	034020 ks equity	KRW	79,900	7.4	17.5	13.5	17.2	14.1	0.7%	0.7%
MHI	7011 jt Equity	JPY	532	16.6	28.7	26.7	10.4	9.5	1.1%	1.1%
Asia Average				33.1	22.0	19.0	10.5	9.2	1.2%	1.2%

Source: Bloomberg, Antique

Comparison with Chinese players: The comparison that matters

Key competitors for BHEL would be Shanghai Electric, Dongfang Electric and Harbin, as these players have large portions of their revenue from the power generation equipment. Currently, these players are trading at FY10e EV/EBITDA in the range of 3-5x. These players have also entered the Indian market, and we believe they would be in head-on competition with BHEL for almost all bids in the country. Further, even on the PE basis, BHEL, which is trading at 21.5x FY10e, looks expensive as compared with these three players, which are trading in the range of 7-11x.

Risks to our call

Better macro environment: In our report, we have considered the high rate and high inflation regime, which is expected to continue for the next 12 months. We believe this is one of the major reasons for the slow pace of funds to the power sector. On back of this, we have estimated slow growth in order book for the company, and hence the lower order book to sales ratio. If the current tight macro environment eases off earlier, and the environment becomes conducive to investment in the infrastructure sector, there could be a revision in our target price.

Commodity prices: We have maintained that commodity prices would not soften in the near future, which would adversely impact the operating profit of the company. If prices of ferrous, non-ferrous and imported components come down drastically, BHEL could gain from older contracts, and hence its margin would improve.

Regulatory changes: BHEL has been the leader in the country in terms of providing power equipment. Any regulatory changes, which would give the company an advantage over global players in the bidding process, would be a risk to our call since we have estimated that going forward BHEL would lose its market share from the present 65% to 50% by FY12e.

Financials (INR m)

Profit and Loss Account

Year ended 31st March	2007	2008	2009e	2010e	2011e
Revenues	177,955	205,696	260,059	324,267	392,767
Expenses	142,188	168,258	215,552	266,824	320,728
EBITDA	35,767	37,438	44,507	57,442	72,039
Depreciation & amortisation	2,730	2,973	3,717	4,587	5,645
EBIT	33,037	34,465	40,790	52,856	66,394
Interest expense	433	354	506	1,221	1,936
Other income	4,751	10,194	8,948	9,227	11,467
Profit before tax	37,355	44,305	49,232	60,862	75,925
Taxes incl deferred taxation	13,214	15,710	16,739	20,693	25,815
Profit after tax	24,141	28,595	32,493	40,169	50,111
Adjusted profit after tax	24,146	26,404	32,493	40,169	50,111
Recurring EPS (INR)	49.3	53.9	66.4	82.1	102.4

Balance Sheet

Year ended 31st March	2007	2008	2009e	2010e	2011e
Share Capital	2,448	4,895	4,895	4,895	4,895
Reserves & Surplus	85,435	102,785	125,353	153,252	188,057
Networth	87,883	107,680	130,248	158,148	192,952
Debt	893	2,893	4,893	13,893	15,893
Capital Employed	88,776	110,573	135,142	172,041	208,845
Gross Fixed Assets	41,351	59,083	69,083	89,083	99,083
Accumulated Depreciation	(30,878)	(34,143)	(37,860)	(42,447)	(48,092)
Net Assets	10,473	24,940	31,223	46,636	50,991
Capital work in progress	3,025	-	10,000	10,000	500
Investments	83	83	83	83	83

Current Assets, Loans & Advances

Inventory	42,177	51,995	68,294	85,460	105,014
Debtors	96,958	108,235	133,546	167,113	205,348
Cash & Bank balance	58,089	63,575	88,389	106,849	142,616
Loans & advances and others	11,409	14,397	20,008	30,044	44,302

Current Liabilities & Provisions

Creditors	118,979	133,667	188,437	235,801	289,753
Other liabilities & provisions	25,222	28,336	37,315	47,695	59,607
Net Current Assets	64,432	76,199	84,484	105,970	147,920
Deferred tax assets/(liabilities)	9,352	9,352	9,352	9,352	9,352
Misc. Expenses	-	-	-	-	-
Application of Funds	87,364	110,573	135,142	172,041	208,845

