Deutsche Bank

18 July 2008

Indian Infrastructure

Don't wait till the music stops

Industry Strategy

The cycle has clearly turned – still not too late to sell

Our analysis suggests the infrastructure investment cycle is not going through just a short-term slowdown – rather this will likely last 18-24 months. Despite a sharp sell-off, we believe the capital equipment and power utility sectors are still largely overvalued given the likely sharp deterioration in FCF/balance sheet and significant delays in project execution. Top Sells-: Reliance Power, L&T, NTPC, Tata Power and Thermax. Initiate- Areva T&D and Lanco Infratech with a Sell. Downgrading- ABB, BHEL to Hold and IVRCL, Siemens & Voltas to Sell.

Demand slowdown and execution delays ahead

There is growing on-the-ground evidence from both the public and private sectors that new infrastructure projects are being adversely affected by the worsening fiscal deficit and higher interest rate environment. We're also seeing significant delays in land acquisition and fuel/equipment supplies. This is negative for both capital equipment providers and power utility developers.

Sharp deterioration likely in FCF and balance sheet

For capital equipment firms, strong order inflows over the past three years will ensure strong EPS growth in the next two years. However, we expect a slowdown in order inflows and an increase in working capital to result in sharp FCF deterioration. For power utilities, our worries centre around regulatory resistance to tariff hikes (driven by increasing losses at distribution firms and fuel price increases), longer project execution, working capital periods, and rising interest rates.

Valuations not cheap despite sharp sell-off

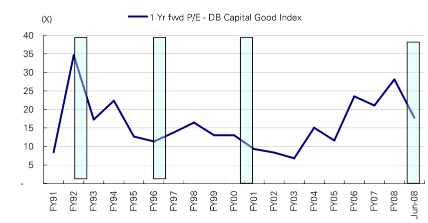
Bulls may argue the above is already discounted as there has been a sharp sell-off in prices of large cap power utilities and capital equipment stocks, and earnings downgrades are not as significant. However, we note that (1) valuations are still well above the troughs at this stage of previous cycles, even after adjusting for better scale/margins/balance sheet/RoE; and (2) investors ought to focus on FCF and balance sheet deterioration, not just on earnings growth.

Key upside risks are meaningful progress on economic reforms relating to land acquisition, coal mining and privatisation; sharp fall in commodity and fuel prices. (See page 52-53 for detailed risk evaluation).

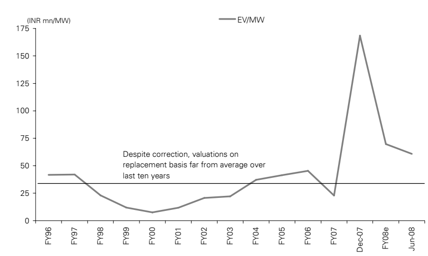
Companies featured

ABB Ltd India (ABB.BO),INR875.50	Hold
Areva T&D (AREV.BO),INR1,438.00	Sell
BHEL (BHEL.BO),INR1,461.15	Hold
IRB Infrastructure Dev. (IRBI.BO),INR142.00	Sell
IVRCL Infra (IVRC.BO),INR295.00	Sell
Lanco (LAIN.BO),INR301.00	Sell
Larsen & Toubro Ltd (LART.BO),INR2,443.00	Sell
NTPC Limited (NTPC.BO),INR165.00	Sell
Reliance Power (RPOL.BO),INR132.00	Sell
Siemens India Ltd (SIEM.BO),INR472.00	Sell
Tata Power (TTPW.BO),INR1022.00	Sell
Thermax Limited (THMX.BO),INR375.00	Sell
Voltas (VOLT.BO),INR124.00	Sell

Industrial PE still at cyclical high



Utilities are still on cyclical high



Infrastructure Research Team

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

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Stock Picks

Figure 1: Stock picks

	Ticker	Price	Target price INR)	Rating	Potential upside / downside (%)	FY09e	FY10e	FY09e	FY10e	FY09e	FY10e	FY09e	FY10e	Comments
		17-Jul-08				----EPS Growth (%) ---		---------PE(x)--------		------ROE (%) --------		-----P/BV (%) -----		
Hold-rated stocks														
ABB Ltd India #	ABB IN	905	835	Hold	(4.6)	20	18	26	**19**	37	**38**	8	6	We like ABB, as product sales exhibit counter cyclical traits
Bharat Heavy Electricals	BHEL IN	1563	1335	Hold	(8.6)	18	17	20	**14**	32	**36**	10	8	Already washed out from disappointing Q4, not compelling but good relative
Stocks to avoid (or wait for a pull back before buying)														
Siemens India Ltd ##	SIEM IN	472	420	Sell	(11.1)	20	16	21	**15**	35	**39**	23	19	Most of the pain behind us, Wait for stock to fall to INR 360 before turning aggressive
Larsen & Toubro Ltd	LT IN	2443	2000	Sell	(18.1)	15	16	23	**17**	25	**28**	6	5	Guidance seems optimistic, Lion's share of pain behind us, Wait for stock to fall to INR 1800 before turning aggressive
Areva T&D India Ltd #	ATD IN	1438	1000	Sell	(30.5)	11	8	26	**22**	39	**33**	9	7	Key concern is company's ability to manage downturn. High leverage and low support from internal accruals
Voltas Ltd	VOLT IN	124	100	Sell	(19.4)	21	13	16	**12**	33	**31**	6	4	Extensive residential and commercial construction exposure, not much pricing power
Thermax Ltd	TMX IN	375	270	Sell	(28.0)	6	4	13	**12**	31	**22**	5	4	Slowing growth and weaker margins likely in 2H09
IVRCL	IVRC IN	295	225	Sell	(23.7)	-3	10	13	**11**	15	**16**	2	2	Pricing and material could get worse, residential and commercial construction negative rate of chg is accelerating
NTPC	NATP IN	165	135	Sell	(18.2)	-5	9	20	18	12	13	3	3	Valuations are rich
Tata Power	TPWR IN	1002	765	Sell	(23.7)	73	14	13	11	19	18	3	2	Great story, regulators actions in near term are a concern
RPL	RPWR IN	132	120	Sell	(9.1)	4	-81	337	1787	1	0	6	6	Avoid until a clarity emerges on gas supplies and coal use from Sasan fields for another 4000MW MP Power
Lanco	LNCI IN	288	205	Sell	(28.8)	27	38	10	8	19	17	2	1	Unfavourable price/cost for E&C, high leverage and dwindling support from internal accruals
IRB	IRB IN	142	130	Sell	(8.5)	94	136	19	8	18	26	3	2	Will likely be hit by rising interest cost

Source: Deutsche Bank, Bloomberg,

 # Ma 09 = to Dec 08
Ma 09 = Sep 08

Investment thesis

Section A: Despite sharp sell off….

Indian capital goods and utility stocks have fallen by 40-70% from the peak and 35-65% YTD. The DB capital goods index has underperformed the broad market by 16% YTD. We attribute the underperformance to increasing expectations of a slowing economy and worries about rising rates and delayed execution. A look at Bloomberg earnings shows that by and large the industrials sector has seen downgrades ranging for 14% in BHEL in the last 3 months to 8-12% in mid cap names such as Thermax, IVRCL etc. In the case of utilities, the downgrades have been far less, but earnings are now increasingly at risk as regulators are not allowing complete pass through of fuel cost.

…it's still not too late to sell

Industrial cycle

Fall in FCF/net income and rise in WC→ Order inflow slows-→Earnings get hit→fiscal push, monetary easing and structural reforms drive Orders→ Earnings pick up after 2 years

We believe that there is a continuing risk of further downgrades to India's GDP growth estimates. This leads us to believe that the capital goods sector, which has already been derated, stands the risk of further de-rating. The one year forward PE for stocks such as BHEL has come off from 28x to about 20x. Like-wise for L&T- the stock has come off from 45x to 22x. No economist in India is forecasting a recession- one has to keep in mind that over the last 20 years, India has not shown a negative GDP growth figure. However, there have been years of materially slower growth in GDP- which can be classified as economic downcycles. They were in FY92, FY97 and FY01 (when GDP growth fell by 300-500bps). We note that the current valuations of industrials are still at downcycle highs. 1-year forward P/E for BHEL (proxy of Industrials) at 20x is much higher than those at the beginning of the downtrends in FY00 and FY97 which were at 13x and 14x respectively. Apart from the macro data - which clearly show a slowdown in GDP growth - the key indicators to watch out for in a capital goods cycle are:

1. Sharp fall in FCF/net income as working capital cycle elongates
2. Order inflow momentum slows down as developers find their balance sheet stretched
3. A delayed impact on earnings (in some business models after 2 years) as operating margins get impacted from provisions in contractual damages, delays in implementation
4. Fiscal, monetary as well as structural initiatives of the government to kick start the next bout of investments

Power utility cycle

Rising discom losses→ Working capital of Genco rises→ Genco unable to get cost push→Genco slowdown existing project→Govt. steps in to repair discoms→Genco's financials improves→ Drives investments for next cycle

Despite the share price corrections, the valuations of utility stocks also represent peak-cycle multiples. EV/MW for Neyveli Lignite (using as a proxy for utilities), shows that the current valuations at US$1.5/MW are still higher than the average of last ten years of US$0.8/MW. The utility sector exhibits the following cycle stages:

1. Rising discom losses results in extension of debtor days to Gencos
2. Gencos facing higher interest and project cost do not get approvals from regulators etc. for hikes in the tariffs
3. Gencos slowdown their new projects and wait for more benign macro environment before kick-starting their projects
4. Authorities use a combination of fiscal as well as structural changes to repair discoms' balance sheets. They generally bring measures that could drive collections as well as loss reduction initiatives for discoms and often revitalise the balance sheet of discoms. Obviously the payment to gencos pick -up and gencos' balance sheets also show signs of strength and they move to next round of investment phase.

For both utilities as well as capital goods, our analysis shows that we are largely in stage 1 and 2. We believe that, earnings for some of the capital good stocks will trough about two years after start of an economic downtrend. However the impact on earnings of utility companies is much earlier. Accordingly, what really needs to be checked is not EPS numbers but deterioration in the balance sheet and cash flows. Changes in working capital ratios are generally the first signs of a reversal. Problems in working capital generally continue that negative trend for at least 2-4 years. Hence, with large scale deterioration in balance sheet likely over the medium term for both capital goods as well as utility sectors, we believe the recent derating in the stocks could well continue for the next 1-2 years.

Section B: Demand slowdown and execution delays

We are forecasting a sharp dip in order inflow as well as delays in project implementation. Our forecasts are made in the absence of any street estimates on order inflows, as the Street tends to focus almost exclusively on earnings estimates. The reasons for drop in order inflows include:

(i) Government planned expenditure may get stalled or pushed forward

A look at the progress of the government of India's flagship programme for development, Bharat Nirman – a government fiscal support programme for investment in roads, irrigation, housing, water supply, urban development, and social services – shows abysmal progress, especially in FY08. Note that FY08 is an election year. Anecdotal evidence from press reports suggests that this slowdown is largely due to a drain in government fiscal condition following higher steel and crude prices.

Capital costs have gone up by ~100% over the last 3-4 years, so as to reach at demand destruction levels

(ii) Commodity prices at demand destruction levels

High commodity prices have several adverse affects. First, the prices jeopardise the progress of many projects which get embroiled in disputes between equipment suppliers and developers. Second, they raise capital costs for new investments. Based on our survey of projects in different sectors, there has been a sharp jump in capital costs for projects in all large capital-intensive industries. The sharpest jump has been in cement and refinery projects, where capital costs have gone up by ~100% over the last 3-4 years. This is followed by steel project costs and finally power plants. Many central banks have taken various steps to slowdown the economy and thus curb this inflation. Obviously one of its consequences could be a pick up in order cancellation cycle. Our analysis suggests that in power alone, projects totalling 65,000MW of capacity are at risk of getting stalled, at least in the medium term. Note we are estimating commissioning of 51000MW of power plants in five-year plan period between FY07-12e.

(iii) Developers facing cash crunch

By and large, ~30% of the envisaged incremental capex can be funded by corporates

One of our biggest worries is the cash crunch that many developers face. A snapshot analysis of major corporate/business houses and their capex programmes shows that by and large only ~30% of the envisaged incremental capex can be funded. Our funding worries are driven by both rising cost of equity and debt funds. Equity risk premiums have shot up by 400bps, while the cost of debt has moved up by 200-500 bps depending on credit rating. Borrowing from the external commercial borrowing route (ECB) may not look lucrative if the rupee were to depreciate.

BOP orders for 4,590MW are stuck, and 30GW is yet to be ordered

(iv) Capacity constrains-the impact of downcycle

One of biggest hurdles of higher order inflows is the execution and manufacturing capacity of capital goods players. For example in power segment, order books for deliveries of main plant equipment are packed, at least for the next four years. .In power plant-the second big hurdle is capacity for supply of balance of plant equipment- namely ash handling systems, coal handling systems, chimney, water cooler etc. As of now one does not know the true capacity in the system- but approximately orders for 30000 MW are yet to be placed.

According to ministry of power, capacity in most of the BOP players is for supplies that can meet barely 6000-7000MW of supply on yearly basis. To make matters worse, BOP players are running behind schedules for supplies to 4,590MW (40% of the ministry of power's capacity addition estimate in FY09-10e). Effectively under such circumstances - we would be quite surprised if the government can meet its planned targets of adding 80000 MW over FY07-12e. The problems are similar in cement and steel projects.

(v) Structural issues and clearances

The total number of clearances required for cutting down a tree is close to 3,000

Spiralling land costs are just one factor that have an impact on selling land for projects; there are also several structural handicaps for implementing projects. Even for new housing complexes, land transactions involve a lot of clearances, some relating to toxic usage. The same is true for cutting down a tree – almost 3,000 clearances are required. Environmental norms have the potential to derail a project for ten years. And, most importantly, we find that so far only four private developers have managed to get coal from captive mines. The process from allocation to final output can easily take up to ten years, unless the structural issues are sorted out.

Section C: Sharp deterioration likely in FCF and balance sheet

Early signs of deterioration in FCF and balance sheet

We estimate all the companies in Indian infrastructure space to report lengthening of the working capital cycle in the future. FY08 was the first year in which almost all the companies reported lengthening of the working capital cycle. From the available data on balance sheet that we have received, ABB reported increase in working capital from 6.7% to 9% of the sales, BHEL's both debtor and inventory days increased by 20 days in FY08. Debtor days are now close to the cyclical highs last seen in 1997 and 2001. Areva T&D's debtor days at 187 days raises a question mark on their margins-which they claim as highest in the segment. L&T's management appeared cautious on the outlook for working capital and has guided for ratio of working capital to sales to rise by 400-500 bps over the next two years. Even NTPC, Tata power could see deterioration in working capital cycle. Press has reported that some of the discoms have held up payments to NTPC for unscheduled interchange charges.

Rising execution time and higher commodity prices are raising the uncertainty in earnings

The second problem we see in this space is rising execution time and higher commodity prices raising the uncertainty in earnings forecast. Last quarter's earnings were below expectations BHEL earnings were a huge disappointment. Larsen and Toubro managed to beat expectations, but the stock took a lot of hammering on concerns about losses in commodity hedging. Thermax missed its margin guidance, while ABB missed its revenue guidance. We would advise investors to get out of this group before earnings quality deteriorate and hits us hard on valuations.

Section D: Stock Picks

The only businesses we recommend are those with healthy free cash flow yields and less risk from the vagaries of down cycles

At this time of the economic down cycle, the only businesses we recommend are those with healthy free cash flow yields and less risk from the vagaries of downcycle. We have stress-tested our earnings models for companies under coverage for scenarios on (1) variation in revenue reorganisation or sales as we head into a slowdown; (2) impact of higher costs or lower profit reorganization; and (3) impact of extended cycle time for receivables. Our stress test leaves us with only one clear winner: ABB. BHEL's earnings model is robust. There are scenarios of risk of lower sales and margins which leave smaller cap companies such as Areva and Thermax largely exposed. Utilities are the biggest losers as far as lower revenues and rising credit costs are concerned.

