Detailed Report | 12 January 2015
Sector: Capital Goods

BHEL

Emerging from the eclipse

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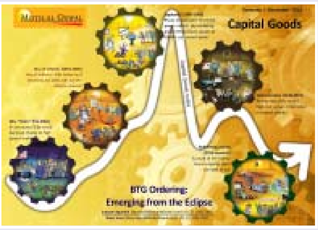

BTG Ordering: Emerging from the eclipse

- Our statistical analysis of the macro data-points on demand and supply dynamics in the power sector suggests that the new cycle of powergen capex could commence over the next 12-15 months. The project awards journey from 6-7gw pa in FY14-15 to 10-12gw pa in FY16-17 and then ~20-24gw pa provides interesting possibilities to equipment manufacturers.
- From a market structure that was threatened by: i) intense competition from Chinese, Koreans and Japanese companies ii) and, possibility of ~5-6 players in the domestic market, BTG sector is undergoing a metamorphosis. Imported products have witnessed erosion of competitiveness, while the domestic players are engaging into disciplined 'aggression'.

About the Cover

- We track the journey and evolution of the Indian Power sector over the last 20 years, and juxtapose the same on the Capital Goods Index. Electricity Act 2003 was a watershed event, a panacea for the economic viability. Between 2007 and 2009, several events acted as tipping points that fuelled a fresh wave of private investments in power generation. However, 'reversal to mean' happened rather fast, given several challenges and constraints.
- Over the last 12-18 months, there have been a series of attempts by the government to address various contentious issues surrounding SEB finances, fuel availability, tariff review, etc. The progress has been encouraging, and an eclipse always ends.

BHEL: Emerging from the eclipse

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Prices as on 9 January 2015

Investors are advised to refer through disclosures made at the end of the Research Report.

COAL AUCTION: A new beginning

- Coal block auction is set to take off, with 74 blocks in round-1. These have production potential of 216m tons. Of this, 70% is for the Power sector.
- Our analysis of mines/end-use projects highlights that demand is far higher than the resources being offered in round-1. Sponge Iron units are better placed than IPPs on coal demand-supply. However, the additional 130 blocks to be auctioned later on hold promise, with 4x resource.
- Evaluation of bidders under the auction route would hinge on technical qualifications for the Power sector and on bid price for other sectors. For the Power sector, it would be more akin to "allotment" of blocks through a scientific method.
- More clarity is required on key variables like pre-requisite of PPA, end-use price cap (for Power sector), ownership rights, and "optimum" resource utilization. Also, the process may lead to higher legal complications/re-opening of PPAs. However, we believe coal block auction bodes well for the Power sector in the long term.

BHEL

BSE Sensex	S&P CNX
27,458	8,285

CMP: INR255 | **TP: INR325 Upside 27%** | **Buy**

Stock Info

Bloomberg	BHEL IN
Equity Shares (m)	2,447.6
52-Week Range (INR)	292/146
1, 6, 12 Rel. Per (%)	2/4/24
M.Cap. (INR b)	624.1
M.Cap. (USD b)	10.0

Financial Snapshot (INR Billion)

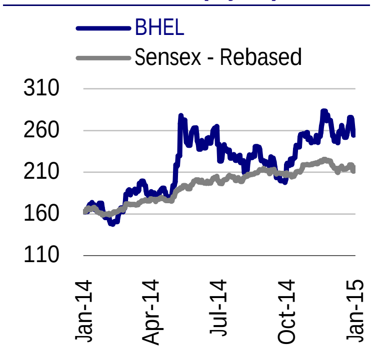
Y/E Mar	2015E	2016E	2017E
Net Sales	304.2	305.4	348.1
EBITDA	27.3	39.2	50.2
Adj PAT	19.4	31.2	44.5
EPS (INR)	7.9	12.7	18.2
EPS Gr. (%)	(45.8)	60.4	42.7
BV/Sh. (INR)	141.1	150.7	164.6
RoE (%)	5.8	8.7	11.5
RoCE (%)	8.6	12.7	16.6
P/E (x)	32.1	20.0	14.0
P/BV (x)	1.8	1.7	1.5

Shareholding pattern (%)

	Dec-14	Sep-14	Dec-13
Promoter	63.1	63.1	67.7
DII	17.3	16.9	12.0
FII	16.0	15.7	15.6
Others	3.7	4.3	4.7

FII Includes depository receipts

Stock Performance (1-year)



Emerging from the eclipse

Cyclical factors support recovery; Expanding product offerings

Power segment BTB shows uptick; EPC pricing trends stabilize

- For BHEL, power segment BTB declined from peak levels of 5.2x in 3QFY09 to 2.3x in mid-FY14, and has since improved to 3.1x in 2QFY15. Our macro analysis suggests that normative ordering will stand at ~20-24gw pa (FY19 power demand at 1.5BUs). The journey from 6-7gw pa in FY14-15 to 10-12gw pa in FY16-17 and then ~20-24gw pa provides interesting possibilities.
- Recent pricing trends in EPC contracts suggest stabilization, albeit at lower levels. From a market structure that was threatened by: i) intense overseas competition ii) and possibility of five to six players in domestic market, the BTG manufacturing segment has consolidated, with just around three to four serious players commissioning manufacturing facilities.
- BHEL expanded offerings to capture a larger share in project execution. Cost structure has also been corrected with various initiatives, including ~90% indigenization levels for supercritical boilers (versus ~70% in bulk tender).
- Company recently bagged projects on nomination basis and is also leveraging business models to utilize cash reserves by taking equity stakes. Further, new opportunities being tapped in industry segment, including Transportation, Solar Cell Manufacturing and Defense (recent collaboration for Six Scorpene submarines) etc have also expanded the pie.

Strong operating leverage, cyclical factors aid recovery

- BHEL is strongly exposed to cyclical factors: i) contribution margins at ~42% versus expected EBITDA margin of 12.4% (adjusted) in FY14, leading to a meaningful operating leverage, ii) core NWC stable at 200 days; cyclical factors of retention money (at 181 days in FY14 versus 55-60 days in FY07-09) and customer advances (deteriorated from 63% of revenue in FY09 to 38% in FY14), that impacted reported NWC are expected to normalize as we expect BTB to increase from 3.1x currently to 3.8x in FY16E.
- We expect operating cash flow to improve from an average of ~INR40b pa in FY13-14 to INR82b pa in FY15E-17E. Thus, net cash is likely to increase from INR92b in FY14 to INR286b in FY17E (~45% of current market cap). In FY14, operating cash flow improved to INR54.2b versus INR24.4b in FY13.

BTB inched up to 3.1x in 2QFY15: a key trend driving cyclical factors

- We maintain a **Buy** with a revised target price of INR325/sh (PER of 18x FY17E). Our target multiple of 18x is based on average one-year forward PER during FY06-11, a period when the power sector ordering was robust.
- The key variables to watch out are the impact of the Pay Commission recommendation (effective Jan 2017) and could be an important swing factor. Another important variable is the coal mine auctions.

BHEL: What went wrong…What company did…What is the underlying potential?

Euphoria!! (2007-2009)
Phase of excesses! Perennial power deficit! Sky-rocketing prices! BTG project awards at 30GW+ pa...record levels

What has company done in last five years?

- Expanded capacity from 7GW to ~20GW. Also built capabilities for EPC execution, expanded offerings (in terms of Auxillaries / Balance of Plant to capture increasing part of the value addition), rationalized cost structure, improved operational efficiencies, etc.
    - Attempt to broad-base revenues in segments like Transportation (Greenfield unit for MEMU, expanding locos capacity), Defence Renewable (solar manufacturing), Power T&D (HVDC, STATCOM, 765kva transformers, GIS, etc). R&D spend increased to 2.8% of revenues in FY14, several projects expedited on a Mission mode.

What went wrong in the five years?

- Industry ordering declined from peak levels of ~30-35GW pa during FY07-10 to ~6-10GW pa levels during FY12-15.
    - Post NTPC bulk tender, BTG prices declined by ~20-25% over the last 4 years; despite increased commodity prices. Competitive intensity was severe with foreign players contributing 43% of the current projects under construction in the country.
        - Industry business failed to provide support in a constrained environment as ~60% of the revenues were largely from Captive Power plants.

Self-correction (2010-2014)
Reality hits! SEBs curtail high-cost power. Hibernation in project awards

What is the underlying potential?

Meaningful operating leverage, both on P&L (staff costs at 21% of revenues in FY15E, vs 11.4% in FY12) and Balance Sheet (core NWC stable at ~200-210 days, while reported NWC at 154 days in FY14 vs negative 24 days in FY09). Expect net cash to increase from INR92b in FY14 to INR286b in FY17E (~45% of mkt cap).

2007 — BHEL's PRICE PERFORMANCE — 2015

Project Pipeline Builds-up

Power segment BTB shows uptick; EPC pricing trends stabilize

We expect industry BTG project awards to improve from just ~6-7gw pa in FY14-15E to ~10-12gw pa during FY16E-17E, leading to a 43% increase in BHEL's power sector intake during FY16E-17E (versus FY12-15 levels). Company's power segment BTB declined from peak levels of 5.2x in 3QFY09 to 2.3x in mid-FY14, and has since improved to 3.1x in 2QFY15.

Our macro analysis suggests that normative industry ordering stands at ~20-24gw pa (power demand at 1.5BUs in FY19E). The journey from 6-7gw pa in FY14-15E to 10-12gw pa in FY16E-17E and then at ~20-24gw pa provides interesting avenues.

Expect normative BTG ordering at ~20-24gw pa, award pipeline in next 15-18 months likely at 15gw+

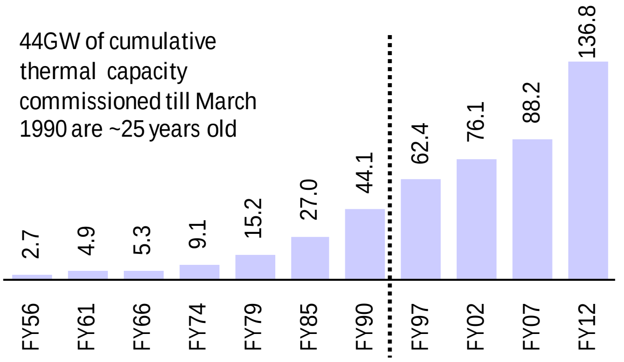
- BTG pipeline is showing initial signs of recovery with projects of ~15gw+ likely to be awarded in the next 15-18 months. This could be a tipping point, particularly for the equipment manufacturers, given that industry capacity for super-critical boilers and turbines stands at ~21-24gw pa.
- We expect NTPC to award ~5.5gw of projects in next 15 months, including 1.3gw of Khargone / 2.6gw of Barethi (where four equipment manufacturer consortiums have submitted bids) and 1.3gw of Katwa rebid (Doosan was earlier L1).
- We expect possible project awards of ~5-7gw by the state sector from a pipeline comprising of: Maharashtra (4.6gw), Bihar (2.6gw), Uttar Pradesh (1.3gw), Tamil Nadu (1.3gw), Haryana (0.8gw), etc.
- In addition, Telangana / Andhra Pradesh are likely to potentially award ~8-10gw of new projects, of which we believe ~4-5gw can be awarded in the next 15 months. Telangana state government has recently awarded contracts to BHEL for 1.9gw of capacity at Kothagudem / Manuguru, and has entered into MOU to cumulatively award 6gw of projects. Telangana has also entered into MOU with NTPC to set up 1.6gw of capacity at Ramagundem. Similarly, Andhra Pradesh has entered into MOU with NTPC to set up 4gw of capacity at Pudimadaka (1,200 acres of land already allotted to NTPC). AP Genco is also planning to set up 2.4gw extension plants at three locations in Krishnapatnam, Vijayawada and Kothugundem.
- Central Government has recently approved automatic transfer of coal linkages from old and inefficient plants (more than 25 years old) in public sector to new supercritical plants, being set up in the same state. This also opens up interesting possibilities over the medium term.