Per share data

Year ended 31st March	2007	2008	2009e	2010e	2011e
No. of shares (m)	244.8	489.5	489.5	489.5	489.5
BVPS (INR)	179.5	220.0	266.1	323.1	394.2
CEPS (INR)	54.9	60.0	74.0	91.4	113.9
DPS (INR)	14.1	17.8	20.3	25.1	31.3

Margins (%)

Year ended 31st March	2007	2008	2009e	2010e	2011e
EBITDA	20.1%	18.2%	17.1%	17.7%	18.3%
EBIT	18.6%	16.8%	15.7%	16.3%	16.9%
PAT	13.6%	12.8%	12.5%	12.4%	12.8%

Key Assumptions

Year ended 31st March	2007	2008	2009e	2010e	2011e
Capacity(MW)	10000	10,000	12,000	15,000	15,000
Order intake-Power(INRm)	286,815	412,173	361,664	367,173	373,009
Order intake-Industrial(INRm)	69,615	90,477	108,572	130,287	149,830
Order intake-International(INRm)	19,030	20,106	24,127	27,746	31,908
Ferrous (% of sales)	26.92%	25.55%	26.03%	26.13%	26.78%
Non-ferrous (% of sales)	3.99%	4.09%	4.34%	4.53%	4.64%
Power cost (% of sales)	1.50%	1.43%	1.43%	1.53%	1.63%
Salaries and Wages increase(%)	26%	36%	30%	15%	10%

Cash Flow Statement

Year ended 31st March	2007	2008	2009e	2010e	2011e
EBIT	33,037	34,465	40,790	52,856	66,394
Depreciation & amortisation	2,730	2,973	3,717	4,587	5,645
Interest expense	844	(354)	(506)	(1,221)	(1,936)
(Inc)/Dec in working capital	5,976	(6,281)	16,528	(3,026)	(6,183)
Tax paid	(15,340)	(15,710)	(16,739)	(20,693)	(25,815)
Cash flow from operating activities	27,247	15,092	43,790	32,502	38,106
Capital expenditure	(4,360)	(15,000)	(20,000)	(20,000)	(500)
Inc/(Dec) in investments	-	-	-	-	-
Income from investments	3,200	10,194	8,948	9,227	11,467
Cash flow from investing activities	(1,160)	(4,806)	(11,052)	(10,773)	10,967
Inc/(Dec) in share capital	-	2,448	-	-	-
Inc/(Dec) in debt	(5,286)	1,486	2,000	9,000	2,000
Dividends paid	(4,051)	(8,734)	(9,925)	(12,269)	(15,306)
Cash flow from financing activities	(9,337)	(4,800)	(7,925)	(3,269)	(13,306)
Net cash flow	16,749	5,486	24,813	18,460	35,767
Opening balance	41,340	58,089	63,575	88,389	106,849
Closing balance	58,089	63,575	88,389	106,849	142,616

Growth Indicators

Year ended 31st March	2007	2008	2009e	2010e	2011e
Revenue	27%	16%	26%	25%	21%
EBITDA	40%	5%	19%	29%	25%
PAT	44%	9%	23%	24%	25%
EPS	44%	9%	23%	24%	25%

Valuation (x)

Year ended 31st March	2007	2008	2009e	2010e	2011e
PE	35.8	32.7	26.6	21.5	17.3
P/BV	9.8	8.0	6.6	5.5	4.5
EV/EBITDA	22	21.5	18.1	14.0	11.2
EV/Sales	4.5	3.9	3.1	2.5	2.0
Dividend Yield (%)	0.8%	1.0%	1.1%	1.4%	1.8%

Financial Ratios

Year ended 31st March	2007	2008	2009e	2010e	2011e
RoE	27%	25%	25%	25%	26%
RoCE	37%	31%	30%	31%	32%
Debt/Equity (x)	0.0	0.0	0.0	0.1	0.1
EBIT/Interest (x)	76.2	97.3	80.6	43.3	34.3

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