Figure 2: Stock Pick

Company	Reco	Target price (INR)	Potential upside (%)	Company	Reco	Target price (INR)	Potential upside (%)
ABB Ltd India	Hold	835	(5)	Tata Power Ltd	Sell	765	(24)
Areva T&D	Sell	1000	(30)	Reliance Power	Sell	120	(9)
BHEL	Hold	1335	(9)	NTPC	Sell	135	(18)
IVRCL	Sell	225	(24)	Lanco	Sell	205	(29)
Larsen & Toubro	Sell	2000	(18)	Thermax	Sell	270	(28)
Siemens India	Sell	420	(11)	Voltas	Sell	100	(19)
				IRB	Sell	130	(8)

Source: Deutsche Bank, Bloomberg

Pair trade ideas

We have a broadly negative view on the sector, but for investors who desire a sector neutral positioning, we recommend the following sector neutral strategies:

1. **Long large caps vs. short mid caps:** We define the large cap basket as BHEL + L&T, with the mid-cap basket consisting of Areva T&D, Thermax and IVRCL. This strategy should pay off since by and large the bigger companies have better cash levels, greater diversity in projects and client base, and lower vulnerability to problems in one-off projects. In the case of a serious market liquidity crisis, there is a possibility that large caps may initially underperform as investors can take money out more easily than small caps.
2. **Long pure play vs. short diversified play:** Pure plays such as BHEL generally have better return ratios, FCF yields and lower capex intensity than diversified plays like L&T. Key risk – an acute slowdown in power sector capex.
3. **Long industrials vs. short utilities:** In a rising interest rate environment, developers could get squeezed into higher capital costs and the inability to pass on through tariffs. However, this strategy would fail if equipment suppliers take in more orders than that they can execute, which could lead to project liabilities.
4. **Long road utility vs. short power utility:** A good play, as toll roads have a better pass-through mechanism for cost increases and do not require regulatory clearance. However, this strategy would fail if road developers take on projects with zero NPV.
5. **MNC neutral - long ABB vs. short Siemens:** In all financial ratios, ABB is far superior to Siemens. However, this strategy would fail if Siemens were to go for a share buyback.

Figure 3: Our theme preference under various scenarios

								Quality of earnings and balance sheet strength					
Pair trade themes	**Stock Plays**	**Valuations (P/E)**				**Relative group performance (YTD)**	**Ability to withstand demand slowdown**	**Operating leverages**	**Ability to pass cost hikes**	**Diversification - counter cyclical business**	**Who can manage cash crunch?**	**Ability to overcome structural issues**	**Remark**
		G1		G2									
		FY09	FY10	FY09	FY10								
Large Cap vs. Mid Cap	G1 (Large Cap)=BHEL+L&T; G2 (Small Cap)=IVRCL, Areva, Thermax	23	17	18	15	4.2	G1	G1	G1	G1	G1	G1	Long G1 and Short G2 can work in scenario of higher credit crunch, demand shock. Key risk: A large sell-off in market
Pure Plays vs. Diversified	G1 (Pure Play)=BHEL; G2 (Diversified)=L&T	20	14	23	17	(2.5)	G1	neutral	G1	neutral	G1	G1	Long G1 and Short G2 can work in recession. Strategy would fail in case of perception of high risk
Utility vs. Capital Goods	G1 (Utility)=NTPC; G2 (Industrials)=BHEL	20	18	20	14	9.8	G1	G2	G2	G2	G2	G2	Long G2 and Short G1 can be a good strategy. Strategy would fail in case of perception of demand shock
Revenue exposure: Government vs. Private sector	G1 (Govt exp)=IVRCL; G2 (Private)=Thermax	13	11	13	12	7.3	G1	G1	G1	G2	G2	G2	Long G1 and Short G2 can work in recession. Long G2 and Short G1.
Power Utility vs. Road Utility	G1 (Road Utility)=IRB; G2 (Power Utility)=IRB	17	12	22	9	(9.8)	G1	G1	G1	G2	G1	G1	Long G1 and Short G2 would work as road utilities have better pass through. Strategy fails in case road utilities bid aggressively.
MNC neutral play	G1=ABB; G2=Siemens	26	19	21	15	7.4	G1	neutral	G1	G1	neutral	neutral	In all financial parameters ABB is better.

Source: Deutsche Bank, Bloomberg

Section A: Despite sharp sell off…..it's still not too late to sell

I Industrials: Valuations at cyclical peak levels

II Utilities: In for tough times

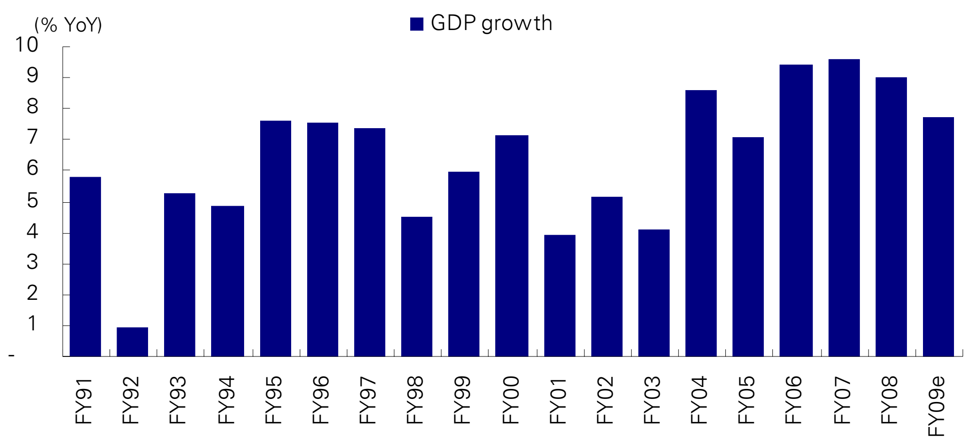
I. Industrials: Valuations at cyclical peak levels

Economic cycle has turned

Industrial cycle →Fall in FCF/net income and rise in WC→ Order inflow slows- →Earnings get hit→fiscal push, monetary easing and structural reforms drive Orders→ Earnings pick up after 2 years

We note that India has not experienced a single negative growth year or "recession" since 1991. However, there were 3 prominent downtrends in terms of GDP growth viz. FY92, FY97 and FY01. While no one is forecasting a sharp downtrend in GDP growth, a constant rise in inflation raises the risk of central bank trying to cut down on growth.

Figure 4: Downcycle has begun



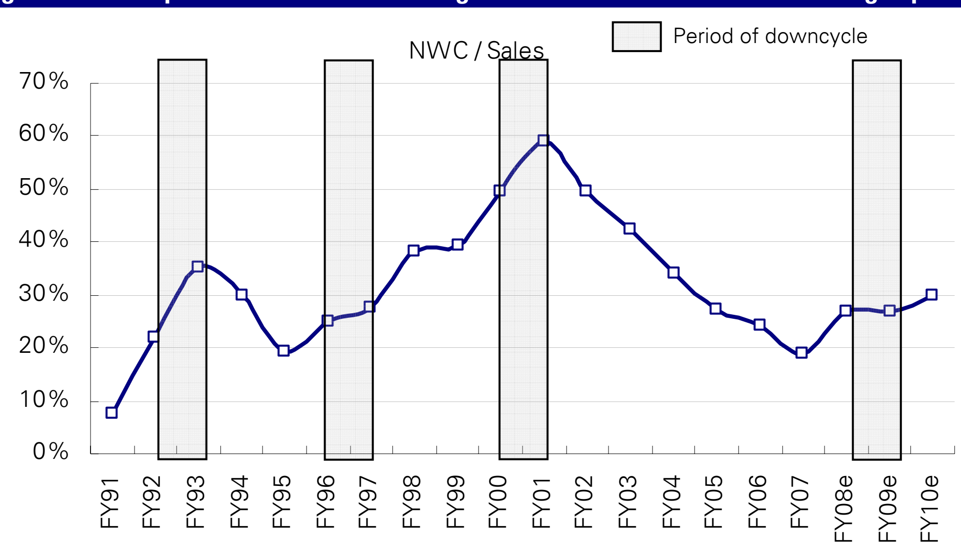
Source: Deutsche Bank, CMIE

Rise in working capital is a leading indicator of the downcycle

NWC as % of sales has risen from 20% in FY07 to 28%.in FY08e

Net Working capital/sales is good tool to estimate upturn and downturn Figure 5.

Figure 5: Assumptions do not factor in large-scale deterioration in net working capital



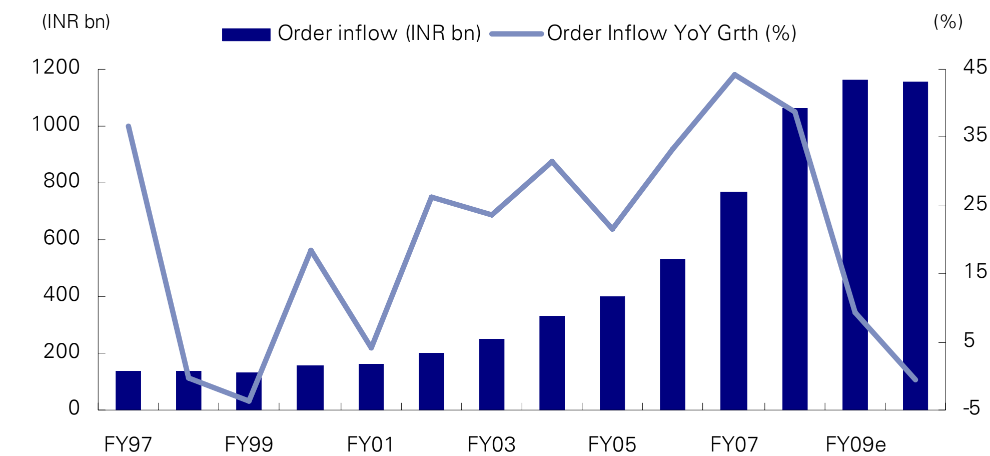
Source: Deutsche Bank, Company data, Prowess

We find that net working capital (as percentage of sales) rises during downcycles and falls during upcycles. As shown in Figure 5, this has already started, as NWC as percentage of sales has risen from 20% in FY07 to 28% in FY08e (a few companies have yet to report their balance sheets).

Watch out for slowdown in order flows

We estimate a slowdown in order inflows to start from H209 as developers find that high credit terms, rising capital cost and slower implementation resulting in much longer pay-back period vs. those envisaged earlier

Figure 6: Momentum in order inflow growth to taper off

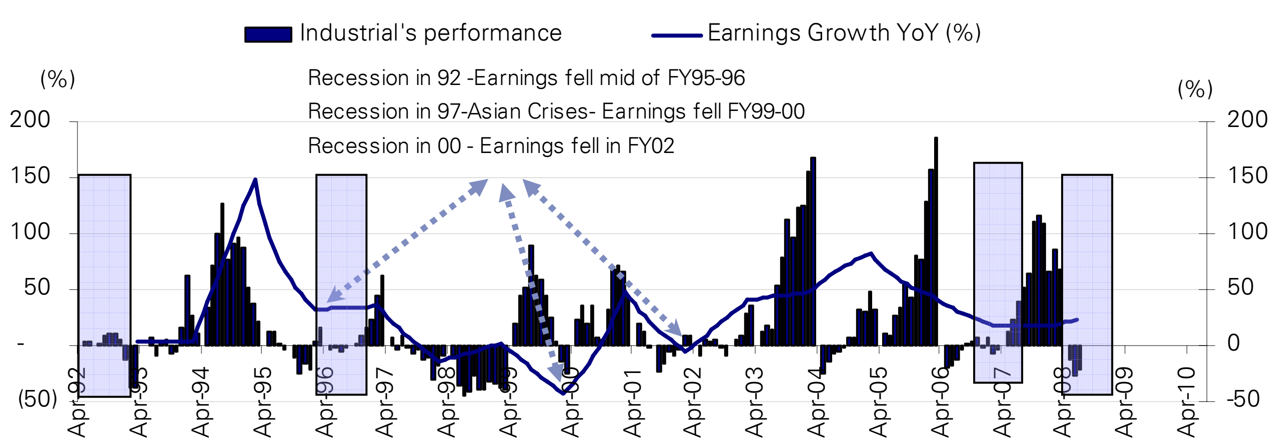


Source: Deutsche Bank, Company data, Prowess

Industrials EPS troughs several quarters after downcycle

A look at Figure 7 shows that the EPS of industrial companies trough much later than after economic downtrend.

Figure 7: Earnings drop much later than recession



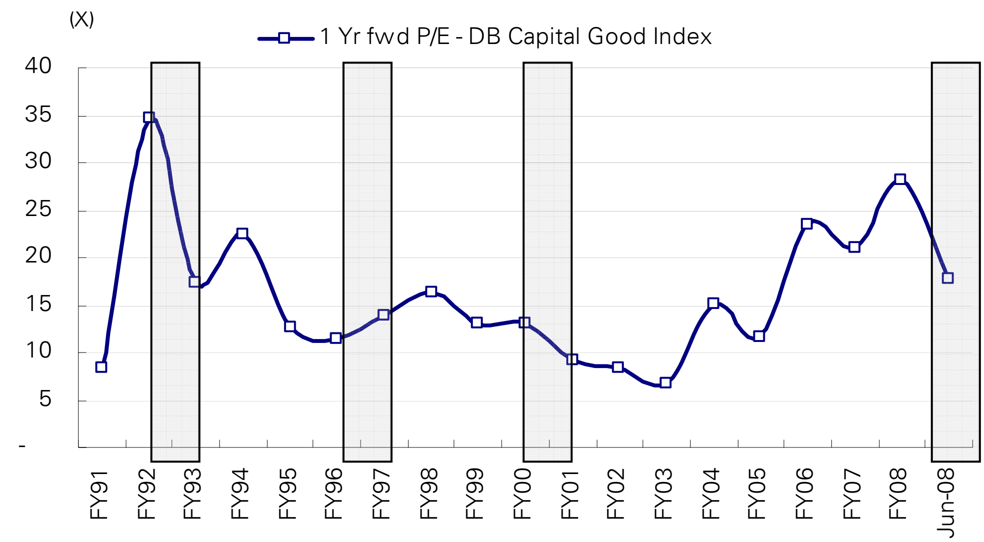
Source: Deutsche Bank, Bloomberg, CMIE,

Industrial PE still at cyclical high

Despite the sharp fall-off, -year forward P/Es for Indian Industrials (proxy of BHEL) are higher than those seen at the beginning of the downtrends in FY00 and FY97

Despite the sharp fall-off, 1-year forward P/Es for BHEL (proxy of Industrials) is higher than those seen at the beginning of the downtrends in FY00 and FY97. We have used BHEL as proxy as L&T's stock behaviour at times got impacted by divestments of cement, value unlocking of software division. ABB and Siemens have also gone through phases of restructuring -which at times does not give the correct impact of downcycle.

Figure 8: Industrial PE still at cyclical high



Source: Deutsche Bank, Company data, Bloomberg

FY92-93 was also the period of delicensing and potential long-term advantages to capital goods companies. Hence a comparison to that time may not be apt.

What is different about this cycle?

Most players in the industry have much healthier Balance Sheets than in previous cycles.

The recent upcycle was the longest one in the country- with fair dues to the benefits from the power sector reforms as well as capex for commodity sectors such as cement, steel, paper, refining and oil and gas. This is besides those in infra space – especially in power, roads, and ports and more recently, airports.

Figure 9: A walk through the past five cycles

	FY94-96	FY97-99	FY2000-02	FY03-07	FY08-10e	Remarks
	Up cycle	Down cycle	Down cycle	Up cycle	Down cycle	
Margins	16%	16%	12%	19%	20%	Better OPM this time around
NWC as % of sales	25%	36%	54%	27%	29%	Superior working capital
Debtor days	244	199	241	188	227	Debtor days beginning to hurt
FCF/Net Income	2-4x	Mostly zero to negative	Mostly zero to negative	1-2x	Expected to turn marginally negative	Previous downcycles resulted in FCF turning -2x net income while in the current down cycle the FCF/net income would be only marginally negative
Debt/Equity	30-40%	60-80%	100%	30-60%	40-50%	Comfortable debt:equity position vis-à-vis previous downcycle

Source: Deutsche Bank, Company data, Bloomberg, Prowess

Except for ABB and to a lesser extent Areva, we find none of the companies have really restructured their portfolios to shorter cycle segments

This cycle has left most players in the industry much healthier than in previous cycles. Balance sheets are much stronger. Our only worry is that except for ABB and to a lesser extent Areva, none of the companies have really restructured their portfolios to shorter cycle segments such as products and consumables. Yes, we have seen diversification – BHEL looking at oil rigs, platforms, railway engines, industrial motors and renovation and modernization in power plants – but the amount of business from these shorter cycle business is quite low. And except for renovation and modernization, none of these businesses can classify themselves as counter-cyclical. L&T has ventured into shipping and power generation. The good part is that they have exited commodity businesses such as cement and RMC. But they have not really extended their product platforms. Diversification for L&T seems to be more from a geography and segment point of view, not from a product and projects one. We would be happier if management would focus more on selling products for efficiency improvements, supply chain management, etc.

Anecdotal evidence seems to suggest that pricing power is waning

So far pricing power seems to be there. But we see pricing trends to reverse as order inflow slow down. Recent bid of L&T for 800*2 MW Krishnapatnam project at 25% lower price bid than BHEL suggest that equipment suppliers are getting a bit worried on pricing aspects.

Industrial stock picks

We arrive at our target multiples by considering a company's-

1. Comparison with the global peers/parent company: Our belief is that India remains a long term growth story notwithstanding medium-term cyclical downtrend as well as structural issues in implementation. Hence the floor for valuations could be peer comparison vs. European peers. Note that by and large Indian industrial companies have across the cycle RoE ranging from 200-600bps higher than their peers in Europe

2. Position in the cycle (taking net working capital as a proxy); We use trading and valuation history of only BHEL for the purpose of industrial valuations as other stocks have at times reacted to news flow on restructuring and corporate action. Other companies are valued at discount or premium to BHEL depending on how good or bad is the impact of working capital on FCF.