Exhibit 1: Telangana Power Demand Supply – Severe Power Deficit

MUs	FY15	FY16	FY17	FY18	FY19
Energy Requirement	54998	63047	67902	77164	84496
Energy Availability (Existing Sources)	45795	45037	44030	43896	43754
Energy Deficit	-9203	-18010	-23872	-33268	-40742
Energy Deficit, %	**-16.7%**	**-28.6%**	**-35.2%**	**-43.1%**	**-48.2%**

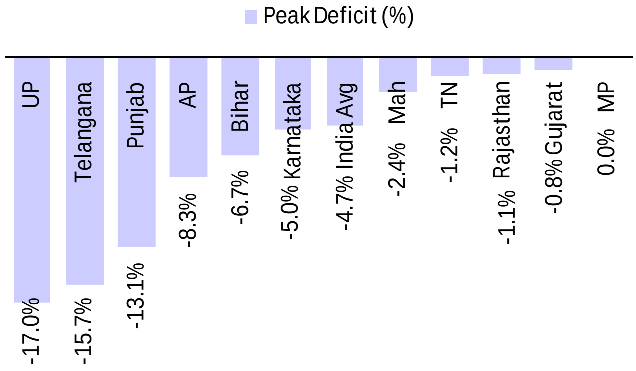
Source: Report of the Task Force on Energy, Govt of Telangana, Nov 2014

Exhibit 2: 44gw thermal capacity are ~25 years old, can potentially be replaced by supercritical plants (GW)



Source: CEA

Exhibit 3: Several states like UP, Telangana, Punjab, AP, Bihar, etc have large deficits



Data from April – Nov 2014; Source: CEA

We understand that a part of the coal mine auctions will be earmarked towards setting up Case 2 projects, which could add to the potential pipeline

Key states that are likely to award projects include Telangana, Andhra Pradesh, Tamilnadu, Maharashtra, Bihar, Uttar Pradesh, etc. Several of these states face power deficits, given the regional imbalances

Exhibit 4: Potential Pipeline of ~32GW to be awarded over next 2-3 years, largely from the Central / State sector

Project	Owner	Sector	Cap (MW)	Comments
Udangudi	TN Genco	State	1,320	BHEL is L1
Tuticorin		Private	525	BHEL is L1
Khargone	NTPC	Central	1,320	
Barethi	NTPC	Central	2,640	
Katwa	NTPC	Central	1,320	
Ramagundem	NTPC	Central	1,600	
Lakhisarai	Bihar (26%) - NTPC (74%)	Central	1,320	
Pudimadaka	NTPC	Central	4,000	
Ghatampur	Neyveli	Central	1,980	
Pirpainty	Bihar (26%) – NHPC (74%)	Central	1,320	
Gorakhpur	Nuclear Power	Central	1,400	Nuclear
Telangana		State	4,000	MOU with BHEL
Bhusawal	Mahagenco	State	660	
Chandrapur	Mahagenco	State	1,320	
Koradi	Mahagenco	State	1,980	
Latur	Mahagenco	State	1,320	
Krishnapatnam, Vijayawada, Kothugundem	Andhra Pradesh	State	2,400	
Panipat Thermal (Unit 9)	Haryana	State	660/800	
Orba Extension	UPRUVNL	State	600	
Hardauganj Extension	UPRUVNL	State	660	
Potential Pipeline			**~32,000**	

Source: MOSL, Company

Project pipeline builds up: BHEL also bags projects on nomination basis / intends to leverage cash reserves for equity stake to bag EPC contracts

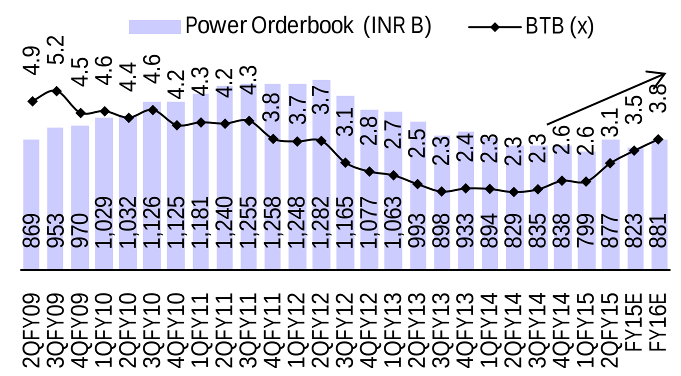
- BHEL has signed MoUs with states like Telangana (6gw), Andhra Pradesh, Karnataka etc to set up projects on a nomination basis. In Telangana, the company has already received Kothagudem project (800mw, INR38b) and is likely to receive Manuguru project (1.1gw, based on Indiabulls equipments) shortly on nomination route. Also, the execution for these projects is shorter, at 36 months for Kothagudem and 24 months for Manuguru project.
- BHEL also intends to utilize its strong cash position (INR87b in Sept 2014, expect INR163b in Mar 2015) by taking 26% equity stake in state genco projects for

bagging EPC contracts. In the past, BHEL had invested INR3.3b for a 26% stake in Raichur Power (1.6gw) and the project is likely to be commissioned in FY16. Also, an 800mw project on similar terms in Karnataka has also been signed. BHEL has proposed similar models to other states like Andhra Pradesh, Puducherry, Gujarat, Uttar Pradesh etc and the management stated that there is renewed interest on such arrangements.

- BHEL, in a consortium with Power Finance Corporation (for debt syndication), has bagged Ennore SEZ project (1,320mw, INR78b). Here, the competition was largely Chinese players, given the need to provide equipment financing during the construction period.

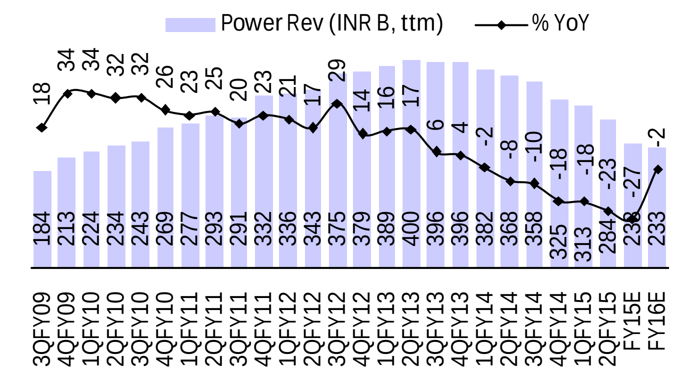
BHEL's management, in the recent concall, stated that the company is already L1 in ~3gw of projects including: i) 1,320mw Udangudi (EPC, ~INR78b), ii) 500mw Tuticorin (BTG, INR12b) and iii) 1gw of Pakal DUL Hydro power with Patel Engg (~INR90b JV share).

Exhibit 5: Expect BTB to bounce back to 3.8x in FY16E, from lows of 2.3x in 2QFY14



Source: MOSL, Company

Exhibit 6: Power segment revenue to decline 27% YoY in FY15E/2% in FY16E, reflecting muted intake in FY12-15E (ttm)



Source: MOSL, Company

BHEL expands offerings to increase opportunity pie in thermal power

Over the past three years, BHEL has expanded its offerings in the power segment meaningfully and will also enable it to capture a larger share in project execution, going forward.

- Company is expanding Power sector portfolio by adding Flue-Gas Desulphurisation, Water Management System, Air Cooled Condenser and other Balance of Plant Systems. Also, the critical piping and heavy boiler parts factory was commissioned in Trichy in FY14.
- Focusing to enhance EPC projects in thermal (coal) business mix.
- Strengthened capabilities in BOP segment such as Transformers, Switchyard, Coal Handling, Ash Handling, Water Treatment, Civil Works etc.
- BHEL is exploring new business models in partnership for power plant developers for upcoming UMPPs/Case 2 projects. Debt financing for new projects in partnership with financial institutions is also underway.

BHEL is expanding the power sector portfolio by adding Flue-Gas Desulphurization, Water Management System, Air Cooled Condenser and other Balance of Plant Systems

Exhibit 7: BHEL has expanded power sector offerings meaningfully over past three years

Year	Increased Offerings, Technology Licensing's, etc
FY14	Commissioned Critical piping / Heavy Boiler parts factory at Trichy
FY14	Super critical boiler which can switch 100% indigenous / imported coal
FY13	Expand offerings in nuclear for BOP, Control centre instrumentation etc
FY13	Marketing of Coal Handling & Ash Handling Plants as independent systems
FY13	Enterprise Framework Agreement with Shell for Gas Turbine Generator
FY13	Technology Licensing with Mitsubishi Heavy Inds, Japan for Flue Gas Desulphurization
FY12	Introduced new ratings 300MW sets
FY12	Technology Licensing with GE India Industrial for Water Management System
FY12	Stabilization of CFBC boiler technology (250MW /125MW boilers)
FY12	Developing Power plant EPC capabilities

Source: MOSL, Company

Improved 'market structure' for domestic manufacturers

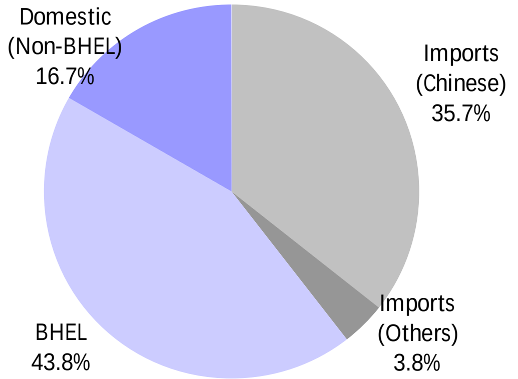
Possible project awards of 20gw in the next 12-15 months will be an important driver, given that industry capacity for super-critical boilers and turbines stands at ~21-24gw pa

From a market structure that was threatened by: i) intense competition from Chinese, Koreans and Japanese companies and ii) possibility of around five to six players in the domestic market, the BTG manufacturing sector is undergoing a metamorphosis.