3. Robustness of the business model in the downcycle: Based on whether or not company has products to cater to capex in downcycle, we assign some premium or discount. For example, in downcycle corporates would by and large look for maintenance capex, capex for improving efficiency, automation and productivity rather than greenfield units and large turnkey contracts. Obviously, a company such as ABB and Siemens gets a premium as they have products for especially catering to a downcycle.

Figure 10: Summary of recommendations and target price

Company	Ticker	Target price (INR)	Current Price (INR)	Potential upside (%)	Reco	Comments
ABB Ltd India	ABB IN Equity	835	875	-5	HOLD	Exhibits counter cyclical traits
Areva T&D	ATD IN Equity	1000	1438	-30	SELL	Negative FCF yields, high leverage
BHEL	BHEL IN Equity	1335	1461	-9	HOLD	Implementation risk and cycle has turned around
IVRCL	IVRC IN Equity	225	295	-24	SELL	Guidance optimistic, low FCF yield
Larsen & Toubro Ltd	LT IN Equity	2000	2443	-18	SELL	FCF flow yield is negative,
Siemens India Ltd	SIEM IN Equity	420	472	-11	SELL	Management seeing pricing pressure
Thermax	TMX IN Equity	270	375	-28	SELL	Demand is weak,
Voltas	VOLT IN EQUITY	100	124	-19	SELL	Cycle has turned, guidance optimistic

Source: Deutsche Bank, Bloomberg

In the start of last downcycle BHEL traded at 14-17xPE during FY97-99

The following describes the key rationale for individual stocks:

1. **BHEL** We have assumed a target PE multiple for BHEL at 14.5x. At the start of the last downcycle BHEL traded at 14-17xPE during FY97-99. Note that at that time, the net working capital reached to 38-40% of sales from 19-25% during the pre-FY97 period. We believe that this cycle will be similar (in terms of increase in net working capital as percentage of sales). Hence we assign a P/E multiple of 14.5x FY10e which is at lower end of the previous downcycle multiple. This multiple is also comparable to that of Alstom in FY10e.

2. **ABB India:** We have assumed a target PE multiple of 18x CY09e for estimating the fair value of ABB India. This is about a 10% premium to lowest levels traded by ABB India over the last 14 years and represents our confidence in ABB management's ability to deliver superior performance even in the downcycle. ABB India enjoys superior RoEs and cash flows compared with its peers in India. Also, ~30% of sales are through channel partners that are largely consumables and exhibit good counter-cyclical traits. Note that ABB (parent) is trading at 15x CY09e. ABB India's RoE is 300-500bps higher than ABB AG (parent) and is among the best in this space for the scale of work done.

3. **Larsen and Toubro:** We have used SOTP to value L&T. The bulk of the value in SOTP is driven by the long-cycle and short-cycle engineering business. For the long cycle E&C business, we have assumed an exit PE of 14.5x, which is in line with that of BHEL. For L&T's short cycle business we have assumed a PE of 16x. This business is less prone to cyclical pressures of downcycles and has historically given a superior RoE and RoCE compared with core E&C business.

4. **Areva**: We have assumed the exit multiple for Areva at 15x 1-year forward (implying a 20% discount to ABB). Our key rationale for such a sharp discount to ABB's valuation are: (1) operating free cash of Areva T&D is negative, and is a big surprise as products form more than 40% of sales; (2) its capex is largely funded out of debt.

5. **Siemens India:** For Siemens, we have assumed an exit multiple of 16x. This is about a 10% discount to ABB as the stock price of Siemens India suffers from much higher risk of volatility in quarterly earnings and lower predictability of margins. Siemens is unlikely to introduce high-technology products in automation and the T&D space as they find India's market price sensitive.

6. **IVRCL**: The company has not reported positive free cash flows at operating level since FY06. It has infused capital by various routes during last two years (FCCB, QIP etc.). We do not expect operating cash flows to turn positive in next two years. IVRCL traded at 6-20x during FY04-08. Hence we assumed a target exit PE multiple of 6xFY10e which is at the bottom end of trading band to adjust for deterioration in cash flows and reversal of the cycle. The unlisted subsidiaries have been valued at NPV (COE of 15%), while the listed subsidiaries have been valued at market price

7. **Thermax**: We have assumed a PE multiple of 9x and DCF with CoE of 15% and terminal growth of 3%. Our medium term worry stems from the fact that the core business – supply of captive power plants – is at risk. User industry is unable to procure coal for captive power plants at a reasonable rate. Also, the capex programme is likely to hurt free cash flow generation and new capacity would be ready at time when the cycle is in deep recession, leaving management with the difficult choice of giving an entry pricing vs. covering variable cost of manufacturing. However, the stock deserves some premium to the construction companies as there is no holding structure

8. **Voltas**: For Voltas, we have assumed a higher PE multiple of 10x . We find the medium-term business environment for Voltas as a big challenge. Slowdown in the pace of construction of both retail as well as commercial space would hurt the demand of AC products. Management guidance of 33% CAGR over FY08-11e in sales and 200 bps improvement is optimistic. We forecast an EPS CAGR of 30% over FY08-11e. Key to

watch would be FCF and working capital cycle. We estimate that RoE would drop by 500bps during FY09-10e. Stock has traded in price band of 8x-32x over the last ten years. With the reversal in cycle, we believe that valuation multiple must be reset to that in the downcycle

Peer group comparison

Valuations of almost all the industrial companies in the world have come down following weak results, expectations of slowdown and risk to earnings, especially from cancellation of orders.

Figure 11: Comparative valuations

	17-July-08		-------EV/EBITDA----			-------------PE----------			----------ROE (%) ---			--EBITDA Margin --			EPS CAGR
	Price	Cur	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009-11e
Global Companies															
Hyundai Engineering & Construction Co Ltd #	57,800	KRW	14	12	NA	18	14	NA	18	16	16	8	10	NA	NA
Daelim Industrial Co #	82,900	KRW	7	6	4	7	6	5	17	19	22	11	13	16	22
ABB Ltd #	26	CHF	10	9	8	17	15	14	29	33	31	18	20	21	10
Kawasaki Heavy Industries Ltd	478	YEN	7	6	5	15	13	10	8	11	12	7	8	9	22
Mitsubishi Heavy Industries Ltd	760	YEN	10	9	8	27	25	20	2	3	4	8	9	10	18
Siemens AG ##	98	EUR	8	7	6	16	11	9	12	21	21	11	13	15	33
Alstom	114	EUR	10	9	8	18	14	13	11	24	27	10	12	13	20
Average of Global Companies			**9**	**8**	**7**	**17**	**14**	**12**	**14**	**18**	**19**	**10**	**12**	**14**	
Large Cap Indian Companies - Rated															
ABB Ltd India #	875	INR	16	12	9	26	**19**	15	37	**38**	36	15	15	14	33
Bharat Heavy Electricals	1,461	INR	12	9	7	20	**14**	11	32	**36**	36	21	22	24	37
Siemens India Ltd ##	472	INR	13	9		21	**15**		35	**39**		10	10		
Larsen & Toubro Ltd	2,443	INR	16	12		23	**17**		25	**28**		15	16		
Average of Rated Large Cap Indian Companies			**14**	**10**	**8**	**22**	**16**	**13**	**32**	**35**	**36**	**15**	**16**	**19**	
Mid Cap Indian Companies - Rated															
Areva T&D India Ltd #	1,438	INR	16	13	10	26	**22**	19	39	**33**	30	18	19	19	18
Voltas Ltd	124	INR	10	7	6	16	**12**	11	33	**31**	27	8	9	8	22
Thermax Ltd	375	INR	9	8	6	13	**12**	11	31	**22**	19	12	13	13	11
IVRCL	295	INR	10	9		13	**11**		15	16		10	10		
Average of Rated Mid Cap Indian Companies			**11**	**9**	**8**	**17**	**14**	**13**	**29**	**26**	**26**	**12**	**13**	**13**	
Indian Companies - Unrated															
Alstom Projects	379	INR	9	8	NA	15	14	NA	37	33	NA	11	13	NA	NA
Crompton Greaves Ltd	226	INR	10	8	9	17	13	NA	33	32	27	11	13	12	NA
Cummins India Ltd	237	INR	9	7	NA	13	10	NA	26	27	NA	15	19	NA	NA
Average of Indian Companies			**12**	**9**	**8**	**18**	**15**	**13**	**31**	**30**	**30**	**13**	**15**	**15**	

Source: Deutsche Bank, Bloomberg, Note: # = Dec year ending, ## - Sep year ending, Dec 08=Mar09

ABB India is now trading at similar multiples to those of ABB global despite ABB India's superior RoE across the cycle vs. ABB global. The same is true of BHEL and Alstom. The valuation gap between Siemens India and Siemens AG has also narrowed.

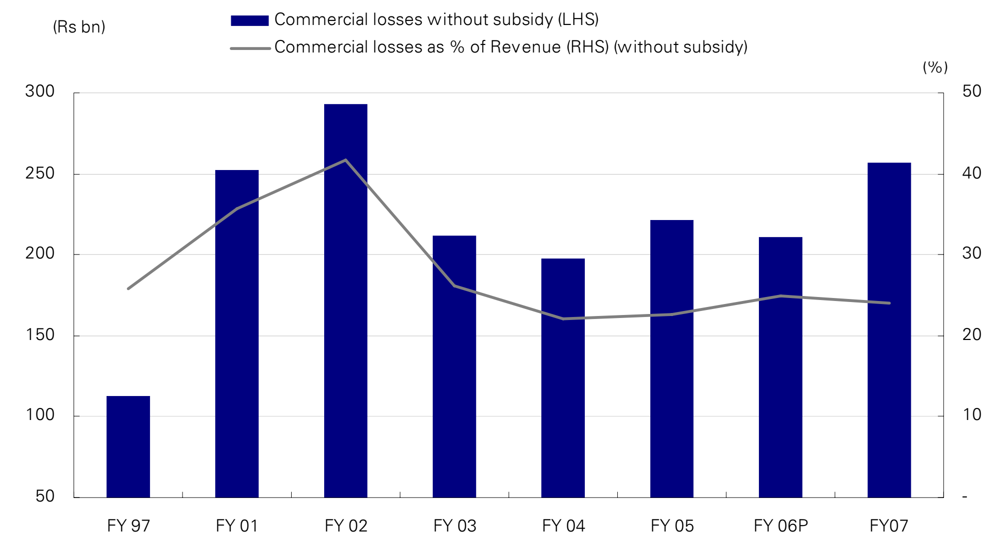
II. Utilities: In for tough times

Downcycle in utilities has just started

Power utility cycle→ Rising discom losses→ Working capital of Genco rises→ Genco unable to get cost push→Genco slowdown existing project→Govt. steps in to repair discoms→Genco's financials improves→ Drives investments for next cycle

The start of the downcycle in utilities is primarily heralded by rising losses of discoms. While we do not have formal forecast of losses for FY08 and FY09, a sharp jump in agriculture load seems to suggest that losses will increase at a sharp pace.

Figure 12: Rising loses- are the reforms behind us?

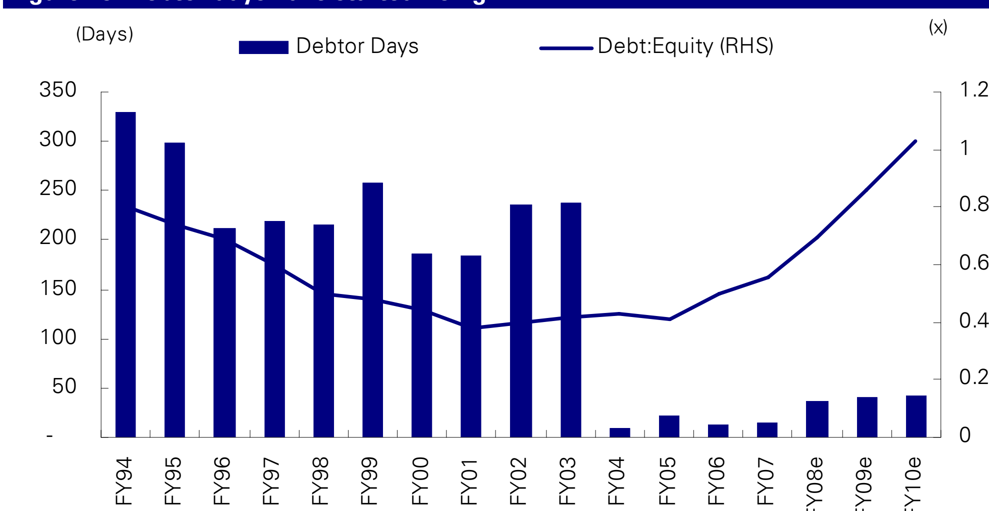


Source: Deutsche Bank, Planning commission of India

Working capital cycle elongates

One of the early signs of cyclical pressures building is the rise in the number of debtor days.

Figure 13: Debtor days have started rising



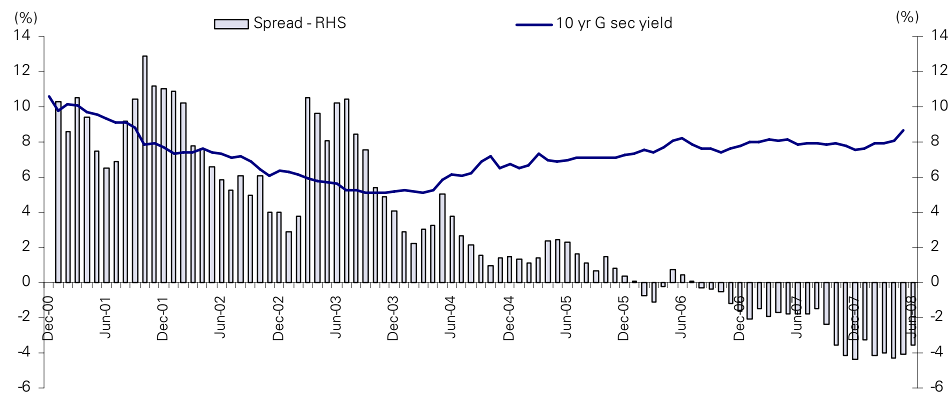
Source: Deutsche Bank, NTPC, Prowess

As per the press reports, it looks like discoms are not paying for unscheduled interchange charges. This does represent a serious drawback on reforms and grid discipline.

Valuations imply that returns from sector will remain high

Historically, in a falling interest rate power utility stocks in India have exhibited implied yields in the 5-10% premium to g-sec. After the power sector reforms in late 2003, the premium to g-sec declined to 2-3%. This could be due to several factors: (1) reforms in the Indian power sector that have led investors to believe that returns from investments in the sector could now be much higher; (2) the shift from a regulated environment to merchant tariffs; (3) allocation of coal blocks to the private sector for captive mining.

Figure 14: Spread between implied yield on power index and G-sec yield



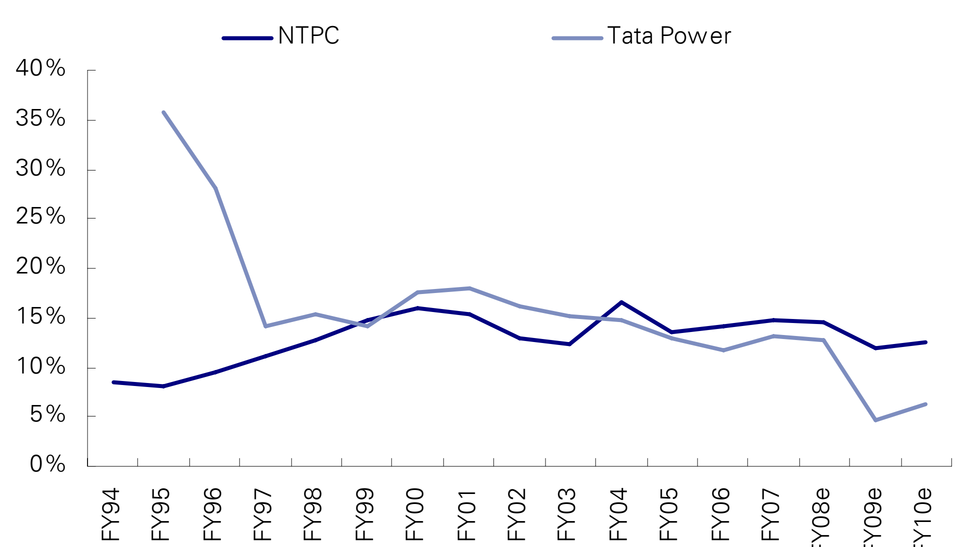
Source: Deutsche Bank, Spread = Implied yield on Power index less 10 year G-sec yield

However, in large part of 2007 and 2008, the implied yield for power utility stocks was at a discount to g-sec. This could imply that – (1) power business is less risky than g-sec; (2) adjusted for risk in power business, the return expectations (read RoE) is so high that we get negative spread over g-sec.