- **Imported products witness erosion in competitive intensity:** Of the 88gw capacity under construction as per CEA, share of Chinese and other imported equipments stands at 35.7% and 3.8% respectively. This is a large market pie being captured by imported products. Going forward, we believe the competitive intensity of such players will be largely eroded given i) currency movements (sharp 85% currency depreciation since FY09), ii) imposition of 21% import duty in 2012 leading to differential of ~14% for domestic players and iii) commencement of ~21-24gw of supercritical BTG manufacturing capacities in India and the intense competition have led to 15% price correction in boilers and 20% in turbines under bulk tender 2 versus bulk tender 1. As per CEA, the share of imported equipments in projects under construction has already declined from 50.4% in Dec 2012 to 39.5% in Sept 2014.
- **Disciplined competitive aggression among domestic players:** The domestic market structure is also showing resemblance of stability, with three to four players each in boilers and turbines setting up manufacturing capacities of ~21-24gw pa for supercritical projects. Based on interactions with industry players, we note that there has been limited progress in setting up integrated manufacturing capacities for supercritical projects by few players like BGR-Hitachi, GB Engineering - Ansaldo, ISGEC - Foster Wheeler, Cethar - Riley etc. Thus, the demand-supply dynamics seem favorable when juxtaposed with our expectations of normative BTG pipeline of ~20-24gw pa. Pricing has stabilized in recent bids, albeit at lower levels.

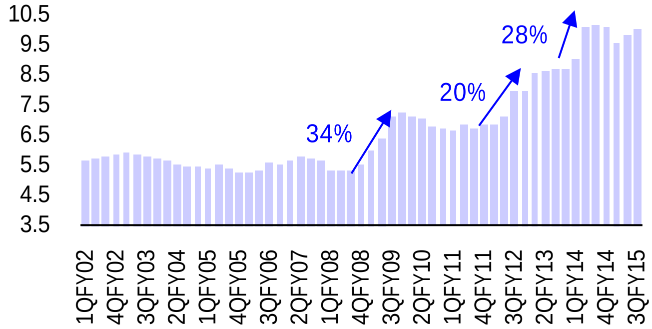
Imported products witness erosion of competitive dynamics

Exhibit 8: Capacity under construction: Imports (Chinese and others) constitute 43% of capacity



Source: CEA

Exhibit 9: INR v/s CNY: currency movement has been sharp, impacting competitiveness of imported products



Source: Bloomberg

Our calculation suggests a net gain of ~14% for domestic manufacturers

Exhibit 10: Imposition of 21% import duty in 2012 led to differential of ~14% for domestic players

	Earlier			From 2012		
	Duty	**BHEL**	**Chinese**	**Duty**	**BHEL**	**Chinese**
Domestic		650	-		650	-
Imports	35%	350	1,000	35%	350	1,000
Value		**1,000**	**1,000**		**1,000**	**1,000**
RM Costs	0%	325			325	
Customs (%)	0%	-	-	5%	18	50
Excise (Adj for Cenvat)	12%	78	-	12%	120	120
Sales Tax, etc	4%	29	-	4%	46	47
Duty Impact		**107**	**-**		**183**	**217**
Net Impact		**10.7%**			**-3.4%**	
Net Gain (for domestic mfgrs)		**14.1%**				

Source: MOSL, Company

Domestic competitive intensity stabilizes

Project award pipeline of ~16-20gw pa could lead to optimum capacity utilization

Exhibit 11: Supercritical installed capacity at ~21-24gw

	Boilers		Turbines	
	gw	**INR b**	**gw**	**INR b**
BHEL	12.0	na	12.0	na
L&T - MHI	4.0	8.7	4.0	12.9
Thermax – Babcock Wilcox	3.0	8.2		
Doosan	2.2	Na		
JSW - Toshiba			3.0	9.8
Bharat Forge - Alstom			5.0	18.0
Total	**21.2**		**24.0**	

Source: MOSL, Company

Most of the capacities are operational, while Bharat Forge – Alstom will be commissioned in early 2015

Exhibit 12: Large part of domestic capacity is already commissioned

	Stake	Location	Commis-sioning	Remarks
BHEL	100	TG - Haridwar; Boilers - Trichy	2010	
L&T - MHI	51:49	Hazira	2010	Can ramp-up to 6GW quickly
Thermax - BW	51:49	Baroda	2014	
Doosan	100	Chennai	na	
JSW - Toshiba	25:75	Chennai	2011	Expanding to 6GW; construction commenced FY13
Bharat Forge - Alstom	49:51	Gujarat	2015	Shifted from Mundra to Sanand; to be commissioned shortly

Source: MOSL, Company

EPC pricing ranged between INR38.5m/mw to INR43.1m/mw over the last few years

Exhibit 13: Pricing trends have stabilized in recent bids (EPC bids, excluding civil works)

Project	mw	Period	INR m/mw	Winning bid
Hinduja National Power	1040	4QFY10	38.5	BHEL
Yermarus, Karnataka	1600	1QFY11	39.4	BHEL
Suratgarh, Rajasthan	1320	4QFY13	41.9	BHEL
Chhabra, Rajasthan	1320	4QFY13	43.1	L&T
North Karanpura, NTPC	1980	4QFY14	39.9	BHEL
Malwa, MP	1320	2QFY15	38.6	L&T
Kothagudem, Telangana	800	3QFY15	47.6*	BHEL

* Dual Feed Flexible Boiler, including civil works

Source: MOSL, Company

Costs have also moderated; improved indigenization levels

BHEL, over the last few years, has strengthened its positioning through increased localization of super critical technologies, higher in-house value additions (by expanding the product offerings), increased use of technology like reverse auctions for vendor procurements, design optimization efforts, modernization of manufacturing facilities etc. For supercritical boilers, indigenization levels have reached ~90% in the recent North Karanpura project (versus 28% in the bulk tender projects), which is also a vital achievement.

Exhibit 14: Indigenization levels in supercritical boilers have reached near 90%

Project	mw	Award	Boiler	Alstom Sourcing		
			(INR m)	(INR m)	(% sourcing)	(INR m/mw)
Mauda	1,320	Mar-12	18,550	5,300	28.6%	4.02
Gajmara	1,600	Mar-13	26,240	7,153	27.3%	4.47
North Karanpura	1,980	Mar-14		3,386	~10-12%	1.71

Source: MOSL, Company

Exhibit 15: Macro Power Demand / Supply analysis suggests that the next cycle of powergen capex to kickstart in the next 12-18 months

	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15E	FY16E	FY17E	FY18E	FY19E
Power Requirement												
GDP	9.3%	6.7%	8.6%	8.9%	6.7%	4.5%	4.9%	5.8%	6.5%	7.5%	8.0%	8.0%
Elasticity to GDP growth	0.8	0.8	0.8	0.4	1.3	1.4	0.1	1.5	1.3	1.1	1.1	1.1
Requirement (MUs)	**739,345**	**777,039**	**830,300**	**861,591**	**937,199**	**995,557**	**1,002,257**	**1,088,702**	**1,177,159**	**1,274,274**	**1,386,410**	**1,508,415**
Demand Growth	7.1%	5.1%	6.9%	3.8%	8.8%	6.2%	0.7%	8.6%	8.1%	8.3%	8.8%	8.8%
Capacity (MW)												
Hydro	35,909	36,878	36,863	37,567	38,990	39,491	40,531	41,901	43,701	45,701	47,201	48,701
Coal	76,049	77,649	84,198	93,198	112,022	130,221	145,273	160,273	174,773	190,273	206,273	222,273
Gas	14,656	14,877	17,056	17,706	18,381	20,110	21,782	21,782	21,782	21,782	21,782	21,782
Diesel	1,202	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Nuclear	4,120	4,120	4,560	4,780	4,780	4,780	4,780	4,780	6,180	7,580	7,580	7,580
Renewables	11,125	13,242	15,521	18,455	24,503	27,542	29,463	32,463	35,963	39,463	42,963	46,463
Total	**143,061**	**147,965**	**159,398**	**173,626**	**199,877**	**223,344**	**243,029**	**262,399**	**283,599**	**305,999**	**326,999**	**347,999**
Generation (MUs)												
Hydro	123,423	112,361	103,896	114,257	130,510	113,720	134,731	132,140	133,989	140,121	144,720	149,319
Coal	490,210	511,247	514,732	535,340	584,787	691,555	746,087	849,417	964,539	1,091,751	1,228,729	1,362,980
Gas	68,778	67,399	92,517	100,257	93,464	66,836	44,522	43,886	49,610	57,243	57,243	57,243
Diesel						2,285	1,868	2,000	2,000	2,000	2,000	2,000
Nuclear	16,776	14,716	18,654	26,285	32,287	32,866	34,228	33,498	43,309	53,121	53,121	53,121
Total	**699,187**	**718,658**	**765,832**	**822,064**	**872,392**	**912,057**	**961,552**	**1,060,942**	**1,193,448**	**1,344,235**	**1,485,812**	**1,624,662**
Growth (%)	5.8%	2.8%	6.6%	7.3%	6.1%	4.5%	5.4%	10.3%	12.5%	12.6%	10.5%	9.3%
Base Deficit (%)	5.4%	7.5%	7.8%	4.6%	6.9%	8.4%	4.1%	2.5%	-1.4%	-5.5%	-7.2%	-7.7%
Capacity addition (MW)												
Hydro	1,256	969	-15	704	1,423	501	1,040	1,370	1,800	2,000	1,500	1,500
Coal	4,927	1,600	6,549	9,000	18,824	18,199	15,052	15,000	14,500	15,500	16,000	16,000
Gas	964	221	2,179	650	675	1,729	1,672	-	-	-	-	-
Diesel	-	-2	-	-	-	-	-	-	-	-	-	-
Nuclear	220	-	440	220	-	-	-	-	1,400	1,400	-	-
Renewables	3,365	2,117	2,279	2,934	6,048	3,039	1,921	3,000	3,500	3,500	3,500	3,500
Total	**10,732**	**4,904**	**11,432**	**13,508**	**26,970**	**23,468**	**19,685**	**19,370**	**21,200**	**22,400**	**21,000**	**21,000**
Utilization/PLF(%)												
Hydro	39.2%	34.8%	32.2%	34.7%	38.2%	32.9%	37.9%	36%	35%	35%	35%	35%
Coal	73.6%	75.2%	69.8%	65.6%	59.6%	60.6%	58.6%	61%	63%	66%	68%	70%
Gas	53.6%	51.7%	61.9%	64.6%	58.0%	37.9%	23.3%	23%	26%	30%	30%	30%
Nuclear	46.5%	40.8%	46.7%	62.8%	77.1%	78.5%	81.7%	80%	80%	80%	80%	80%

Coal PLF in FY19 at 70% calculated as: Centre 80%, Private 70%, State 65%

Source: Company, MOSL

Industrial: rapidly expanding portfolio

Power T&D | Renewables | Transportation | Defense

In Industrial, BHEL is expanding the product portfolio, particularly in Transmission and Transportation segments. These segments could become key revenue contributors

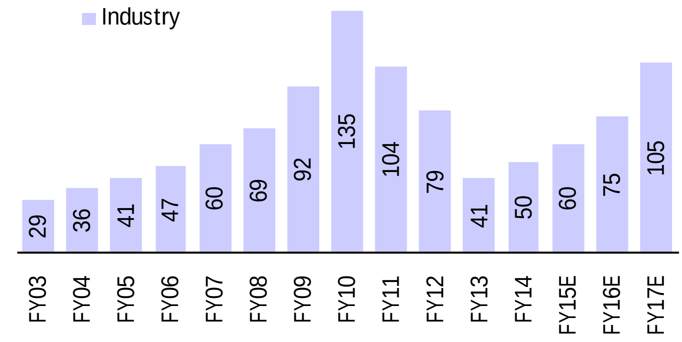
During FY14, BHEL's order intake in the Industrial segment stood at INR50b (up 23% YoY), but still down meaningfully from peak levels of INR135b in FY10. Industrial segment in the past comprised of: Industrial Products (~52%), Transmission (32%) and Transportation Segments (16%). Given the reliance on captive power plants (67mw+), where the market size has declined meaningfully, the order intake remains impacted.

However, we believe that the economics to set up a captive power plant based on imported coal has improved, given the ~15-20% tariff hikes by SEBs for industrial consumers over the past three years and the sharp 40-55% reduction in various grades of imported coal. Thus, we believe that the market could bounce back with a pickup in industrial activities during late FY16/17. BHEL is also expanding its product portfolio in Transmission and Transportation segments. Going forward, new segments like solar PV cell manufacturing and Defense indigenization also opens up interesting avenues.

BHEL is expanding the product portfolio, mainly in Transmission, and Transportation segments

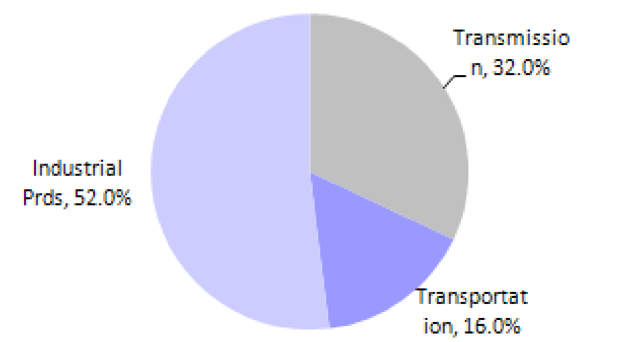
- **Transmission:** 765kva Transformers and Reactors are awaiting pre-qualifications from NTPC/PGCIL (which requires operational track record), and the initial products (for the private sector) have been delivered. GIS up to 145kva has been commercialized by BHEL. For STATCOM, the company has developed low KVA applications. BHEL has been associated with several HVDC projects since 1985, and the higher trend in project awards could also lead to increased order intake.
- **Transportation:** Though setting up of the Mainline Electric Multiple Unit factory in Rajasthan (capex of INR10b) has been delayed, the project can possibly be expedited with renewed government push. Electric loco manufacturing capacity has been expanded from 50 in FY12 to 75 in FY14. Technology absorption for IGBT-based propulsion systems for electric locomotives (up to 6,000HP) and Electric Multiple Units is in process. BHEL entered into a business sharing agreement with Strukton, Netherlands for joint development of IGBT Drives. In FY14, BHEL manufactured and supplied a rake of 9AC EMU coaches, thus proving the ability to supply complete AC EMU rakes fitted with electrics to Indian Railways. Metro rail also presents interesting growth opportunities and BHEL is in the process of technology tie-ups.

Exhibit 16: Industrial segment order intake up 28% YoY in FY14 (INR b)



Source: MOSL, Company

Exhibit 17: Industrial segment revenue composition (FY12-14)



Source: MOSL, Company

New initiatives/expansion plans

- MoU with Solar Energy Corporation, PGCIL, SJVNL, Sambhar Salts and Rajasthan Electronics for setting up a 4gw Ultra Mega Solar Power Project at Sambhar, Rajasthan. Also, BHEL has plans to set up an integrated manufacturing facility for 480mw Solar PV systems (Wafers-Cells-Modules). We note that the company has approached the National Clean Cess Fund to get a 40% capex subsidy.
- In HVDC, BHEL has augmented its facilities to manufacture UHVDC equipments -- Converter Transformers, Thyristor valves, Filter Capacitors etc.
- BHEL has also developed and supplied 400kv Control Shunt Reactor, Fixed series compensation schemes for transmission utilities and small rating STATCOMs for Industry applications.
- Company manufactured and supplied a rake of 9AC EMU coaches, proving its ability to supply complete AC EMU rakes fitted with electrics to Indian Railways.
- BHEL received the first order of Water Treatment system in Petrochemicals sector for 96mld Raw Water Treatment Plant (Membrane Filtration based) from OPAL. It has a long term Manufacturing Associate Agreement with GE India Industrial for membrane-based water treatment business.
- Recently, in Dec 2014, BHEL, Hindustan Shipyards and Mishra Dhatu Nigam came together to form a consortium to bid for the construction of six Scorpene submarines.

Project 75i: six diesel-electric submarines (cost of ~INR530b+)

Project 75i, to acquire six diesel-electric submarines, was cleared in Oct 2014 by the Defense Acquisition Council at a cost of ~INR530b under the 'Buy & Make' (Indian) category. The decision comes nearly four years after the Indian Navy first released a request for information. This represents a departure from the navy's earlier plan in which two submarines were planned to be imported from a foreign yard and four built at Indian yards under collaboration. We believe that Mazgaon Dock (already building six Scorpene submarines under Project 75i), L&T (Hazira yard had fabricated the hull of INS Arihant and three other boats in its class), Hindustan Shipyard (completed INS Sindhukriti's refit which included completely rebuilding parts of the submarine like conning tower etc), Pipavav Defense etc are the possible contenders. Recently, BHEL, Mishra Dhatu Nigam and Hindustan Shipyards came together to form a consortium to build submarines indigenously. For BHEL, we note that it can leverage the manufacturing facilities of BHPV, which is located very near to Hindustan Shipyard's facilities.

Exhibit 18: BHPV manufacturing located just ~10kms from Hindustan Shipyard

Source: MOSL, Company

Exhibit 19: BHEL: Industrial revenue composition (INR m)

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
Power Transmission	**14,177**	**19,315**	**21,958**	**27,194**	**25,019**	**25,765**	**25,541**
Power Transformers (up to 400 kV)	3,946	5,905	5,661	7,029	8,514	7,898	9,782
Power & Special Transformers	3,092	3,164	3,246	4,439	5,482	4,711	4,514
ESP transformers	656	757	939	1,217	1,428	1,741	1,250
Instrument transformers	194	86	121	215	74	141	169
Dry type transformers	186	319	468	587	380	270	284
Circuit breakers (11 - 220 kV)	1,245	1,012	2,234	2,994	3,069	2,871	2,313
Rectifiers	1,349	1,357	1,572	1,400	1,073	969	768
Capacitor	125	182	145	207	124	109	178
Bushings	157	200	265	234	207	192	226
Instrument, Welding, Transformer and Reactors	202	152	166	154	163	140	153
Control Panels	553	721	936	890	698	409	357
Transmission Business Group	2,470	5,461	6,206	7,828	3,807	6,314	5,547
Railways	**8,269**	**9,509**	**8,808**	**9,210**	**11,123**	**13,326**	**9,853**
Traction control gear for AC & DC Diesel systems	1,077	1,135	1,038	1,198	1,646	1,635	1,053
Traction motors for AC / DC systems , main/aux generators	6,315	7,251	5,816	5,395	4,934	5,588	4,669
AC EMU Transformers	6	-	-	15	31	188	20
Freight Loco Transformers	525	769	355	329	513	717	852
Diesel Shunters	345	297	252	293	320	274	394
AC Loco	-	57	1,347	1,981	3,680	4,924	2,865
Captive Power, Industrial Products, etc	**21,729**	**15,481**	**19,122**	**24,848**	**34,541**	**33,858**	**31,583**
60 MW sets	444	454	2,808	5,180	10,657	8,187	3,889
Small & Medium sets	11,640	2,999	1,602	4,984	2,766	4,083	3,545
Micro turbines & Generators	-	-	-	-	-	-	1,831
Turbo Alternators and Steam Turbines	3,023	3,297	4,335	1,741	4,651	4,762	6,055
Heat Exchangers	984	1,126	1,918	2,589	2,642	2,591	4,080
Industrial machines, AC motors up to 1000 HP	2,007	2,152	2,728	3,486	3,833	2,593	1,935
Industrial Systems Group, Bangalore	3,632	5,453	5,731	6,869	9,993	11,641	10,248
Oil and Gas, Defense	**6,202**	**1,964**	**5,403**	**1,695**	**1,864**	**2,448**	**5,134**
Oil Rigs	5,359	1,616	4,500	1,164	746	1,673	5,134
Super Rapid Gun Mount	843	348	903	531	1,118	775	-
Industrial Revenues	**50,377**	**46,268**	**55,290**	**62,947**	**72,546**	**75,396**	**72,111**
Reported	43,503	49,606	57,264	89,528	101,632	99,979	62,437

Source: MOSL, Company

Strong operating leverage, cyclical factors aid recovery

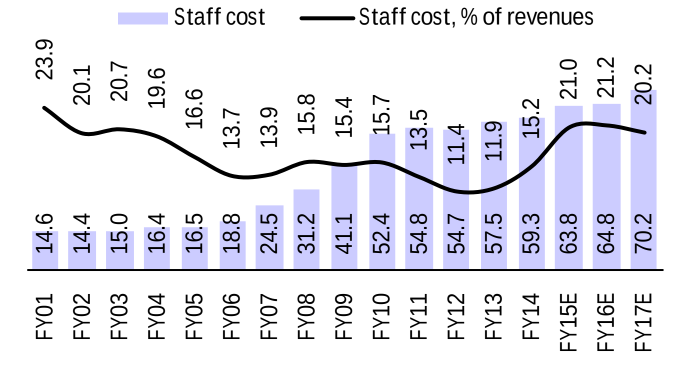
Operating cash flows to improve; core NWC stable

BHEL is strongly exposed to cyclical factors: i) contribution margins at ~42% versus expected EBIDTA margin of 12.4% (adjusted) in FY14, leading to a meaningful operating leverage, ii) core NWC stable at 200 days; cyclical factors of Retention money (at 181 days in FY14 versus 55-60 days in FY07-09) and customer advances (deteriorated from 63% of revenue in FY09 to 38% in FY14) that impacted reported NWC are expected to normalize as we expect power segment BTB to increase from 3.1x in Sept 2014 to 3.8x in FY16.