But we see RoEs have already peaked

And based on our assessment, RoEs are likely to see a major dip 2008 onwards.

Figure 15: A big fall in RoE



Source: Company Data, Powess, Deutsche Bank

While critics may argue that power developers would benefit from coal allocation and sales on the spot market as well as through open access, the fact remains that these are too distant a reality for most power developers. With a slowdown on the reforms front (loss reduction programmes for most distribution companies have taken a backseat), new projects suffer from additional risks: (1) difficulty in financial closure, (2) fuel security in the medium term, and (3) payment security. Accordingly, the valuations for most utility companies would again be on a multiple of price/book . The multiple would be contingent on ROE generated by the book. A very few business models having operating assets could indeed get the benefits of spot prices in the power sector (ruling at ~3-5x times regulated tariffs). This is especially true given good earnings reported by JSPL (unrated), the first business model in the utility sector whose tariffs are largely dependent on spot prices of power. We believe that business models need to be evaluated on a PE basis and the cyclical position of demand and supply.

Valuations rich for all utilities under coverage

We have used a combination of DCF and price/book to estimate the fair value of companies. The only exceptions are the trading business of Tata Power and business earnings of Reliance Power. Since Reliance Power is largely committed its capacity for selling in merchant power, we believe a combination of DCF and PE makes more sense.

We have raised our cost of capital assumptions for all the four companies in the utility coverage

We have raised our cost of capital assumptions for all the four companies in the utility coverage. This is due to rise in risk premiums. We have raised our beta from 1 to 1.5. Our beta is marginally higher, but that more than offsets the DB risk free rate at 8.2 % v/s 10 year g-sec yield 9.2%. A snapshot of the key assumptions and o/p is provided below.

Figure 16: Key assumptions for estimation of target price

	NTPC	Tata Power	Reliance Power	Lanco Infratech
(a) DCF/NPV Methodology	**3-stage DCF**	**2-stage DCF**	**3-stage DCF**	**NPV**
Explicit period	FY08e- 10e	FY08e- 10e	FY08e- 10e	FY08e- 10e
Semi-explicit period	FY11e - FY22e	FY11e- 17e	FY11e- 30e	FY11e- 30e
Growth in semi-explicit period (%)	3 (CAGR on FCF)	NA	8 (on FCF)	~2(CAGR on FCF)
Cost of Equity (%)	14	14	15	15
Terminal growth (%)	2	2	2	.0
Equity value (INR/sh)	115	200	98	72
Value from other business/investments etc.	-	471	-	
Value of E&C business(6xFY10 PE, road toll BOT business(NPV) and real estate at book value of investments				133
Total Equity value (INR/sh)	**115**	**671**	**98**	**205**
(b) Equity Value based on exit multiples of				
FY12e P/BV of 1.5x for existing assets, 1x for CWIP, investment + cash	155	-	-	-
FY10e P/BV of 1.2x for standalone generation + distribution assets, 1.5x for subsidiaries, 1x for new investments and other investments at book value	-	862	-	-
P/E of 8x on FY17e	-	-	143	-
Target Price (INR/sh) (average of (a) and (b)	**135**	**765**	**120**	**205**

Source: Deutsche Bank

Note that we have assumed a cost of capital of 14% for NTPC and Tata Power but 15% for Reliance Power. This is because the beta of NTPC and Tata Power is significantly lower than that of the utility index. Our terminal growth rate assumption of 2% looks reasonable as growth of free cash is assumed lower than the long-term GDP growth in India.

- **NTPC –** We have used an average of 3-stage DCF methodology and target exit P/BV multiple. Our DCF model gives a value of INR 115/sh. In addition, we have derived the fair value of NTPC through SOTP. In this methodology we have assumed exit P/BV of 1.5x FY12e (discounted at 15% to FY10e) for the operating power assets, 1x for the power assets under implementation, and 1x for investments and cash. We have valued the coal assets by the NPV methodology, which gives us a value of INR155/sh. By averaging the two methods we get an equity value of INR 135/sh.
- **Tata Power** – We have estimated the target price using SOTP. The individual divisions have been valued by either DCF /NPV /PE combination or price/book /NPV /PE combination. Unlisted investments are valued at book value. The combined value of stake in Bumi and Mundra UMPP is valued together is valued at INR91/sh at CoE of 15%. Investments in the listed space, i.e. VSNL (valued as DB's target price in VSNL). The DCF value assumes a CoE of 14% while all the new generation projects are valued at NPV (CoE of 15%). The DCF /NPV /PE methodology gives a value of INR671/sh. The exit price/book /NPV/PE methodology gives a value of INR862/sh. Note that we have assumed an equity dilution ~5% in FY10e to raise USD0.3bn so as to fund the capital investment for various projects under execution.
- **Reliance Power**. In the case of Reliance Power we have used a combination of DCF and PE of 8x FY17e to determine the value of the company. The average of these methods gives a value at INR 120/sh for the company
- **Lanco Infratech**: We have valued Lanco on a SOTP basis at INR205/sh. E&C division is valued at P/E of 6x FY10e giving a value of INR107/sh. This multiple is in-line with other mid-cap construction companies and represents the level of the bottom end of trading band for construction companies. The operating power assets of 514 MW are valued on a NPV basis at a CoE of 15% (risk free rate of 8.2%, risk premium of 4.7%, and beta of 1.5), giving a value of INR29/sh. Investments in real estate, new power projects (1705MW), and others are valued at the cost of investment. This gives a value of INR55/sh.

TP implies reasonable price/book

Figure 17 gives an assessment of the implied price/book value based on our target price.

Figure 17: Target price implies a P/BV of ….

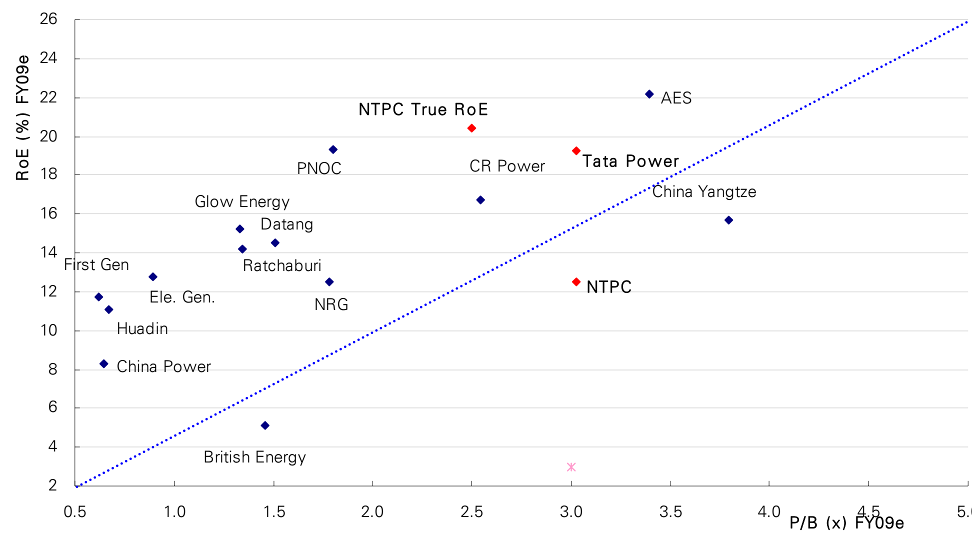
	NTPC	Tata Power	Reliance Power	Lanco Infratech
FY09e	1.9	1.7	2.1	1.4
FY10e	1.8	1.2	2.1	1.2
FY12e	1.5	1.0	1.9	0.8

Source: Deutsche Bank

Indian utility stocks under our coverage are currently trading at a significant premium to their global peers

As evident from Figure 20, the Indian utility stocks under our coverage are currently trading at a significant premium to their global peers. This is despite the fact that both these companies primarily operate in a regulated environment. As per our analysis, NTPC is estimated to make a business RoE of ~21-27% in the next 5-8 years, which is probably the highest for any utility stock globally. But the key concerns remain the regulator raising the bar for efficiency and rising distribution losses (currently close to their historical highs at 24% of revenues ex-subsidy).

Figure 18: RoE vs. P/B of global and Indian utilities



Source: Deutsche Bank, Company data, Bloomberg,

TP implies residual value of assets is below replacement value

Except for Tata Power, our target price implies that the valuations are below replacement value. The replacement value for NTPC would be largely at USD 0.3-0.4m/MW. This is because most of assets of NTPC have an average age of 12-13 years and are depreciated. The replacement value of Tata Power would be at ~ USD 0.7-0.8m/MW. Replacement value for Lanco Infratech could be anywhere between USD 0.7-0.9m/MW.

Figure 19: Valuations are near their replacement values

	NTPC	Tata Power	Reliance Power	Lanco Infractech
Operating capacities (MW)* as on Mar 31st				
FY08	27,717	2,368	-	518
FY09e	28,967	2,858	-	838
FY10e	30,627	3,078	300	1,208
FY12e	39,737	4,728	6,740	3,923
EV / MW (USD / MW)				
FY08e	0.4	1.6	NA	5.3
FY09e	0.4	1.3	NA	3.3
FY10e	0.4	1.2	13.9	2.3
FY12e	0.3	0.7	0.6	0.7

*Source: Deutsche Bank, Bloomberg, NTPC, Reliance Power, Tata Power, *for capacities with subsidiaries and joint ventures, NTPC's capacities reflect proportionate share*

Comparative valuation

With the sharp correction in Indian stock markets, especially for utilities, the valuations of Indian companies are similar to those of global peers. Tata Power may not be the best example as the earnings factor benefits from its stake in the coal mines of PT Bumi. On a price/book basis, Indian companies are trading at a premium to Asian peers. Part of the reason could be imbedded valuations of the coal mines and benefits from spot sales of power.

Figure 20: Comparative valuations

17 Jul 08			-------EV/EBITDA--------			-------------PE--------------			---------ROE (%) --------			---Price to book (x)-----		
	Price	Currency	M cap (m)	2008	2009	2010	2008	2009	2010	2008	2009	2010	2008	2009	2010
Global companies															
AES	19	USD	13,095	7.7	7.2	6.5	16.8	15.4	15.4	22.2	19.8	21.6	3.4	2.8	2.5
NRG	43	USD	10,581	7.9	6.7	6	20	15	15	10	NA	14	2	2	2
British Energy	700	GBp	5,015	9.9	10.3	5	18	17	17	6	5	15	1	1	1
DRAX	740	GBp	2,447	6.1	5.6	NA	9	9	9	60	49	NA	5	4	NA
Fortum	31	EUR	27,469	12.3	9.9	8.9	20.0	16.4	16.4	18.9	21.8	23.1	3.7	3.4	3.2
Ele. Gen.	84	THB	43,960	3.3	3.1	3.0	6.1	7.3	7.3	16.6	12.7	11.8	1.0	0.9	0.8
First Gen	27	PHP	485	3.8	3.4	3.2	5.5	5.6	5.6	13.4	11.7	10.2	0.7	0.6	0.6
Glow Energy	30	THB	43,155	4.4	5.2	4.0	9.7	10.6	10.6	16.1	15.2	16.1	1.4	1.3	1.2
PNOC	5	PHP	76,500	5.7	4.8	4.4	12.6	10.0	10.0	17.0	19.3	17.8	2.1	1.8	1.6
Ratchaburi	40	THB	58,363	6.9	6.6	6.4	9.3	9.9	9.9	16.4	14.2	11.4	1.4	1.3	1.3
Average of global Companies ex China				**6.8**	**6.3**	**5.3**	**12.7**	**11.5**	**11.5**	**19.6**	**18.7**	**15.7**	**2.2**	**1.9**	**1.6**
China Power	2	HKD	5,760	10.1	6.2	5.7	18.3	8.1	8.1	3.8	8.3	8.4	0.7	0.6	0.6
China Yangtze	15	CNY	119,936	18.8	18.1	16.6	27.1	24.8	24.8	15.2	15.7	16.4	4.0	3.8	3.6
CR Power	19	HKD	76,629	12.6	9.7	8.6	23.5	17.3	17.3	14.4	16.8	15.0	2.9	2.5	2.3
Datang	4	HKD	44,992	7.3	5.6	5.2	18.1	11.1	11.1	9.8	14.5	13.6	1.7	1.5	1.4
Huadin	2	HKD	10,745	6.9	5.6	4.9	21.1	6.4	6.4	3.5	11.1	12.8	0.7	0.7	0.6
Huaneng	5	HKD	55,535	6.8	5.1	4.4	14.2	9.2	9.2	8.4	12.5	13.6	1.2	1.1	1.0
Average of Chinese companies				**10.4**	**8.4**	**7.6**	**20.4**	**12.8**	**12.8**	**9.2**	**13.1**	**13.3**	**1.9**	**1.7**	**1.6**
Indian Companies															
NTPC	165	INR	1338651	11.5	13.7	13.3	18.3	19.7	18.1	14.5	12.0	12.5	3.6	3.3	3.0
Tata Power	1,002	INR	210562	15.2	10.4	10.1	22.2	12.8	11.2	13.8	19.3	18.3	3.6	3.0	2.4
Lanco	288	INR	60027	16.2	14.3	8.1	3.0	10.5	7.5	16.4	18.7	16.9	2.0	1.7	1.4
Reliance Power @	132	INR	306431	-	-	-	-	-	-	1.2	0.7	0.1	6.1	6.4	6.4
Average of rated Indian companies				**14.3**	**12.8**	**10.5**	**14.5**	**14.3**	**12.3**	**14.9**	**16.6**	**15.9**	**3.1**	**2.7**	**2.3**
CESC	310	INR	38785	7.2	6.7	5.5	11.0	10.7	9.4	13.5	11.9	11.7	1.2	1.2	1.1
Gujarat Inds. Power Co.	70	INR	10572	5.2	5.4	3.2	8.2	8.6	5.9	11.1	9.5	13.6	0.9	0.9	0.8
GVK Power Infrastructure	30	INR	42527	18.1	13.0	8.3	28.9	24.0	16.8	8.4	6.9	10.7	2.0	1.8	1.6
Power Grid Corp of India	78	INR	329973	NA	NA	NA	20.1	NA	NA	12.4	NA	NA	2.3	NA	NA
Average of Indian companies				**11.8**	**10.3**	**8.0**	**15.3**	**13.5**	**11.4**	**13.4**	**13.5**	**14.2**	**2.2**	**1.9**	**1.7**

*Source: *Deutsche Bank, Deutsche Bank estimates for Global companies, Bloomberg for Indian companies, the above companies are not covered by the author(s) of this report. Details of coverage, ratings and target prices may be found on http://gm.db.com. Note@ We have not considered for averages*

Section B: Demand slowdown and execution delays ahead

I: Demand slowdown

Infrastructure investments getting pushed out

Investment in roads, irrigation, housing, water supply, urban development, social services. shows abysmal progress

Due to steep increases in subsidies for fuel and fertiliser following sharp rise in crude oil price, the government's fiscal position can deteriorate, thereby putting pressure on planned expenditure, the bulk of which is related to infrastructural investment. One example is Bharat Nirman, a government fiscal support programme for investment in roads, irrigation, housing, water supply, urban development, social services, etc. Progress has been abysmal, especially in FY08. This is all very strange – since FY08 is a pre-election year.

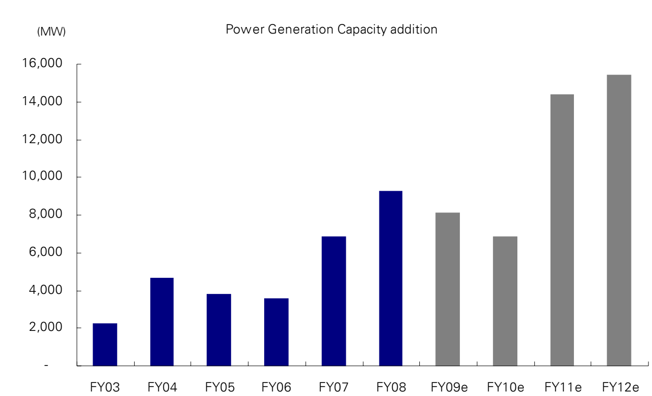
Figure 21: Bharat Nirman programme indicates slowdown in execution

Category	Unit	FY06	FY07	FY08	Remarks
Roads	Kms	18,054	21,423	16,207	Numbers of kms added have reduced considerably
Irrigation	Area ('000 hectares)	1,677	1,942	988*	Irrigation showing a slow down
Housing	No of houses		1,448,818	82,090	Housing shows the biggest slump
Water Supply	Habitations	97,215	107,350	152,479	Showing a healthy growth trend

Source: Deutsche Bank, www.planningcommission.nic.in

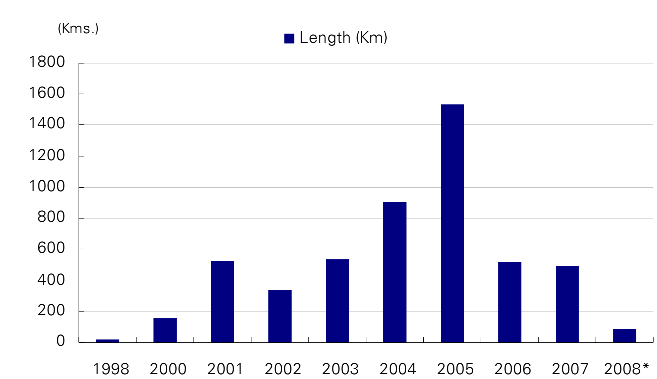
It looks like high energy prices have been a drain on government financials. While there may be other reasons such as capacity of equipment suppliers, these problems would also be inherited by the new government. Effectively there would be a minimum of two years of slowdown before work can restart. Even progress in the power and road sectors, the two of the largest contributors to investment in India, shows signs of tapering off for the next two years.

Figure 22: Power investments 2/3 of target



Source: Deutsche Bank, Central Electricity Authority

Figure 23: Roads – when does this show a pick up?

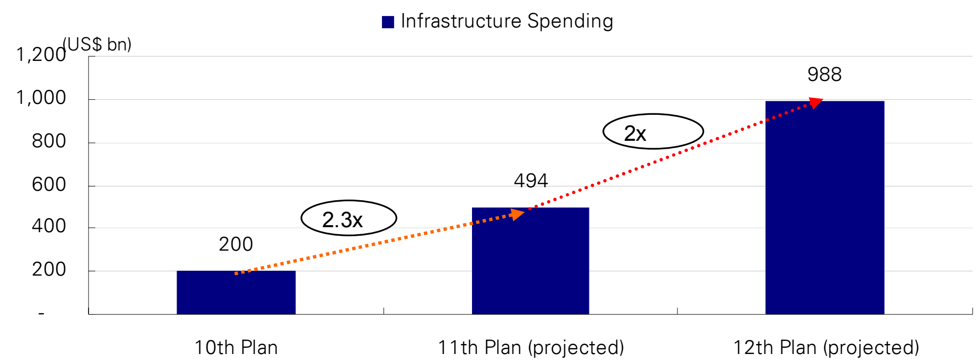


Source: Deutsche Bank, NHAI, Ministry of Road Transport and Highways

XIth Plan implementation may at least be 50% short of target

More importantly, if actual progress is compared with the government's vision, it looks like the XIth Plan implementation may at least be 50% short of stated plans. Obviously, this has implications for overall investment in the economy.

Figure 24: Infrastructure investment plans now seem to be a mirage!



Source: Deutsche Bank, Planning Commission

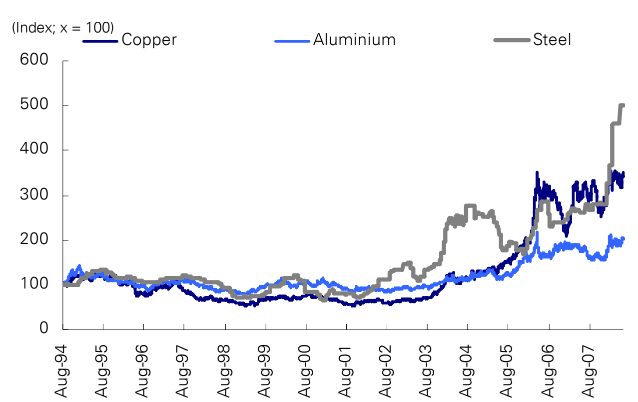
Commodity prices at demand destruction levels

We believe that the current level of commodity prices creates three major problems for project implementation.

First, a sharp rise in commodity prices disrupts ongoing projects

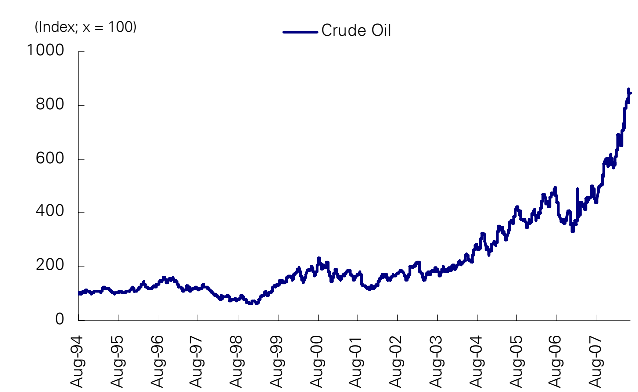
According to press reports, the 1,980MW Barh-I power project of NTPC has come to a standstill following a dispute between NTPC and its two Russian equipment suppliers – Technoprom Exports and Power Machines. This situation is so bad that the central government for the first time is looking to constituted Empowered Group of Ministers (EGoM) to speed up NTPC's troubled INR87bn project, which has been stalled for nearly two years. The decision to form an EGoM comes at a stage when core equipment suppliers to the Barh thermal venture are demanding close to an INR6bn hike in the contract value on account of hikes in steel prices and other input costs. In fact, the EGoM is slated to specifically address the rise in steel prices and other input costs and its consequent impact on NTPC's Barh superthermal venture.

Figure 25: Metal prices at historic highs



Source: Bloomberg

Figure 26: No respite from crude oil prices



Source: Bloomberg

Crude prices are playing havoc in a different manner. Most construction machinery runs either on diesel or on furnace oil. The rising cost of crude has meant spiralling prices for refined products – so much that it is hurting both developers equipment suppliers.

Capital costs have gone up by ~100% over the last 3-4 years

Second, the rise in commodity prices also raises capital cost for new investment
Based on our survey of projects in different sectors, there has been a sharp jump in capital cost for projects in all large capital-intensive industries. Figure 27 presents a snapshot of a few of the sectoral trends. Effectively, the project cost has leapfrogged vs. that over the last three years.

The sharpest jump has been in cement and refinery projects where capital costs have gone up by ~100% over the last 3-4 years. This is followed by steel project costs and lastly by power plants. The capex in oil sector is contingent on a variety of parameters such as deep water; on-shore/off-shore and political risk.

Figure 27: Most sectors have seen 30-100% cost escalations for new projects

Sectors	Unit	1994	2004	2008	Remarks
Power plant (sub critical coal based)	INR mn/MW	25	40	47-52	Does not factor land cost escalations
Greenfield cement plant	US$/t	60	80	180-200	International cost rise is even sharper
Refinery having high complexity	US$/bbl	n/a	30	60	Saudi Arabia new refinery, BPCL, HPCL is double cost of RIL India
Integrated steel plant	US$bn/mt	0.7	1.0	1.5-1.6	Proposals of Arcelor in India shows huge escalation
Oil	US$/bbl	4-8	25-40	40-75	Sand to oil project in Canada has a capital cost of USD75/bbl

Source: Deutsche Bank, Company Data

Even though the rise in end-commodity prices has been greater than that in capital costs, we don't see a plethora of investments in the sector. On the contrary, investments seem to be declining. Perhaps corporates are not very comfortable with commodity prices sustaining the current levels. Also the pay-back period continues to be high.

Figure 28: Historically high commodity prices have not brought down pay-back period

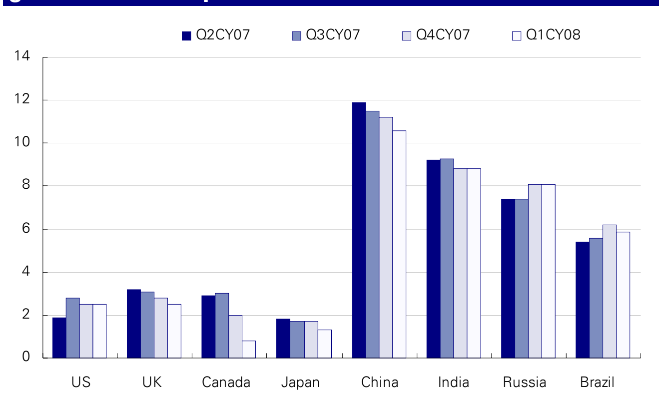
Payback period (years)	2004	2008	Assumptions
Power Project	7-10	7-8	Assumes 25% power sales at spot rate of INR 3/unit
Cement Project	5-7	7-10	Assumes government control on prices continue for next 2 years
Refinery Project	5-6	5-7	Assumes USD 10/barrel as refining margins
Steel Project	7-9	9-12	Assumes operating profits at Q1FY09 levels ~ USD 150-250/t

Source: Deutsche Bank, Company Data

The WB expects world economic growth to slow from 3.7% in 2007 to 2.7% in 2008

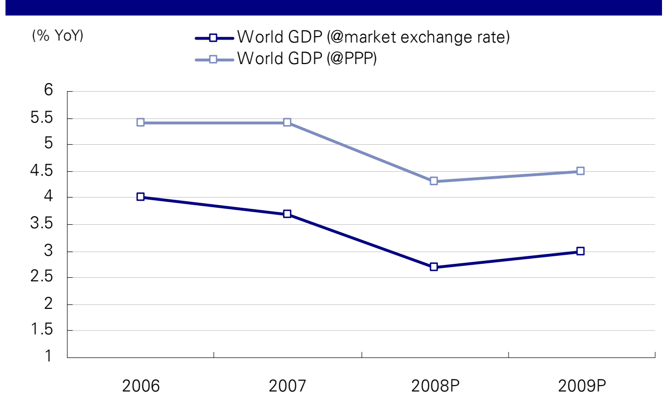
Third, rising inflation forces the central bank to moderate demand growth expectations
Demand in many countries is slowing, which puts the demand growth of these commodities at risk. The World Bank expects world economic growth to slow from 3.7% in 2007 to 2.7% in 2008, before picking up to 3% in 2009 (in market exchange rates).

Figure 29: Only Brazil and Russia have shown GDP growth in last 4 quarters



Source: Deutsche Bank, Bloomberg

Figure 30: World GDP growth to decelerate by 100 bps



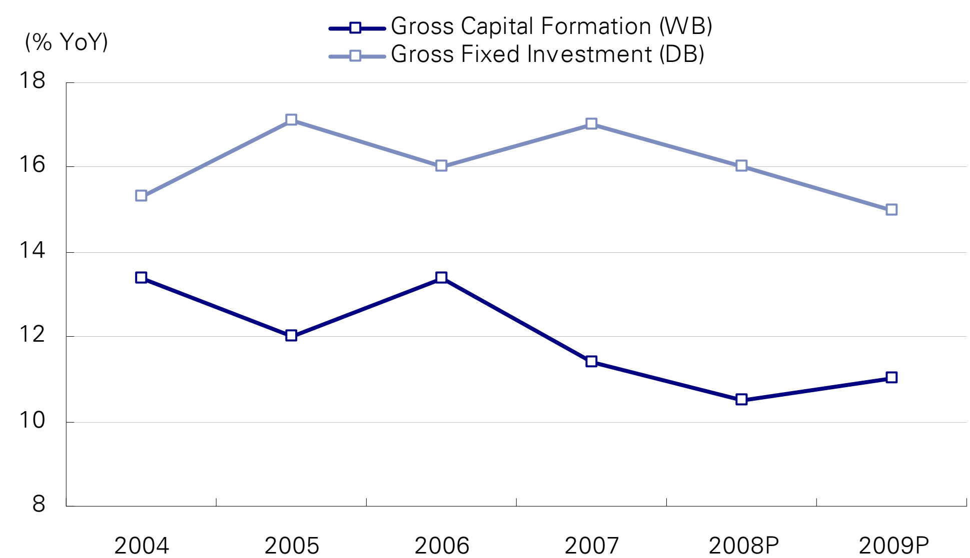
Source: Deutsche Bank, World Bank

The World Bank update reflects that China's economic growth has moderated partly due to less buoyant investment

Of these countries, the most important one to watch is China. In line with slower growth elsewhere, China's GDP growth has moderated so far in 2008. Having peaked in Q207, Chinese GDP growth slowed to 10.6% in Q1CY08, as the impact of a gradually weaker world economy was accentuated by the impact of the February snowstorms. The moderation of growth in 2008 in part reflects less buoyant investment.

Nominal urban fixed asset investment grew over 25% yoy in the first four months, broadly unchanged from the 2007 average. However, adjusted for the rising pace of increases in the prices of investment goods, real urban fixed asset investment slowed from 21% in 2007 to 16% in the first five months of 2008.

Figure 31: China's capital formation drops…



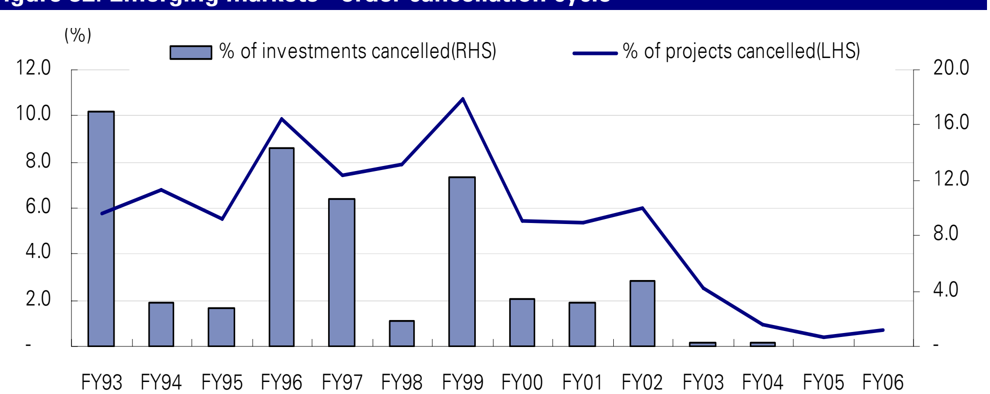
Source: World Bank, Deutsche Bank

Are we headed towards an order cancellation cycle?

10% of orders face the risk of cancellation during a slowdown

Our worry in the impending slowdown is order cancellation risk. Based on the World Bank study of emerging markets (including India), we find that approximately 10% of orders face the risk of cancellation during a slowdown.

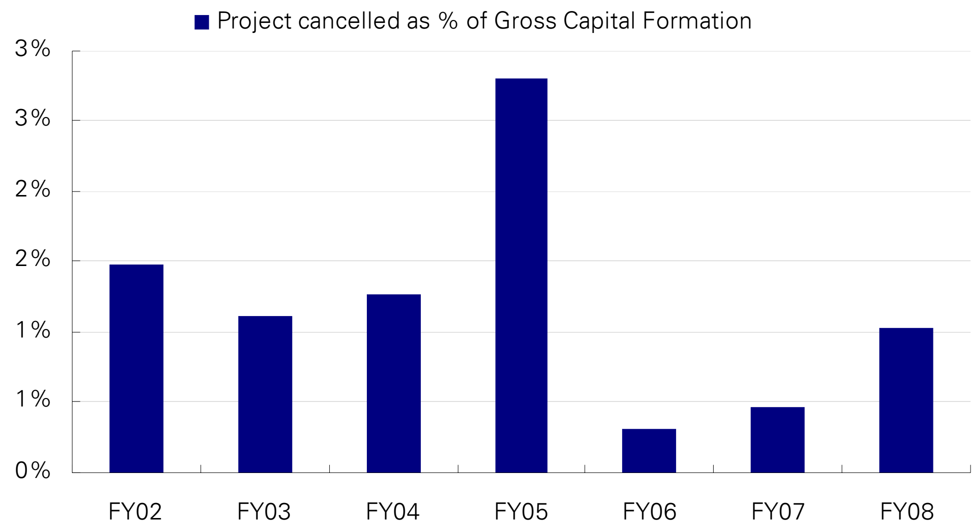
Figure 32: Emerging markets - order cancellation cycle



Source: World Bank, Deutsche Bank

While we lack the long time-tested data over the cycle for the cancellation of orders in India, over the last six years a peak of 3% of orders got cancelled (in FY05). We need to wait to see the extent of the damage to both equipment suppliers and developers from order cancellation in an impending cyclical downtrend in India.

Figure 33: So far, no more than 3% of projects cancelled in India



Source: Projects Today Deutsche Bank

Projects in the planning/execution stage that are at risk of being shelved/stalled are shown in Figure 34. Effectively, capex of INR1,816bn (USD 42bn).