Expect EBITDA margin to bottom in FY15, aided by operating leverage

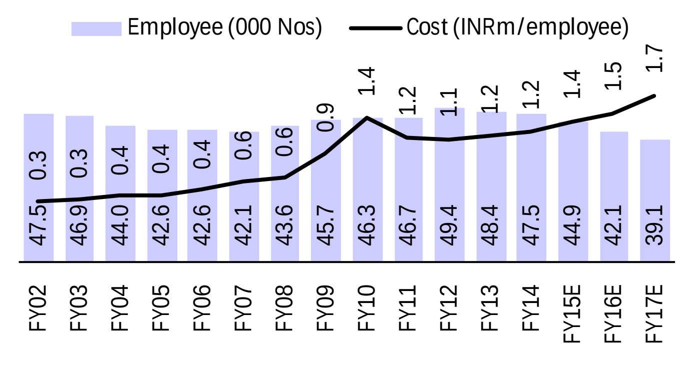
- We expect BHEL's EBITDA margin to decline from 19.4% in FY13 to 9% in FY15E, and improve to 12.9% in FY16E/14.4% in FY17E. During this period, we expect contribution margins at ~44%, and thus the expectations of margin expansion are largely a function of operating leverage, particularly staff costs (20.2% in FY17E, v/s 21% in FY15E) and provisions, including Liquidated Damages (at 0.9% in FY17E v/s 5.8% in FY14).
- Staff cost for BHEL is largely fixed in nature and thus entails a very strong operating leverage: during FY01-12, staff cost declined meaningfully from 23.9% of revenue to 11.4%, and given the poor operating leverage, we expect the same to increase to 21% of revenues in FY15E. Provisions also have a cyclical character and are a function of the execution stage of projects. Given the meaningful cost and time overruns in project execution over the last two to three years, the quantum had increased meaningfully to 5.8% of revenue in FY14. We expect the increased quantum of writebacks in FY16E/17E (at 0.6-0.9% of revenue) and then normalizing at ~2.5-3% from FY18E onwards.

Exhibit 20: Expect staff costs at 21% of revenue in FY15E, thus completing a full circle (INR b)



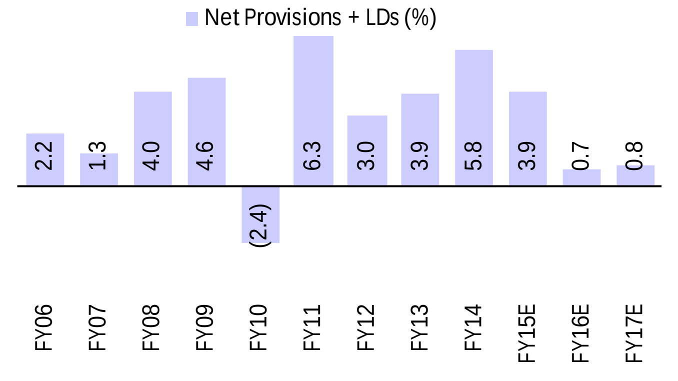
Source: MOSL, Company

Exhibit 21: Expect employee attrition to average at ~2,500-3,000pa during FY15E-17E



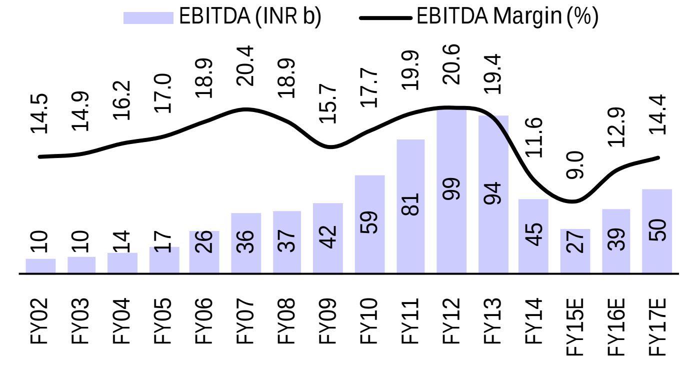
Source: MOSL, Company

Exhibit 22: Net provisions are largely contingent on the stage of project execution and liquidity conditions (% of revenue)



Source: MOSL, Company

Exhibit 23: EBITDA margin to bottom in FY15E, expect margins to expand in FY16E/17E aided by operating leverage



Source: MOSL, Company

Operating cash flows to improve; core NWC stable

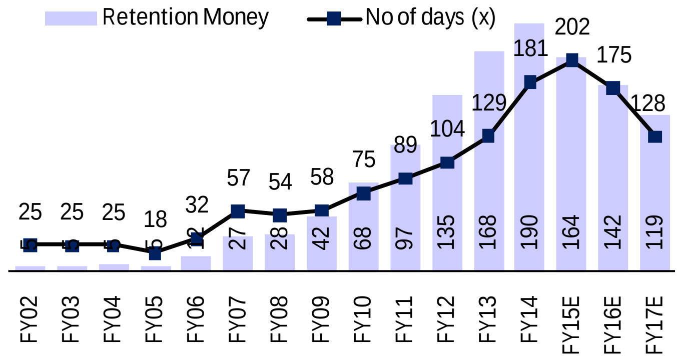
- A large part of the variation in BHEL's reported net working capital is being driven by cyclical factors such as retention money (at 181 days in FY14 v/s 55-60 days in FY07-09) and customer advances (deteriorated from 63% of revenue in FY09 to 38% in FY14, but stable as a percentage of order book at 12-14%). While the core net working capital has been fairly stable at ~200 days, the reported number has been volatile from negative 24 days in FY09 to 154 days in FY14. As the cyclical factors correct, we expect the reported NWC to improve from 154 days in FY14 to 51 in FY17E.
- As we expect the above cyclical factors, impacting NWC, to support in FY15/16, we expect operating cash flows to improve from an average of ~INR40b pa in FY13-14 to INR82b pa in FY15E-17E. Even during FY14, operating free cash flow had improved meaningfully to INR54.2b v/s INR24.4b in FY13. This will lead to a meaningful increase in net cash from INR92b in FY14 to INR286b in FY17E (~45% of current market cap).

Exhibit 24: NWC volatility - a function of cyclical factors; expect meaningful improvement in FY16/17 (days)

	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14E	FY15E	FY16E	FY17E
NWC (Structural Factors)																
Debtors (excl Retention)	220	190	185	211	164	148	173	164	155	163	172	177	199	208	198	177
Inventories	107	105	96	112	102	89	108	109	103	100	105	90	93	97	95	91
Loans and Advances	53	50	47	47	33	24	22	34	31	30	23	22	30	36	33	31
Sundry Creditors	99	96	79	80	77	75	84	81	84	74	84	80	90	84	81	84
Other Liabilities	17	17	15	17	14	12	14	15	14	19	9	14	21	24	23	20
Core NWC	**264**	**232**	**234**	**273**	**208**	**174**	**206**	**211**	**190**	**200**	**207**	**195**	**211**	**233**	**221**	**195**
NWC (Cyclical factors)																
Retention Money	25	25	25	18	32	57	54	58	75	89	104	129	181	202	175	128
Customer Advances	101	95	143	176	150	165	215	229	213	187	154	124	139	156	181	172
Provisions	29	37	49	47	40	47	56	64	42	70	59	69	98	115	113	100
Reported NWC	**158**	**125**	**68**	**68**	**50**	**20**	**(12)**	**(24)**	**10**	**32**	**97**	**131**	**154**	**164**	**101**	**51**

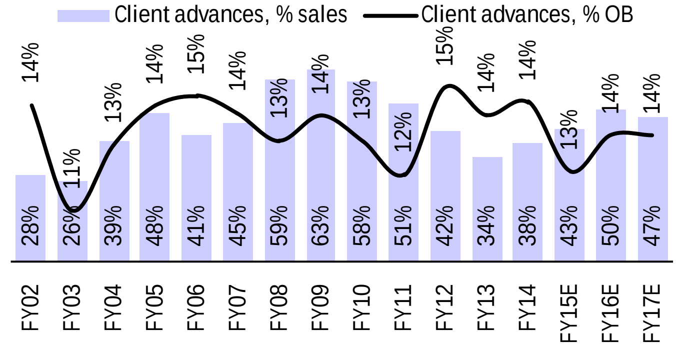
Source: MOSL, Company

Exhibit 25: Retention money largely function of negotiation with customers, expect quantum to decline (INR b)



Source: MOSL, Company

Exhibit 26: Customer advances remained stable (as % of order book), but volatile as % of revenue



Source: MOSL, Company

Valuation and view

Maintain Buy, Revised Price Target of INR325 (18x FY17E PER)

We expect BHEL to report an EPS of INR7.9 in FY15E, INR12.7 in FY16E, INR18.2 in FY17E. At the CMP of INR255/sh, the stock quotes at PER of 32.5x FY15E / 20.2x FY16 E/ 14.2x FY17E. We maintain a **Buy** with a revised target price of INR325/sh (PER of 18x FY17E). Our target multiple of 18x is based on average one-year forward PER during FY06-11, a period when the power sector ordering was robust.

Key investment arguments

- Our macro analysis suggests that normative industry ordering will stand at ~20-24gw pa (power demand at 1.6BUs in FY20E). The journey from 6-7gw pa in FY14-15E to 10-12gw pa in FY16E-17E and then at ~20-24gw pa provides interesting avenues.
- Project pipeline has been building up, particularly for BHEL, given that the company has bagged projects on nomination basis and also intends to leverage cash reserves for equity stage to bag EPC contracts. Over the past three years, BHEL has expanded its offerings in the power segment meaningfully and will also enable it to capture a larger share in project execution, going forward.
- Company is making efforts to expand the contribution from industry business, particularly transmission and transportation segments. Going forward, new segments like solar PV cell manufacturing and Defense indigenization also opens up interesting possibilities.
- BHEL is strongly exposed to cyclical factors: i) contribution margins at ~42% versus expected EBITDA margin of 12.4% (adjusted) in FY14, leading to a meaningful operating leverage, ii) core NWC stable at 200 days; cyclical factors of retention money (at 181 days in FY14 versus 55-60 days in FY07-09) and customer advances (deteriorated from 63% of revenue in FY09 to 38% in FY14), that impacted reported NWC are expected to normalize as we expect BTB to increase from 3.1x currently to 3.8x in FY16E. We expect operating cash flow to improve from an average of ~INR40b pa in FY13-14 to INR82b pa in FY15E-17E. Thus, net cash is likely to increase from INR92b in FY14 to INR286b in FY17E (~45% of current market cap).

Key risks/variables

- The key variable to watch out is the impact of Pay Commission's implementation in FY17 and could be a vital swing factor. However, we believe that a part of the impact will be mitigated by productivity improvements /operating leverage over the medium term, and thus the impact is possibly not structural.
- Another variable is the uncertainty on coal block de-allocations and mine auctions, which could delay the order pipeline.

Key Triggers

- Projects awards, particularly 1.3GW Udangudi (Tamilnadu) and 1.1GW Manuguru (Telangana).
- Successful coal mine auctions, sustained ramp up in Coal India production.