Figure 34: Projects that could potentially face hurdles and have a risk of getting stalled or delayed

Developer	Sites	Capacity (MW)	Project cost (INR bn)	Remarks for delays/stall
ABAN	Faridabad II	1,050	46	Funding
Abhijeet Group	Mihan CPP Unit 1, Jayaswal Mega PP Ph II	885	39	Funding
Birla	Aditya TPS	1,000	44	Equipment not yet ordered / Government clearance pending
BPL Power	Ramagundam power project	600	26	Equipment not yet ordered / Government clearance pending
Brakel	Jhangi-Thopan HEP	480	3	Equipment not yet ordered / Government clearance pending
CESC	Orissa TPP, Haldia Ph I &II	2,800	123	Equipment not yet ordered / Government clearance pending
DB Power	TPP	1,320	58	Funding
Emco Energy	Warora TPS	540	24	Equipment not yet ordered / Government clearance pending
Essar	Hazira CCPP Expn.	1,200	4	Fuel Linkage
GMR Energy	Talong HEP, Holi Bajoli HEP	340	2	Government clearance pending
Private Player	Nigrie TPP, Hirong, Lower Siang , Kynshi II, Umngot I	4,245	63	Funding , Equipment and Government clearance pending
Private Player	Orissa TPP, Jharkhand TPP, Gujarat TPP, West Bengal TPP	6,400	282	Funding , Equipment and Government clearance pending
Kannur Power	Kannur CCGT GT+ST	513	2	Funding , Fuel Linkage and Government clearance pending
KSK Energy	JR power project, Wardha Naini PP	3,600	158	Equipment and Government clearance pending
Lanco Group	TPP , Kondapalli expansion	1,600	54	Funding , Fuel Linkage and Government clearance pending
Madras Refinery	IGCC project, Madras Refinery	500	22	Government clearance pending
Nirma Group	Bhavnagar Lignite	250	11	Equipment and Government clearance pending
NLC + CCL JV	North Karanpura	1,000	44	Equipment and Government clearance pending

Figure 34: Projects that could potentially face hurdles and have a risk of getting stalled or delayed (Cont'd)

Developer	Sites	Capacity (MW)	Project cost (INR bn)	Remarks for delays/stall
NTPC	Kawas CCGT II , Jhanor Gandhar CCGT II , Kayamkulam CCPP, Lara STPP , Etalin, Attunli	13,050	218	Fuel Linkage for gas project & Clearances for hydro and Orissa TPP
Reliance Power	Dadri CCPP (Ph-I & Ph- II) , Shahpur Gas, MP Power TPP Unit 1-6, Urthing Sobla , Tato II, Siyom, Kalai	18,740	232	Projects have a risk of getting delayed. Fuel linkage clarity, MoEF clearances for few
S Kumars	Maheshwar Project	400	18	Funding
Shapoorji Pallonji	Raigad TPP	1,000	44	Equipment and Government clearance pending
Tata Power	Auranga TPP , Shahpur Coal , Darlipali Integrated TPP	5,800	255	Equipment and Government clearance pending
Torrent Power	Pipavav TPP	1,000	44	Equipment and Government clearance pending
	Grand Total	**68,313**	**1,816**	

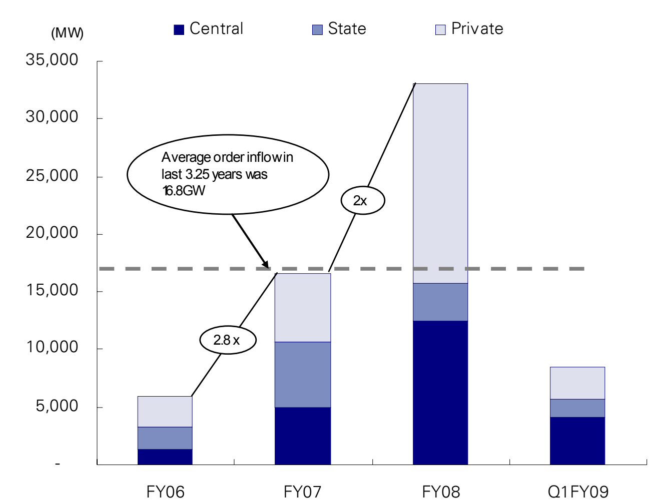
Source: Deutsche Bank, Companies, CEA, Various publications

Overall, we expect demand moderation over next three years

Bottom-up analysis on the new project awards suggest that the run-rate of new orders could drop by 20% under best-case scenario and up to 44% in a pessimistic scenario

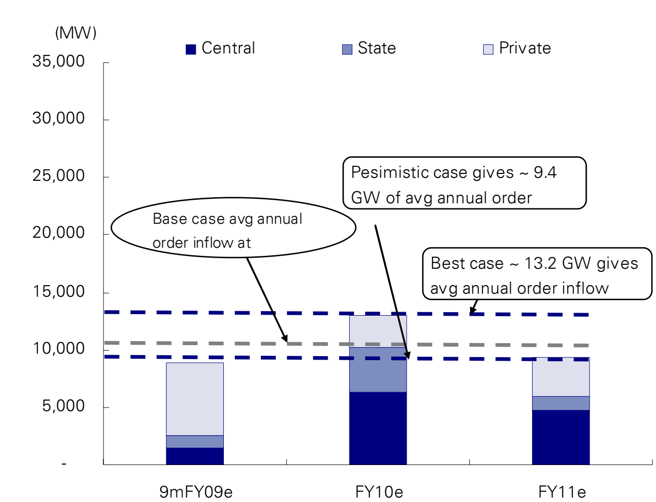
The biggest category for new project ordering is the private sector. Over the last three years, the private sector ordered power equipment of 28,545MW in new capacity. Ordering from the central sector was surprisingly lower at 22,902MW by power plants. The state sector was the lowest at 12,482MW. We believe that there is obvious sentiment in the private sector for a major turnaround. India is hugely deficit in power and we expect returns could be quite high. Indeed, we believe that most private developers are looking at arbitrage for coal and superior project management skills.

Figure 35: Order inflow of last three years



Source: Deutsche Bank, CEA

Figure 36: Expected order inflow for next three years



Source: Deutsche Bank, CEA

While it remains to be seen how much of the ordered capacity would finally see the light of day, our bottom-up analysis on the new project awards suggests that the run-rate of new orders could drop by 20% under a best case scenario and up to 44% in a pessimistic scenario. The actual may be somewhere in between and our estimates show that new awards from hereon would be about 30% lower than those seen over the last three years. The biggest risk in our calculation is gas availability for new projects. We have extrapolated the policy decision of a group of central ministers over the next five years. According to the policy, gas from new gas finds would have priority in distribution in the following order: 1) fertiliser, 2) captive power, 3) city gas, and 4) power plants. That leaves hardly any gas for new power plants.

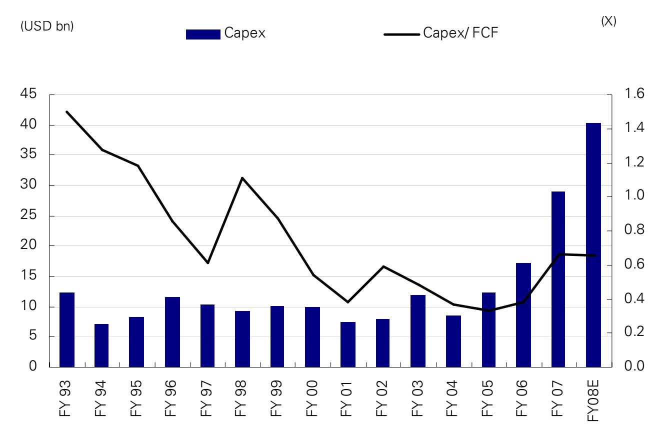
II: Execution delays: Tale of 3 Cs-Cash, Capacity, Clearances

Cash looks to have dried out

Over the last three years, the biggest comfort from the capex programme has been the cash levels on the balance sheets of most of the large corporates

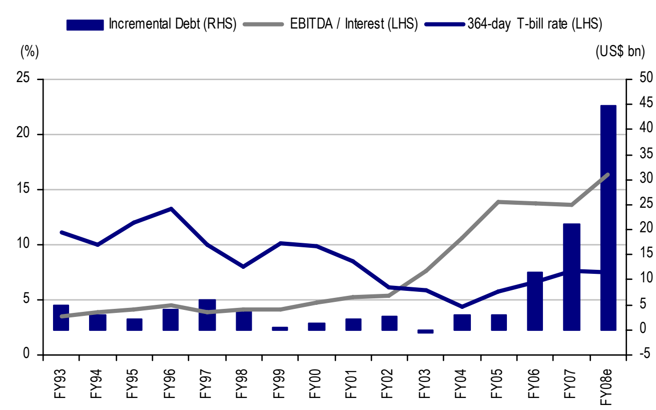
Over the last three years, the biggest comfort of the capex programme has been the cash levels on the balance sheets for most of the large corporates. Given the low net debt to equity and high free cash generation, the general market perception (including ours) was that investments from corporates would be quite strong. Figures 37 and 38 give a consolidated picture of financials of the top 200 companies in India as tabulated by BSE-200, excluding financials. Looking at Figure 38, even if corporates were to raise the debt to equity ratio to slightly greater than 1.2, we believe that they could still raise an additional USD100bn of cash for investments – which augurs well for new investments.

Figure 37: Strong free cash flow



Source: Deutsche Bank, CMIE, Reserve Bank of India

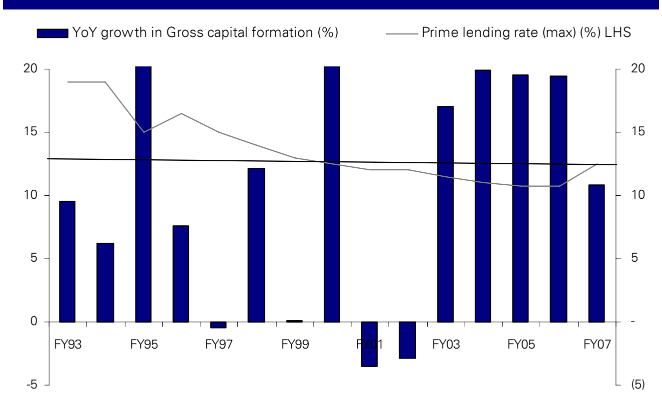
Figure 38: Debt vs. rate



Source: Deutsche Bank, CMIE, Reserve Bank of India

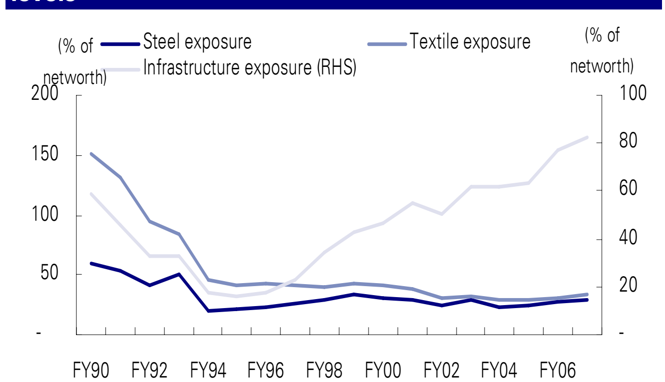
Historically, the interest rate by itself has not deterred investment.

Figure 39: Interest rates have not deterred investments



Source: Deutsche Bank, Reserve Bank of India, CMIE

Figure 40: Infra exposure is far from reaching alarming levels



Source: Deutsche Bank, Reserve Bank of India

No more than 30% of envisaged incremental capex can be funded

Problem is few developers look to have gone overboard

However, if we were to tabulate the power and commodities spend for a select few of these companies, we believe that we would find that they are short of funds for their stated time-bound project plans. A snapshot of major corporate/business houses and their capex programmes show that no more than 30% of the envisaged incremental capex can be funded assuming debt to equity of 70:30.

Figure 41: Funds required for future capex in next 3-5 years

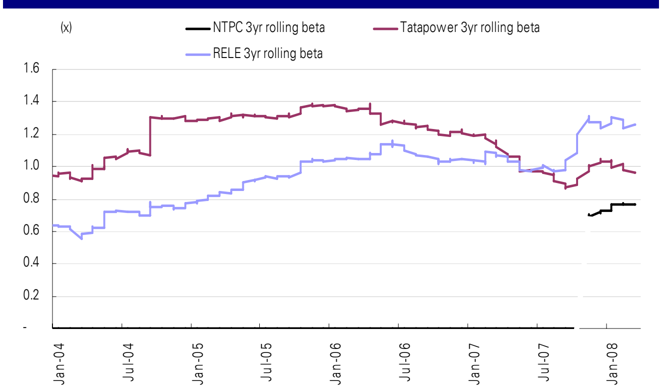
Sectors	New Capacity envisaged	Funds required (INR mn)	Equity funds available (INR mn)	Proportion of capacity that can be funded (%)	Remarks
Power-Generation	~ 100500 MW; 20,000 already ordered	3,567,705	363,452	27	Additional 7,000 MW can be ordered with existing funds
Power-T&D	~ 95,000 ckm of transmission line + 95,000MVA of substation capacity	498,000	NA	NA	New orders / awards to be placed for ~48000 ckm + 85000 MVA. Currently, SEB losses are at 24% (FY07)
Metals	NA	2,139,816	675,047	NA	Projects which are currently under implementation are considered
Cement	80 mnt	210,731	68,930	65	About 32.7 mnt of capacity is to be funded, Assumed capex of USD 150/t
Oil and gas (excl Reliance)	NA	2,447,410	1,735,849	NA	Projects which are currently under implementation are considered

Source: Deutsche Bank, Ministry of Power, CEA, Ministry of Petroleum and Natural Gas, CMA, Projects Today, Ingrained

At a time when cost of financing is going up

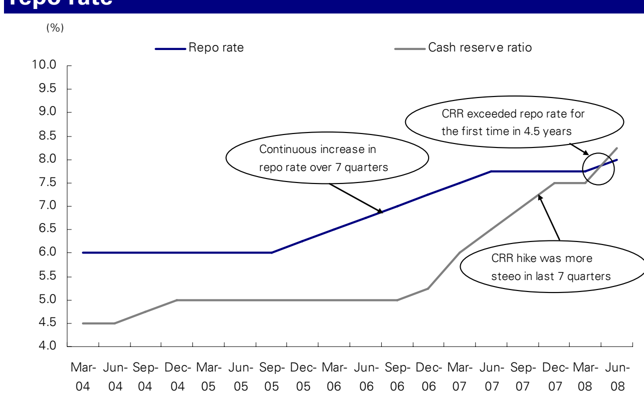
Our worry from funding is driven by both the rising cost of equity and debt funds. Risk premiums in equity have shot up 2-5%. Likewise, the RBI has signalled a tight monetary policy by raising both the repo rate as well as the CRR.

Figure 42: Three-year rolling beta of utility companies



Source: Deutsche Bank, Bloomberg

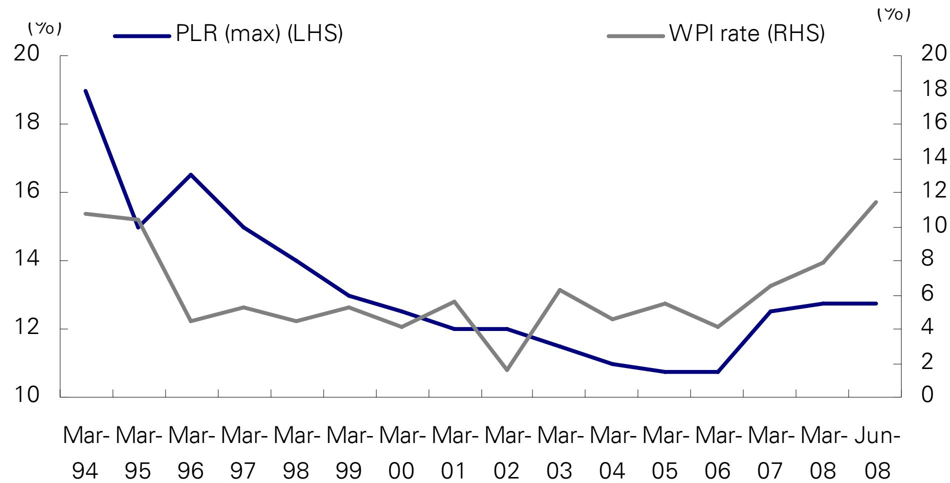
Figure 43: Monetary policy measures by RBI – CRR vs. repo rate



Source: Deutsche Bank, Reserve Bank of India, CMIE

With real interest being negative, the current interest rate regime signals an expansionary economy. This does not seem to be in sync with the policy measures announced by RBI. Accordingly, one would not rule out more hikes in the PLR. A few institutions could raise the PLR to 16%.

Figure 44: Real interest rates are still negative

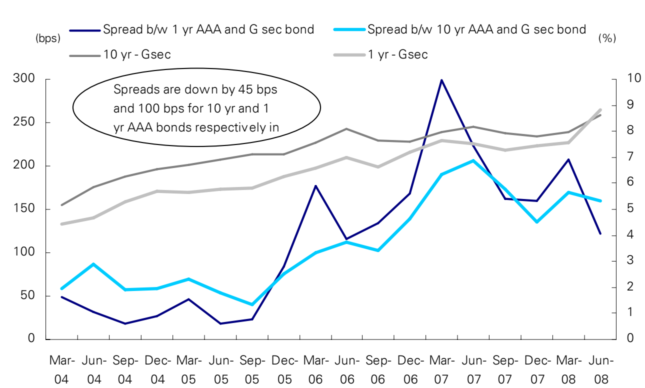


Source: Deutsche Bank, Reserve Bank of India, CMIE

Highest downgrades are in commodity and real estate

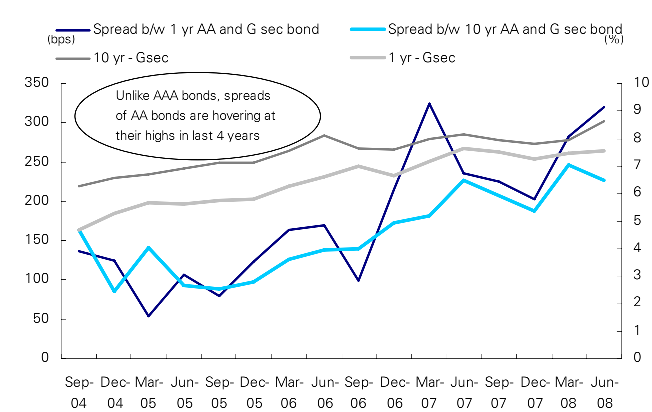
According to our banking analyst, "Real interest rates have indeed risen in the last three years, leading to more downgrades." While we still do not have exact data points on downgrades, according to our banking analyst, the highest downgrades are in commodity and real estate. And now a rating downgrade hurts. Figures 45 and 46 show a sharp divergence between an AAA-rated bond and an AA-rated bond. Till June-08, banks/debt fund managers were rushing to fund AAA-rated bonds and accordingly the spread between AAA-rated bonds and g-sec declined 45bps. However, most shied away from AA-rated paper due to general risk aversion. The AA-rated paper spread increased by 100bps over the last six months.

Figure 45: Bond spreads for AAA-rated companies



Source: Deutsche Bank, Bloomberg

Figure 46: Bond spreads for AA-rated companies



Source: Deutsche Bank, Bloomberg

Credit quality, corporate guarantees, upfront equity, tie-up with equipment suppliers, and clearances (environmental and forest) now play an increasing role in financing costs. The gap between have and have-nots may now rise to 700-800 bps.

Our survey shows a major increase in financing costs in the cards

The recent loan syndication of Tata Power Jojobera project gives a glimpse of how much things have changed for project finance. Lenders sought a corporate guarantee from both Tata Power as well as Tata Steel for a captive power plant of ~120 MW. While it is well accepted that Tata Steel's credit quality is much superior to that of any state electricity board, any captive power gives flexibility to the supplier to get higher IRRs. Yet, the lenders did not budge and the loan was at a rate of 11.5-12%. The corporate guarantee was also a rider for the project finance money raised by Gammon. As recently as Feb-08, Adani Power's Mundra project was financed at 11.85% p.a without a corporate guarantee. Most of the banking system seems to be unanimous on hardening of interest rates. Figure 47 is a snapshot on trends in financing cost for the last three years.

Figure 47: Key trends in debt terms for project financing

Year	No. of developers surveyed	Sanction amount (INR mn)	% amount outstanding to sanctions	Avg repayment period (years)	Interest rate range (%)	No. of Banks	Remarks
Power							
FY05	1	1,225	80	9	11.5	2	The tenure for repayment of loan has gone up factoring in a longer execution time. However, interest rate also has gone up ~100 – 200 bps
FY06	5	15,402	8	13		7	
FY07	4	72,166	8	14	11.0	12	
FY08	11	208,768	1	8 - 14.75	11 - 17	8	
Sub-total	**21**	**297,561**		**8 - 14.75**	**11 - 17**		
Road							
FY05	1	11,870	100	-	8.5	10	Interest rate has gone up by ~250 bps over the last three years. However, as concession period of NHDP V has reduced to 12-15 years, the loan may become costlier.
FY06	5	15,817	94	9	9.0	6	
FY07	2	18,610	44	11	11	9	
FY08	2	9,663	8	15		3	
Sub-total	**10**	**55,960**		**9 - 15**	**8.5 - 11**		
Ports							
FY05	1	1,550	73	3 - 10	8.5 - 8.75	3	Interest rate has increased marginally vs. road and power.
FY06	2	4,982	77	10 - 13.75	9	2	
FY07	1	7,440	81	7 - 10	9 - 9.5	5	
Sub-total	**4**	**13,972**		**3 - 13.75**	**8.5 - 9.5**		
Total	**35**	**367,493**					

Source: Deutsche Bank, Industry sources

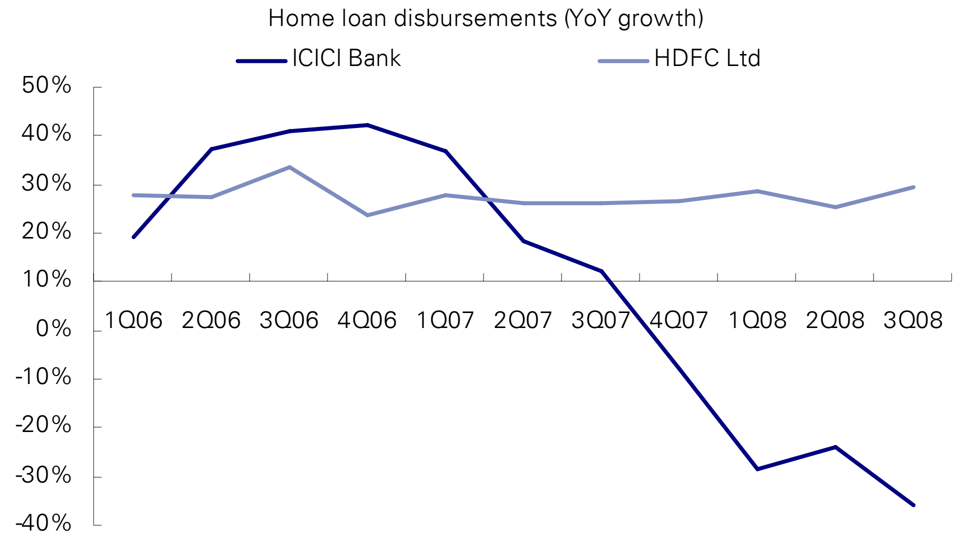
The Real estate sector is an evidence of RBI's discomfort with too much euphoria in a single infrastructure segment

Central banks continue to exert tight controls

Historical precedents show that the RBI maintains a tight control of credit. In recognition of the risks banks faced due to exposure to the real estate sector, both provisioning requirements and risk weights on real estate exposures were tightened; in July 2005, the Reserve Bank increased the risk weight on exposures to commercial real estate from 100% to 125%.

Given the continued rapid expansion of credit in this sensitive sector, the risk weight was raised further to 150% in April 2006. According to the RBI's credit policy, "In order to curb the provisioning on standard assets for residential loans in excess of Rs2m, the commercial real estate was increased from 0.4% to 1.0% in May 2006". Provisioning norms on commercial real estate were further tightened to 2% in January 2007.

Figure 48: RBI intervention restricts home loan disbursement



Source: Deutsche Bank, Company data

The RBI has also continued to pressure banks to reduce their overall exposure to real estate, and it banned ECBs for Real estate companies. These RBI measures – along with rising interest rates – have really hampered home loan disbursements in the last two years. The RBI has likewise begun to tighten infrastructure lending with a circular recommending an upfront equity contribution to minimize the equity funding risk. We could see similar measures in infrastructure projects if the RBI finds exposure limits breached.

Figure 49: Norms for exposure for infrastructure projects

All figures in % of Capital funds (Tier I + II)	Exposure limit	Addl Exposure for Infrastructure Projects	Addl exposure with Board approval on exceptional basis	Total Exposure available
Single Borrower	15	5	5	25
Group Borrower	40	10	5	55

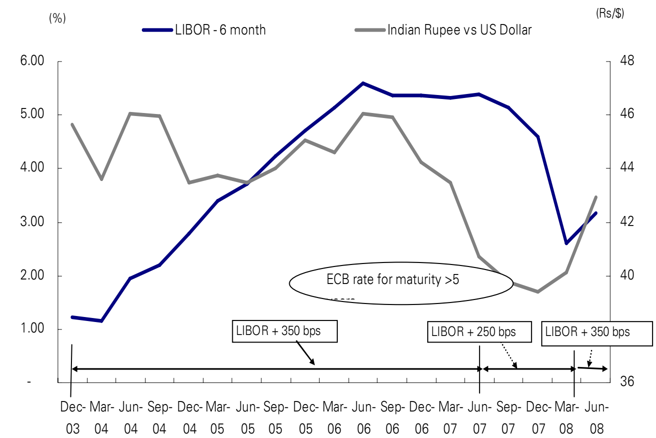
Source: Deutsche Bank, RBI Circular dated Jul 2, 2007, Note: (a) Exposure = Fund based + Non Fund based (b) Infrastructure include road, port, water, telecommunication, power, pipelines, SEZ

Not yet seen any significant rush to get ECB finance

ECB route may not look lucrative if rupee were to depreciate

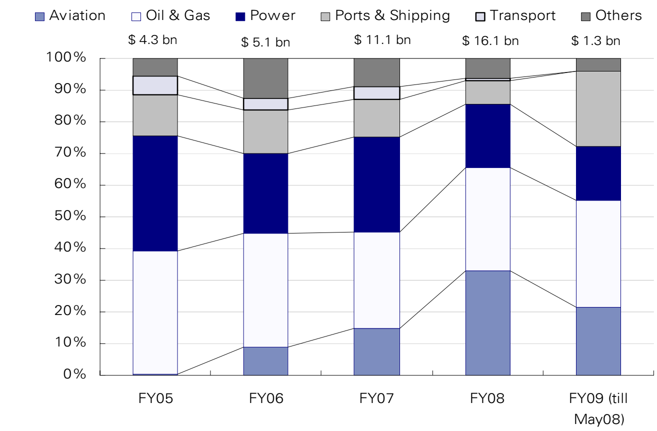
While the quantum of money raised through ECB jumped fourfold over FY05-08, this was under a scenario of an appreciating rupee and low LIBOR rates. We do not believe that an RBI cap on ECB would put a dent in the incremental ECB flow for most of FY08.

Figure 50: ECB rates



Source: Deutsche Bank, Bloomberg, Reserve Bank of India

Figure 51: ECB/FCCB rose eightfold in last four years



Source: Deutsche Bank, Reserve Bank of India

With the rupee depreciating, the RBI decided to relax norms for raising ECB funds. But we have not yet seen a significant rush to get ECB financing. Perhaps corporates are worried about medium-term exchange rate movement given the rising crude prices.

Figure 52: Trends in ECB financing

	Interest rate over 6 month LIBOR				
	31-Jan-04	1-Aug-05	21-May-07	7-Aug-07	29-May-08
Maturity b/w 3-5 years	200	200	150	150	200
Maturity > 3-5 years	350	350	250	250	350
Amount raised under approval route for Rupee exp for Infrastructure projects (USD mn)	NA	NA	NA	20	100

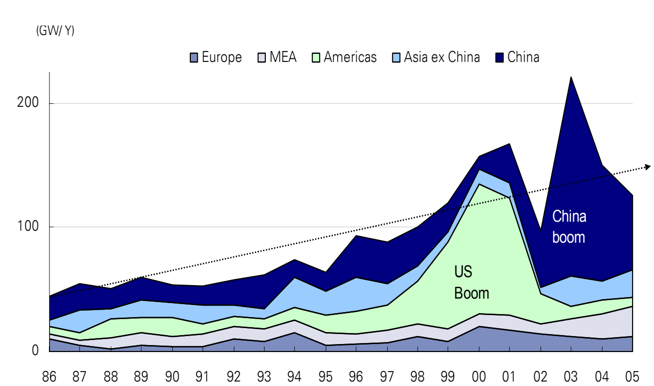
Source: Deutsche Bank, Reserve Bank of India

Order book of main plant equipment quite full

Engineering companies' order books quite packed at least for next few years for deliveries

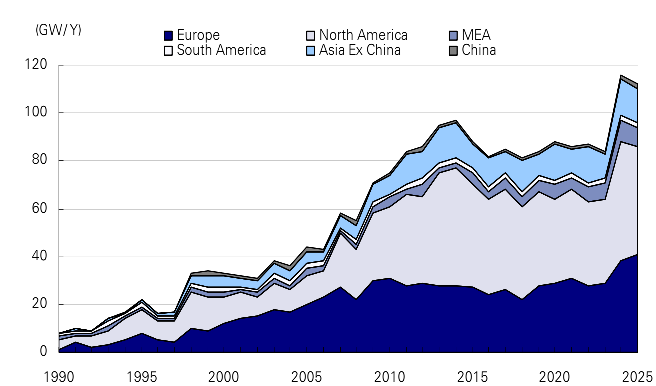
Though a few companies such as Alstom have reported order cancellations, we also need to take into account reduced supply from Chinese suppliers as they rebuild manufacturing facilities after the earthquake.

Figure 53: Strong demand from China and India



Source: Alstom, Deutsche Bank

Figure 54: Replacement demand across the world



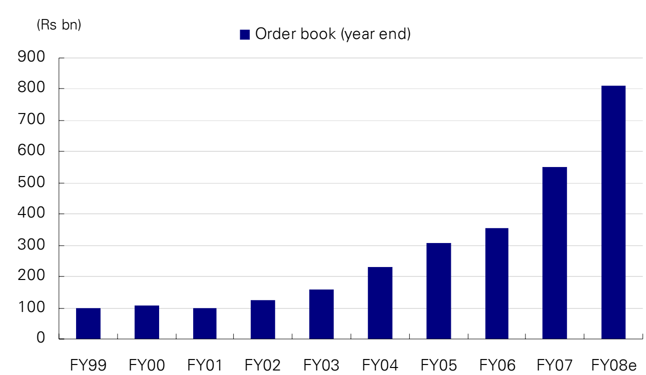
Source: Alstom, Deutsche Bank

Power equipment suppliers with a capacity of about 160-180 GW p.a. will mostly find their order book full over the next several years, in our view

Assuming a 20% reduction in demand for new assets, the replacement of old gensets is likely to rise to 80-100GW p.a, keeping the order books of engineering companies quite packed for at least the next few years. We believe that power equipment suppliers with a capacity of about 160-180GW p.a. will find their order book full over the next several years. In the analyst meeting for Siemens India, the managing director of India operations categorically stated that the power equipment facility of Siemens AG is booked until 2012. Back home in India, BHEL also has a bulging order book with 4xFY08 sales – the highest ever seen.

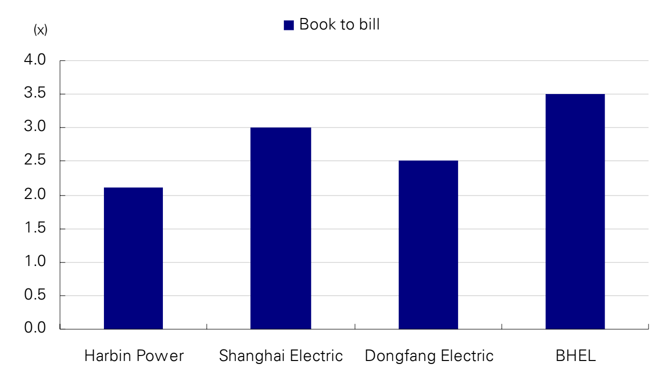
Even Dongfang and Shanghai Electric have an order book that is 2.5x and 3.0x FY08 sales, respectively – one of the highest order book levels ever seen by Chinese equipment manufacturers. Apart from a high order book, we believe that the sourcing of high pressure and low pressure piping and gear box to be the challenge for equipment suppliers.

Figure 55: BHEL's bulging order book



Source: Company data, Deutsche Bank

Figure 56: Book-to-bill for all equipment suppliers



Source: Company data, Deutsche Bank

Challenge in India is to find balance of plant (BOP) manufacturers

India has about 20-25 manufacturing units catering to the supply of balance of plant equipment. In the last plan period of 2002-2007, slippages of 2670MW (or 10% of installed capacity) were blamed for delays in the supply of BOP units.

Figure 57: Major BoP equipments and players in each of the segments

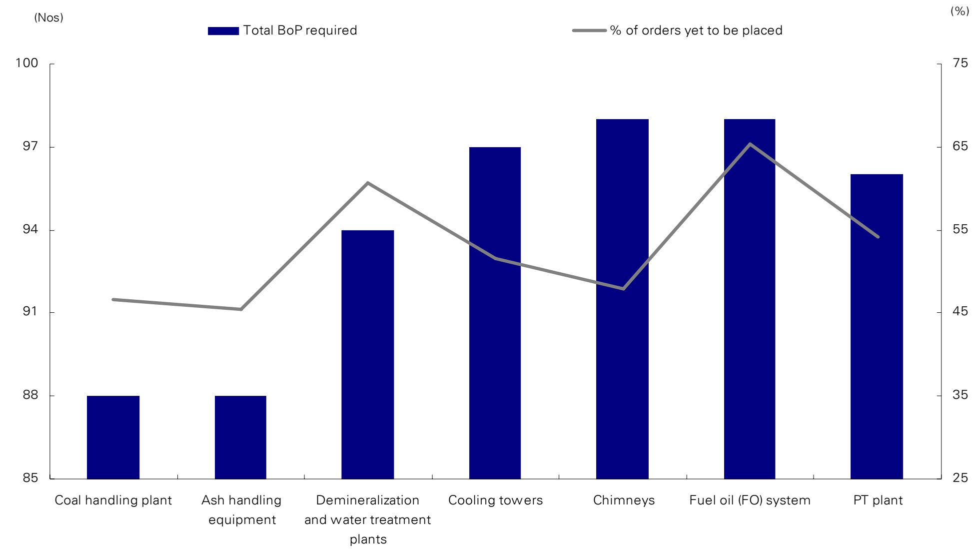
Particulars	No. of executing agencies	Major players that are currently executing orders
Coal-handling plant	15	TRF, Elecon Engineering, L&T, McNally Bharat Engineering, Tecpro Systems
Ash-handling equipment	11	Indure, DC Industrial Plant Services, Macawber Beekay, Mahindra Ash Technology
Demineralization and water treatment plants	11	Thermax, Driplex, VA Tech, Doshi Ion Exchange, Ion Exchange India, and Gannon Duncereley & Co.
Cooling towers	7	Gammon India, Paharpur Cooling Tower India, NBCC Ltd, BDT Ltd, GEA Cooling Towers Tech (India)
Chimneys	11	Gammon India, NBCC Ltd, Unitech Conveyor Corporation, Simplex Infrastructure, BGR Energy
Fuel oil (FO) system	11	Raunaq International, Techno Fab, Techno electric, Unitech Machines
PT plant	18	Thermax, Driplex, Geo Miller, BGR Energy, Ion Exchange India

Source: Deutsche Bank, Central Electricity Authority

About 50% of the BOP orders still remain to be executed

While this may not seem a lot, the statistics for implementation of projects in the XI (2007-12) through BOP supplies seems all the more daunting. About 50% of the BOP orders still remain to be executed. This implies that orders need to be placed for ~ 30000MW of new capacity with the balance of plant equipment.