Exhibit 27: BHEL: one-year forward PE

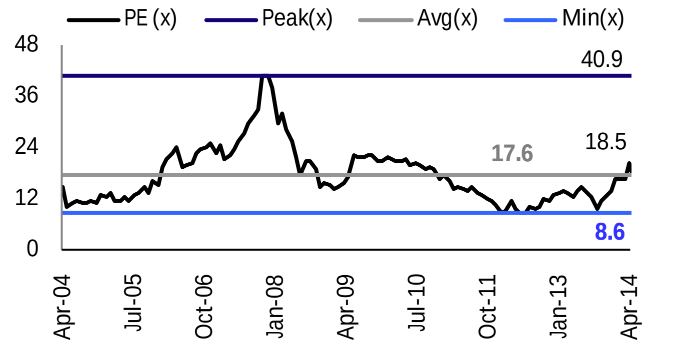
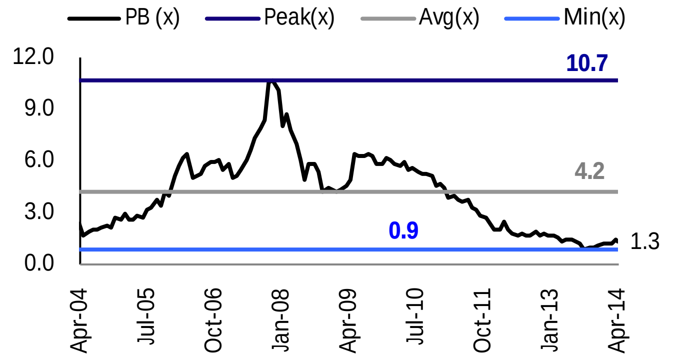


Exhibit 28: BHEL: one-year forward PB



Operating metrics

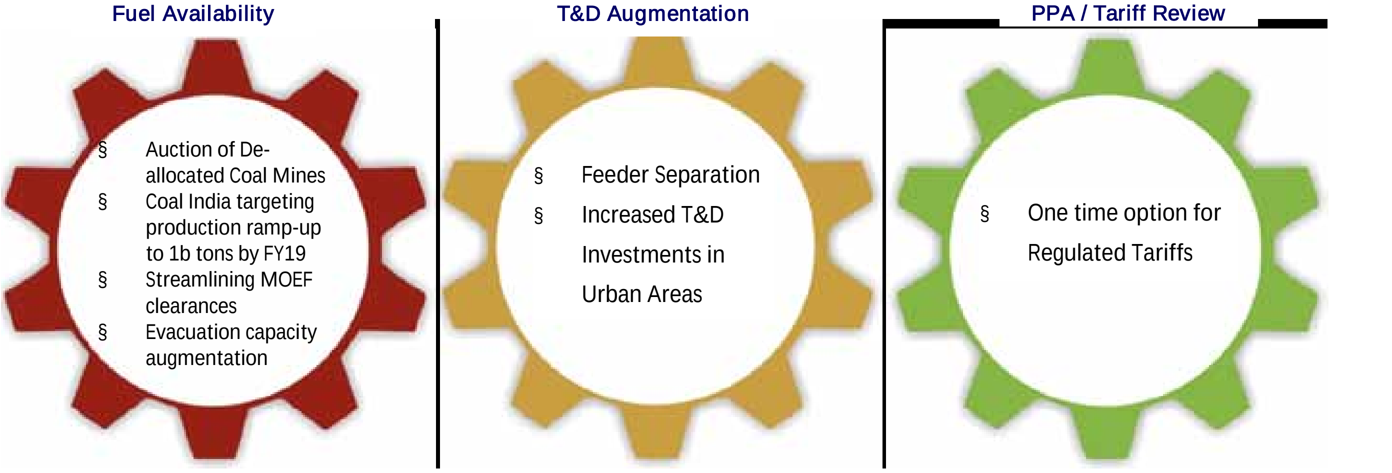
	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15E	FY16E	FY17E
Order Intake (INR b)												
Power (GW)	3.4	9.7	14.6	17.0	16.5	15.1	3.9	9.6	4.5	5.3	7.0	7.3
Power (INRM/MW)	27	25	27	26	24	29	45	24	38	35	35	35
Power	90	245	387	444	401	443	176	227	170	184	245	256
R&M	19	32	24	28	19	21	23	29	34	40	46	53
Industry	47	60	69	92	135	114	79	41	50	60	75	105
International Business	33	19	23	33	36	37	2	20	26	25	25	25
Cancellations	-	-	-	-	-	-	58	-	-	-	-	-
Total Order Intake	**189**	**356**	**503**	**597**	**590**	**605**	**221**	**317**	**280**	**308**	**391**	**439**
% YoY	4%	88%	41%	19%	-1%	2%	-63%	43%	-12%	10%	27%	12%
Segmental Revenues												
Power	98	127	159	213	269	348	379	396	325	238	233	264
Industry	37	50	44	56	57	90	102	100	62	53	56	64
International Business	10	11	11	12	16	12	15	6	16	18	21	25
Total Revenues	**145**	**187**	**214**	**280**	**342**	**450**	**495**	**502**	**403**	**309**	**310**	**353**
EBITDA Margins (%)	18.9	20.4	18.9	15.7	17.7	19.9	20.3	19.4	12.0	9.0	12.9	14.4
Contribution Margins (%)	43.3	43.3	44.4	38.5	40.4	40.3	41.5	42.1	40.8	43.9	44.0	44.0
Staff Costs (%)	13.7	13.9	15.8	15.4	15.7	13.5	11.4	11.9	14.8	21.0	21.2	20.2
Other Expenses (%)	10.7	9.0	9.7	7.4	6.9	9.5	9.4	10.9	14.1	14.0	9.9	9.4
Employees (in 000)	42.6	42.6	42.1	43.6	45.7	46.3	46.7	49.4	48.4	47.5	44.9	42.1
Staff Cost (INR B)	18.8	23.7	26.1	41.9	65.4	54.0	54.7	57.5	59.3	63.8	64.8	70.2
INR M/empl	0.4	0.6	0.6	0.9	1.4	1.2	1.1	1.2	1.2	1.4	1.5	1.7
Cash / (Debt), INR B												
Cash	41	58	84	103	98	96	67	77	119	163	241	313
Retention Money	12	27	28	42	68	97	135	168	190	164	142	119
Debt	-6	-1	-1	-1	-1	-1	-1	-14	-27	-26	-26	-26
Net Cash / (Debt)	**47**	**84**	**111**	**144**	**164**	**192**	**200**	**232**	**282**	**301**	**357**	**406**
INR/sh	**19**	**34**	**45**	**59**	**67**	**79**	**82**	**95**	**115**	**123**	**146**	**166**
EPS (INR / sh)	6.9	9.9	10.3	14.6	19.2	23.2	28.2	26.9	14.7	8.0	12.8	18.2
RoE (%)	25.2	30.0	25.7	30.1	32.5	31.4	30.3	23.5	11.3	5.8	8.7	11.5

Annexure | Power sector: addressing contentious issues

Initial progress on some fronts (like fuel availability etc) is encouraging

The power sector seems to be an integral element of government's strategy to revive the Indian economy, particularly in the light of flagship programmes like 'Make in India' and increased impetus on manufacturing (target to increase the contribution to 25% of GDP). The progress on certain fronts, particularly attempts to address fuel availability, has been encouraging, and there is a far greater seriousness in resolving issues now. Still, execution holds the key, as several of the planned initiatives require extensive co-ordination, including with state governments. Going forward, we expect more renewed attempts to decisively address the next round of contentious issues of SEB finances and tariff review. Powergen capex pipeline is showing initial signs of picking up, driven by structural trends.

Exhibit 29: Key attempts to address contentious issues, but execution holds key



Source: MOSL, Industry Reports

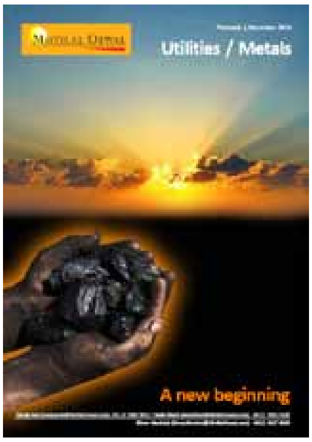
Fuel availability: increased urgency to ramp up coal production

Our mine-wise analysis for Coal India indicates current production potential of operational mines at ~600m tons; in addition, ~50% of the Brownfield / Greenfield mines with production potential of ~325m tons have already obtained large part of the required clearances

The government's attempt towards addressing the fuel availability challenges has been impressive, even as the initial gains in terms of incremental production will be realized with a time lag of ~18-24 months. Domestic coal availability to power sector currently stands at just ~450m tons, while i) Coal mine auction (Round 1) is likely to improve availability by ~200m tons to power sector and ii) Coal India has been indicated a target of 1b tons production by FY20 (near doubling from current levels). Supporting initiatives in terms of addressing the evacuation bottlenecks, expediting Environment and Forest clearances, etc have also witnessed good progress. Still, execution remains the key and we would be watchful of the trends.

#1 Coal mine auction: expect availability increase of ~200mtons to power sector from Round 1 blocks

Please refer our Utilities/Metals sector report dated 11 Dec 2014



The Supreme Court (SC) judgment, de-allocating 204 coal blocks, specified a time limit till March 2015 to transfer/auction operating coal blocks. Through an Ordinance route, Bidding is set to kick-start with 101 coal blocks having geological resources of 15+ b tons in Round-1.

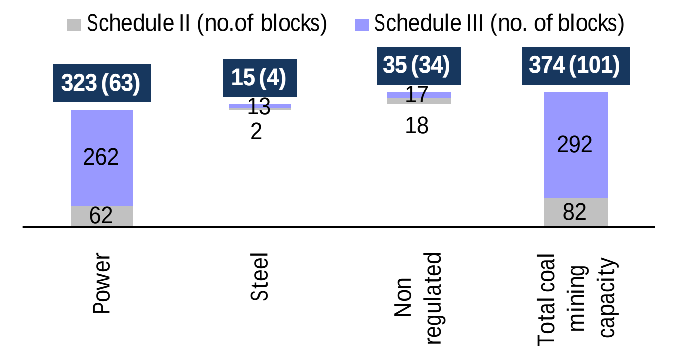
Classification of Blocks and Sequencing of auctioning: The comprehensive list of 204 coal blocks is the schedule I list. The ordinance has classified:

- 42 operating coal blocks (geological resources of 3.7b tons) under schedule II,
- 32 blocks at advanced stage of commissioning with most clearances in place (geological resources of 4.7b tons) are grouped under schedule III, and
- 27 blocks have been transferred from Schedule I to III.

Based on the clearance granted for schedule II and III blocks, the total production potential stands at ~374m tons, comprising of: 82m tons from 42 operating coal blocks, 125m tons from 32 near-commissioning blocks and ~166m tons from 27 blocks shifted from Schedule I to III.

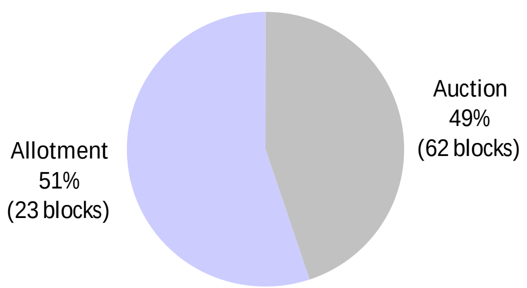
<u>Specifically for the power sector, the coal production from Round-1 blocks will increase meaningfully from ~62m tons (production potential of operating blocks) to ~323m tons (including blocks at advanced stages of commissioning).</u> The auction for Schedule II blocks is likely to be completed before March 2015, while for Schedule III and Schedule I to III are targeted by 1QFY16.

Exhibit 30: Summary of coal mine producing capacity (mtpa) in round-1 auction



Source: MOSL, Ministry of Coal

Exhibit 31: Coal mine capacity bifurcation on allotment and auctioning basis



Source: MOSL, Ministry of Coal

Cluster-wise analysis: Demand outweighs resources, at least for round-1

We have segregated the pool of coal blocks available for bidding in round-1 (101 blocks) into key clusters, based on the location of the end-use plants and concentration of coalfields. These clusters are:

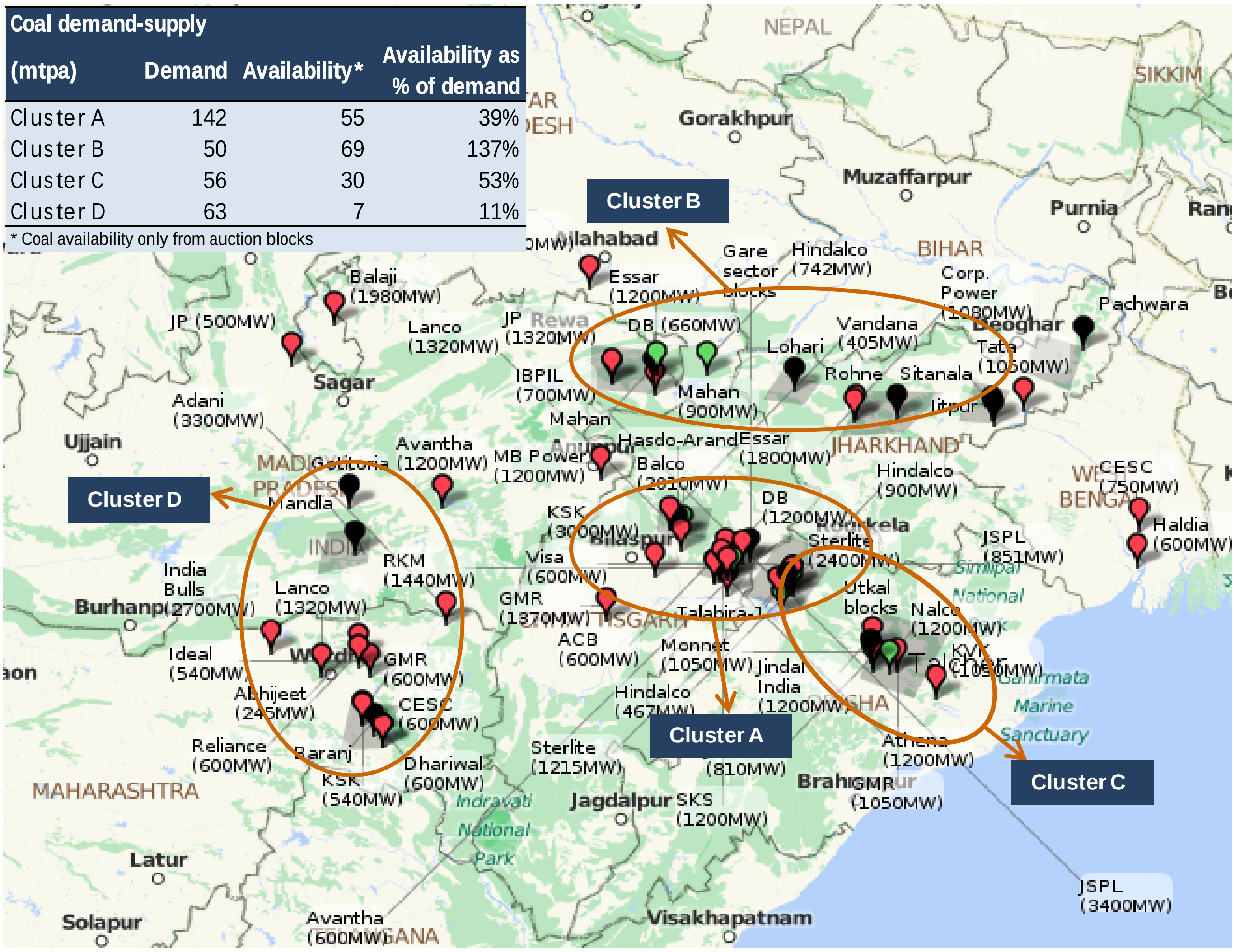
- **Cluster A:** Chattisgarh/Odisha adjoining border
- **Cluster B:** Madhya Pradesh, Uttar Pradesh, Jharkhand, and Chattisgarh
- **Cluster C:** Odisha Central
- **Cluster D:** Madhya Pradesh and Maharashtra
- **Cluster E:** Others

The segregation would help gauge the distance advantage available to end-use projects in the vicinity of the blocks, and thus, the economic advantage in bidding for a block. The classification also provides a good sense of likely demand vis-a-vis resource availability for major categories of end-use sectors like Power and Sponge Iron. Our analysis indicates that demand significantly outweighs available resources, more so for independent power projects (IPPs).

Exhibit 32: Segregation of coal blocks and private sector power plants in clusters (Sch II and III Blocks)

Coal demand-supply (mtpa)	Demand	Availability*	Availability as % of demand
Cluster A	142	55	39%
Cluster B	50	69	137%
Cluster C	56	30	53%
Cluster D	63	7	11%

* Coal availability only from auction blocks



Source: MOSL, Ministry of Coal

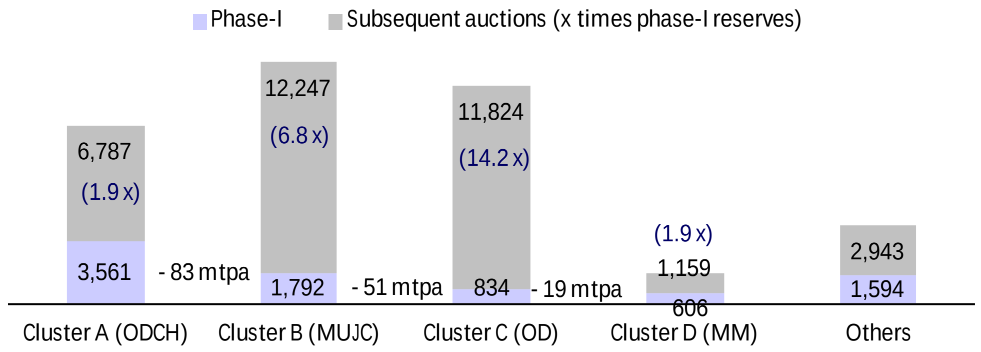
We note that the total private sector IPP capacity satisfying the end-use completion criteria highlighted in draft rules is 47gw, entailing potential demand of 230m tons. In addition, captive power projects (CPPs) of 10gw are lined up, taking total demand for Power sector at 280m tons. Against this, availability under auction is just 122m tons, including 25m tons of coal producing capacities earlier allotted to CPPs. Our analysis assumes status quo on end-use classification.

Subsequent coal auctions can bridge the supply gap

35b tons of incremental reserves to weigh on round-I bids

Round-I of the auction includes only 101 of the 204-odd coal blocks de-allocated as per the Supreme Court order. The remaining blocks represent ~37b tons of incremental geological reserves, ~1.6x the 16b tons of reserves in round-1 auction. While our cluster-based analysis suggests huge demand-supply gap, and in turn, the possibility of aggressive bidding in round-1, clarity on future coal block auctions and timelines would help alleviate concerns relating to shortage. We believe the potential from future coal block auctions would sufficiently meet demand by Power and other end-use sectors.

Exhibit 33: Subsequent coal block auctions hold significant potential



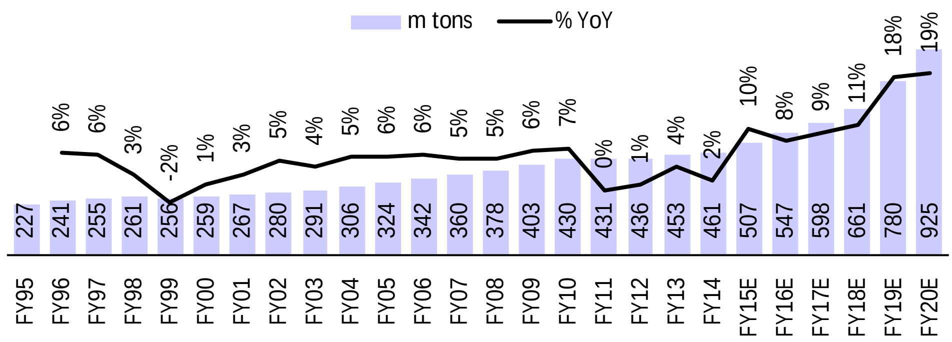
Source: MOSL, Ministry of Coal

#2 Coal India targets production of 1b tons by FY20

Coal India has been indicated a gross target to produce 1b ton of coal by FY20, which entails near doubling of the current production levels. The expected growth is to be supported by i) Brown field as well as green field projects, ii) Completion of 'New Railway Infrastructure Projects', iii) Faster environment & forestry clearances, iv) Completion of Rehabilitation & Resettlement and speedier land acquisition, v) Improvement in Law & Order situation, vi) Technology improvement in mining and related infrastructure.

Media articles further state that in a first-ever exercise, the government is drawing up mine-wise plans for Coal India to achieve a 1b ton production by FY20, and plans to achieve 925m ton have already been finalized. We note that the Central government is expediting 90 of Coal India's 150 Green field / Brown field mining projects, which entail a cumulative investment of INR880b.

Exhibit 34: Coal India's production trend based on 1b tons targeted production



Source: MOSL, Company, Production Estimates based on Media Articles

Our view: We have also analyzed the mine-wise production potential and the current status for Coal India. We note that the current production potential of the operational mines stands at ~600m tons (of which we model FY15 production at 495m tons) and we expect the ramp-up from these mines over the next two to three years. In addition, Brown field / Green field mines with production potential of ~325m tons are under various stages of obtaining clearances (of which, we note that ~50%+ have already obtained large part of the clearances required). Another important challenge is the evacuation network, particularly for Green field mines in Jharkhand, Chhattisgarh and Orissa, which will need to be expedited.

#3 Streamlining MOEF clearances to expedite capacity augmentation

Ministry of Environment and Forests (MOEF) has taken various measures to expedite clearances for power and mining projects

Exhibit 35: Several steps taken to streamline MOEF clearances to boost coal production

Web portal system
Online system for providing Environment (wef June 2014) and forest clearances (July 2014)
Will allow monitoring on the entire process and adhering to the timeline of every step
Delinking from Wildlife Impact Assessment
Delinking of forest clearances from Wildlife Impact Assessments
Relaxed norms for Forest Clearances
Reduced forest cover requirements for compensatory afforestation from 50% to 33%
More powers to Regional Empowered Committees to process forest clearances at regional levels
Granted authority to states to approve forest clearance up to 100 acres vs earlier 12.5 acres
Forest Survey of India to launch a new forest database; make it easier to base decisions on scientific data
Boost Mining / Coal Production
Mining projects that have already applied for EC no longer need to apply for fresh EC while renewing the mining lease
Group clearances for adjacent mines, rather than individual projects
94 clusters have been identified for Coal India; there would be only one public hearing for the identified cluster, instead of examining one mine at a time

Source: MOSL, Company

#4 Attempts to improve evacuation infrastructure

- **Three critical railway lines being monitored at highest level:** During the last six months, Railways along with Power and Coal ministries has held special joint meetings to put three critical coal connectivity projects on the fast track. A Multi Disciplinary Project Monitoring Unit has been formed for better co-ordination. The three rail connectivity projects for coal movement are: i) Tori-Shivpur (44kms), Shivpur-Kathautia (53kms) railway line in North Karanpura in Jharkand, ii) Jhasuguda-Barpalli-Sardega railway line (53 kms) in IB valley, Odisha and iii) Bhupdevpur-Korichapan-Dharamjaigarh (180 kms) in Mand-Raigarh coalfield, Chhattisgarh. It is estimated that these lines can debottleneck ~200-300m tons of incremental coal production from the Green field mines in these regions.
- **Coal India to purchase 250 additional rakes:** In addition, Coal India has decided to purchase 250 additional rakes worth INR50b to evacuate greater quantities of coal primarily to power plants. Currently, we note that rake availability to Coal India stands at ~215-220, and thus it can plan a near doubling of the rake availability.
- **Rationalizing coal linkages could free capacity:** The process of rationalization of coal linkages aims to bring efficiency and link power plants to the nearest coal mines. An Inter-Ministerial Task Force was constituted in June 2014 to review the same. As a test case, NTPC and Gujarat State Electricity Corporation (GSEC) signed an MoU to swap 1m ton of coal in Sept 2014, and can be expanded to 2.5m tons, entailing savings of INR9.5b. As per the MoU, NTPC can source domestic coal from Korba-Rewa coal fields against GSEC's fuel supply agreement with Coal India, while GSEC can utilize the imported coal received by NTPC at Gujarat ports. The proposed policy is only applicable for public sector.

Anil Swarup, Coal Secretary

- "The critical point, not only this year, but in the following year as we talk of 1b ton production by Coal India is in terms of ensuring evacuation of coal that is a huge challenge that we have.
- I would like to inform you that we are trying to work out mine-wise plan and mine-wise evacuation plan in terms of what it takes to evacuate the coal that we are planning to produce. So, that is what we are going to engage with the railways now. Sit with them and see how do we work out a detailed plan, whether we have to set up joint ventures or Special Purpose Vehicles for strengthening the existing railway network or setting up new railway lines.

- We have a whole set of railway lines which have been listed out in the plan that we have worked out for the next five years. I have already written to the Chairman of Railway Board and we will have a discussion with them."

Financials and valuations

Income Statement						(INR Million)
Y/E March	**2012**	**2013**	**2014**	**2015E**	**2016E**	**2017E**
Total Income	**479,788**	**484,247**	**391,088**	**304,237**	**305,362**	**348,133**
Change (%)	18.8	0.8	-19.4	-22.7	0.3	14.0
Staff Cost	54,654	57,528	59,338	63,766	64,844	70,208
Mfg. Expenses	280,845	280,156	231,565	170,652	171,116	195,038
Selling Expenses	45,213	52,665	54,987	42,566	30,154	32,729
EBITDA	**99,076**	**93,898**	**45,198**	**27,254**	**39,248**	**50,158**
Change (%)	23.0	-5.2	-51.9	-39.7	44.0	27.8
% of Net Sales	20.6	19.4	11.6	9.0	12.9	14.4
Depreciation	8,000	9,534	9,829	10,757	10,867	11,636
Interest	513	1,253	1,326	1,356	1,380	1,413
Other Income	12,656	11,217	16,160	13,036	17,870	26,482
Extra-ord. Items (net)	-193	-4	-60	0	0	0
PBT	**103,026**	**94,324**	**50,143**	**28,177**	**44,871**	**63,590**
Tax	32,623	28,177	15,535	8,735	13,686	19,077
Rate (%)	31.7	29.9	31.0	31.0	30.5	30.0
Reported PAT	**70,403**	**66,147**	**34,608**	**19,442**	**31,185**	**44,513**
Adjusted PAT	**68,922**	**65,540**	**35,887**	**19,442**	**31,185**	**44,513**
Change (%)	21.7	-4.9	-45.2	-45.8	60.4	42.7

Balance Sheet						(INR Million)
Y/E March	**2012**	**2013**	**2014**	**2015E**	**2016E**	**2017E**
Share Capital	4,895	4,895	4,895	4,895	4,895	4,895
Reserves	248,837	299,546	325,575	340,351	364,052	397,882
Net Worth	**253,732**	**304,441**	**330,471**	**345,247**	**368,947**	**402,777**
Loans	1,234	14,152	26,548	26,250	26,250	26,250
Differed Tax Liability	-15,462	-15,507	-19,690	-19,690	-19,690	-19,690
Capital Employed	**239,504**	**303,086**	**337,329**	**351,807**	**375,508**	**409,338**
Gross Fixed Assets	97,066	107,832	120,505	130,231	139,521	148,811
Less: Depreciation	54,098	63,248	73,576	84,861	95,728	107,364
Net Fixed Assets	**42,968**	**44,585**	**46,929**	**45,371**	**43,794**	**41,447**
Capital WIP	13,476	11,716	6,421	5,000	5,000	5,000
Investments	4,617	4,292	4,202	4,202	4,202	4,202
Curr. Assets	**591,237**	**625,187**	**650,670**	**606,968**	**651,154**	**712,760**
Inventory	135,487	117,638	97,976	78,649	77,374	84,799
Debtors	357,405	398,882	399,530	333,281	303,769	283,963
Cash & Bank Balance	66,720	77,321	118,729	163,035	240,934	312,841
Loans & Advances	30,118	29,347	31,910	29,479	26,551	28,631
Other Current Assets	1,506	2,000	2,525	2,525	2,525	2,525
Curr. Liab. & Prov.	**412,794**	**382,694**	**370,894**	**309,734**	**328,641**	**354,071**
Creditors	108,717	104,313	94,839	68,537	66,377	78,224
Other Liabilities	218,656	180,918	169,074	146,017	166,932	178,170
Provisions	85,421	97,462	106,981	95,180	95,333	97,676
Net Current Assets	**178,443**	**242,493**	**279,776**	**297,235**	**322,512**	**358,689**
Appli. of Funds	**239,504**	**303,085**	**337,329**	**351,807**	**375,508**	**409,338**

E: MOSL Estimates

Financials and valuations

Ratios

Y/E March	2012	2013	2014	2015E	2016E	2017E
Basic (INR)						
EPS	**28.2**	**26.8**	**14.7**	**7.9**	**12.7**	**18.2**
Change (%)	21.7	-4.9	-45.2	-45.8	60.4	42.7
Cash EPS	31.4	30.7	18.7	12.3	17.2	22.9
Book Value	103.7	124.4	135.0	141.1	150.7	164.6
DPS	6.4	5.4	2.8	1.6	2.5	3.6
Payout (incl. Div. Tax.)	22.3	20.0	20.0	20.0	20.0	20.0
Valuation (x)						
P/E	11.5	8.1	11.1	32.1	20.0	14.0
Cash P/E	10.3	7.1	8.7	20.7	14.8	11.1
EV/EBITDA	7.3	5.0	6.7	17.7	10.3	6.6
EV/Sales	1.5	1.0	0.8	1.6	1.4	1.0
Price/Book Value	3.1	1.8	1.2	1.8	1.7	1.5
Dividend Yield (%)	2.5	2.1	1.1	0.6	1.0	1.4
Return Ratio (%)						
RoE	30.3	23.5	11.3	5.8	8.7	11.5
RoCE	49.3	35.2	16.1	8.6	12.7	16.6
Turnover Ratios						
Debtors (Days)	263	290	362	393	358	293
Inventory (Days)	105	90	93	97	95	91
Creditors. (Days)	83	79	89	83	81	83
Asset Turnover (x)	11.0	10.7	8.2	6.5	6.8	8.2
Leverage Ratio						
Debt/Equity (x)	-0.5	-0.3	-0.2	-0.3	-0.4	-0.6

Cash Flow Statement (INR Million)

Y/E March	2012	2013	2014	2015E	2016E	2017E
PBT bef. EO Items	**103,218**	**94,329**	**50,203**	**28,177**	**44,871**	**63,590**
Add : Depreciation	8,000	9,534	9,829	10,757	10,867	11,636
Interest	513	1,253	1,326	1,356	1,380	1,413
Less : Direct taxes paid	32,623	28,177	15,535	8,735	13,686	19,077
(Inc)/Dec in WC	-78,991	-14,873	24,026	48,373	30,375	22,894
CF from Operations	**-4,588**	**24,456**	**54,269**	**60,178**	**94,879**	**91,961**
EO Income	-193	-4	-60	0	0	0
CF from Op. Incl. EO Items	**-4,780**	**24,452**	**54,209**	**60,178**	**94,879**	**91,961**
(Inc)/dec in FA	-13,097	-9,390	-6,879	-7,777	-9,290	-9,290
(Pur)/Sale of Investments	-225	325	90	0	0	0
CF from Investments	**-13,322**	**-9,065**	**-6,789**	**-7,777**	**-9,290**	**-9,290**
(Inc)/Dec in Networth	6,169	-43	-4,657	0	0	0
(Inc)/Dec in Debt	213	12,918	12,396	-298	0	0
Less : Interest Paid	513	1,253	1,326	1,356	1,380	1,413
Dividend Paid	17,960	16,406	12,425	6,442	6,310	9,350
CF from Fin. Activity	**-12,091**	**-4,784**	**-6,012**	**-8,096**	**-7,690**	**-10,763**
Inc/Dec of Cash	**-30,194**	**10,602**	**41,408**	**44,305**	**77,899**	**71,907**
Add: Beginning Balance	96,302	66,720	77,321	118,729	163,035	240,934
Closing Balance	**66,720**	**77,322**	**118,728**	**163,035**	**240,934**	**312,841**

E: MOSL Estimates

NOTES

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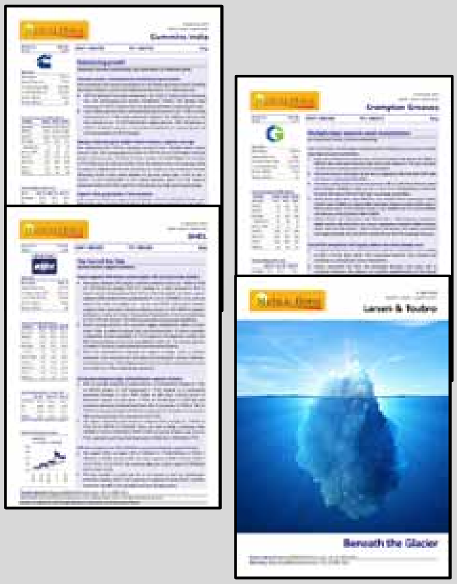

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