Figure 58: Estimated order inflow for balance of plant equipment in the next 2-4 years



Source: Deutsche Bank, Central Electricity Authority

In addition, thermal capacity addition of about 4,590MW (40% of ministry of power's estimate of capacity addition in FY09-10e) is stuck at BOP units. It is possible that BOP manufacturers will first finish work on projects delayed beyond six months to two years before taking fresh orders.

Figure 59: Bottlenecks in implementation of projects by BoP players

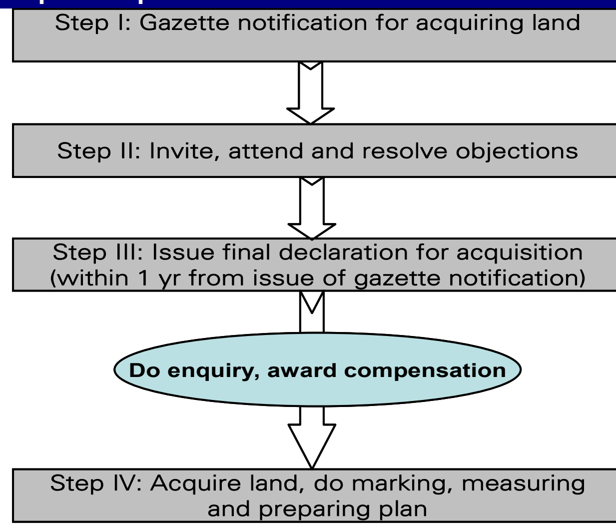
Delays due to	Number of projects	Capacities (MW)
Manufacturing / supply constraint	10	3,380
Partially / fully yet to be ordered either by the developer / EPC contractor	5	1,210
Progressing without any critical BOP issue	35	6,472
Total thermal capacity additions	**44**	**11,062**

Source: Deutsche Bank, Central Electricity Authority

Structural issue - Problem no. 1: Land acquisition

Under Indian laws, land can be acquired by the government of India. The land is acquired under the Land Acquisition Act for various infrastructure projects.

Figure 60: Land acquisition process



Source: Deutsche Bank, Land Acquisition Act

A 2mt cement plant never spent more than INR200m for acquisition of land. Now; this cost has skyrocketed to INR2-3bn

Despite a well-established process, land acquisition more often than not lands developers in controversy. The recent run-up in land prices has made this cost skyrocket. For example, a 2mt cement plant never spent more than INR200m for land acquisition in the past but the cost has skyrocketed to INR2-3bn. At times, only 80-85% of the required land gets acquired, which can impede a project's progress. Figure 61 gives a snapshot of the project land requirements for land.

Figure 61: Quantum of land required for various projects

Nature of Plant	Capacity	Land required (acres)
Power generation	2 x 500 = 1000 MW pithead (domestic coal) (Ex: Several NTPC plants)	1,420
Power generation	3 x 660 = 1980 MW on imported coal	1,050
Power generation	5 x 800 = 4000 MW on imported coal (ex: Mundra UMPP)	1,530
Power generation	6 x 660 = 3960 MW pithead (domestic coal) (ex: Sasan UMPP)	3,280
Cement	2 mnt	400
Steel	3 mnt	5,000

Source: Deutsche Bank, Central Electricity Authority

Projects delayed due to the inability of land acquisition are largely in the private sector. They include Posco and Tata Steel's steel project, Kothputli's cement project for Grasim, Shahapur's power project for Reliance Power and Tata Power, and others.

Structural issue - Problem no. 2: Environmental clearances

According to Indian laws, all new projects as well as the expansion and modernization of existing projects require an environment clearance (EC) from the Ministry of Environment and Forest (MoEF), government of India. On the face of it, the process is quite simple. Projects are classified into two categories A and B as part of the approval process, shown in Figure 62. Category B is further subdivided into B1 (environment impact assessment report (EIA) required) and B2 (EIA report not required). Accordingly, category B2 requires the least amount of time for granting EC and category A the highest.

Figure 62: Categories of infrastructure projects for environmental clearance

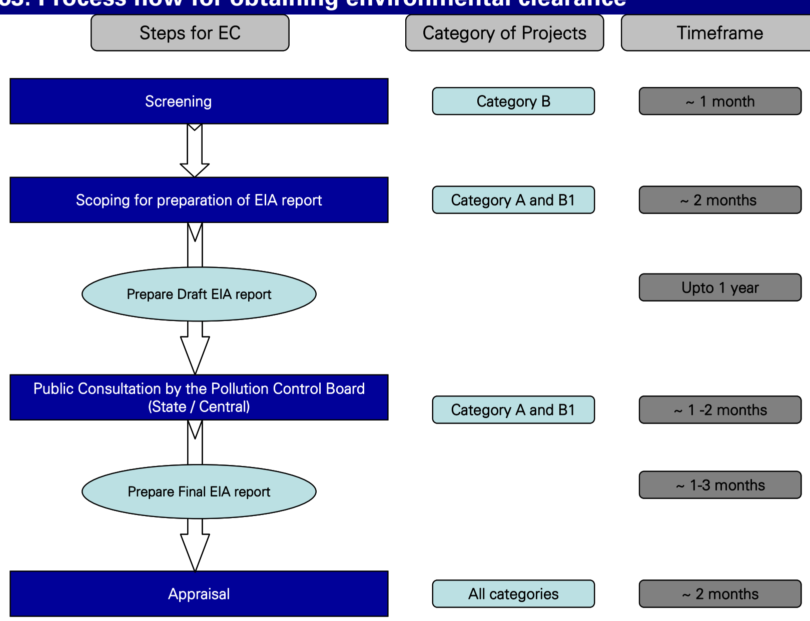
	Category	
	A	B
Regulatory authority	Central government	State government
Nature of Infrastructure project		
Mining	>= 50 ha of mining area	< 50 ha of mining area
Power generation project (Hydro)	Size >= 50 MW	Size <50 MW and >= 25 MW
Power generation project (Coal/ Gas)	Size >= 500 MW	Size <500 MW
Airports	All project	-
Ports	Cargo handling capacity >=5 mtpa	Cargo handling capacity < 5 mtpa
Highways	New national highway and expansion of NH >30 km; Involves > 1 State	New State highway and expansion of NH and SH >30 km
Buildings and construction project	-	> 20,000 sq m and < 0.15 mn sq ft of built up area

Source: Deutsche Bank, Ministry of Environment and Forest

Environmental clearance process can easily take six months to three years

But this four-step process of grant/rejection of EC can easily take six months to three years, depending on the nature of environmental activity, rehabilitation issues, coastal regulations and forest activity.

Figure 63: Process flow for obtaining environmental clearance



Source: Deutsche Bank, Ministry of Environment and Forest

To make matters worse, as per the latest guidelines release in 2006, EC can be granted by the regulatory authority at the central level or the state level depending on the nature of the project (category A or B). We note that only a few states have environmental authority, as shown for 2007 in Figure 64. In the absence of state level authority, projects are routed to the central government.

The application of ABG group to build a cement plant in the state of Gujarat was rejected as the authority felt the area too close to a bird sanctuary

Environmental clearance in India has taken as long as 10 years; the Sanghi Cement Project is a case in point. In a recent judgment, the application by the ABG group to put a cement plant in the state of Gujarat was rejected as the authority felt that the area was too close to a bird sanctuary. Now this application could be heard by the state government environmental committee.

Figure 64: Few states have environmental impact assessment authority

State	Date
West Bengal	13-Apr-07
Karnataka	11-Jun-07
Gujarat	12-Jun-07
Andhra Pradesh	5-Jul-07
Uttar Pradesh	12-Jul-07
Meghalaya	23-Jul-07
Himachal Pradesh	11-Oct-07
Daman, Diu and Nagar Haveli UT	11-Oct-07

Source: Deutsche Bank, Ministry of Environment and Forest

Structural issue - Problem no. 3: Coal lies buried deep under the surface

Private sector has been able to operate only four blocks to date

Historically, of the ~30 captive coal blocks allotted to the private sector for power generation, only three companies from four coal blocks managed to successfully commence operations (see Figure 65).

Figure 65: Operational coal blocks

Coal Block	Developer	Location	Geological reserves (mn t)	Date of allotment	Operating since	Remarks
Sarisatolli	CESC Ltd.	West Bengal	140	Aug 93	2002	Yet to achieve Peak rated capacity (PRC) due to delay in acquiring forest land, expected achieving the same by FY10
Talabira-I	Hindalco	Orissa	23	Feb 94	NA	Achieved PRC; Balance life of 5-6 years
Gare-Palrna-IV/2 and 3	Jindal Power Ltd	Chhattisgarh	246	Jul 98	Jun 07	Ash content is 50% vs.. requirement of 42%; hence revised mining plan submitted to increase PRC, expected to reach PRC by FY10

Source: Deutsche Bank, Ministry of Coal, Central Electricity Authority

These blocks took approximately 10 years to complete the developmental activities and commence production from the zero date (note that all these blocks were open cast mines). We attempted to trace the development path for one of these coal blocks allotted to Jindal Power:

Figure 66: Development timeline for block allotted to Jindal Power

Milestone	Timeline
Zero date	Jul-98
Envt + Forest Clearance	Sep-04
Mining Plan	May-01
Mining Lease	Sep-04
Land acquisition	Apr-05
Infrastructure	Dec-06
Operational	Jun-07

Source: Deutsche Bank, Ministry of Coal, Central Electricity Authority

Mine development cycle – not a cakewalk as it seems

Though it is difficult to generalize the exact time needed to commence production from a coal mine, as per the government guidelines, the normative time limit ceilings to commence coal production is 36m from date of allotment (42m for forest land) for open cast mines. The timeline would be extended 12 months when the mining is underground. Our assessment reflects that the mine development process can be broadly divided into following five steps

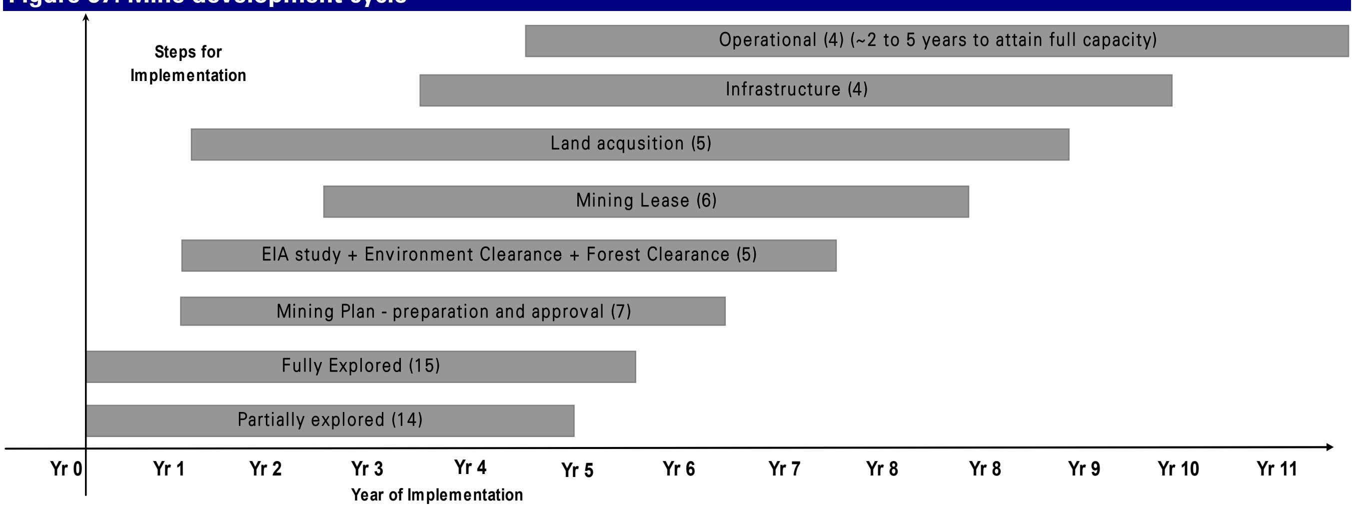
1. **Exploration and prepare geological report (GR):** The first step is to explore the block through extensive sampling, drilling, testing and prepare the geological report (analogous to detailed project report (DPR) for infrastructure projects). Time required ~ 2 years.

2. **Mining plan:** GR is used to prepare a detailed mining plan (Ministry of Coal has identified a list of people who are qualified in India to do this) and seek its approval from the government which can take six months to two years.

Time required can vary from one-to-five years depending on forest land, rehabilitation issues, afforestation, survey, etc.

3. **Environment and forest clearance and mining lease:** In conjunction with the mining plan preparation, the environmental impact assessment study is to be conducted and application for the MoEF clearance. Time required can vary from one-to-five years depending on forest land, rehabilitation issues, afforestation, survey, etc. Post the grant of clearance, the mining lease would be granted by the state government – which can take another six months.
4. **Land acquisition:** As per the guidelines, this activity should be completed within 30-36 months from the date of allotment acquired under the Coal Bearing Areas Act.
5. **Infrastructure linkages and commercial operation:** Once the mining lease is granted and land acquisition is complete, the developer can build the requisite infrastructure linkage for coal transport (road/rail link) and the commercial operation of the mine can commence. However, the mine can take two-to-five years to achieve full production. Till the power plant is ready, the developer can sell the surplus of coal to the local Coal India subsidiary company at a price determined by Coal India.

Figure 67: Mine development cycle



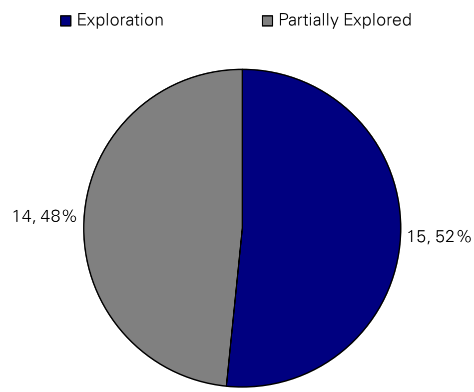
Source: Deutsche Bank, Ministry of Coal, Central Electricity Authority, Number is bracket indicate number of coal blocks at each stage, Same coal block may be allotted to multiple parties hence the number of blocks and companies to whom they are allotted are not additive

Given the past experience of coal block development, most of the above activities are time consuming and can easily take 5-10 years before the coal can see the light of the day.

Recent awards of coal blocks are primarily in forest land

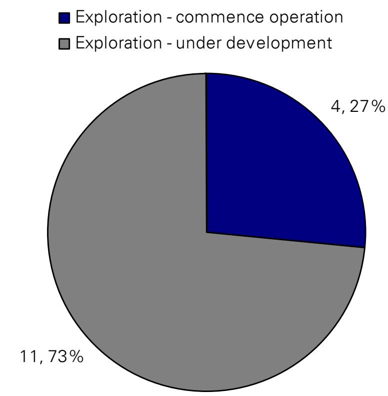
Of the blocks allotted to the private sector for mining, only half of them are explored and have moved ahead in the implementation cycle.

Figure 68: Only 14 blocks are explored



Source: Deutsche Bank, Ministry of Coal, Central Electricity Authority,

Figure 69: Four blocks have commenced operation



Source: Deutsche Bank, Ministry of Coal, Central Electricity Authority,

Of the 15 blocks explored, four are under operation while the remaining 11 are in different stages of development

Of the 15 explored blocks, four are under operation while the remaining 11 are in different stages of development. Our assessment of the development cycle for nine of these 11 blocks is shown in Figure 70.

Figure 70: Stage of development of explored coal blocks

Coal Block	Developer	Location	Date of allotment	Envt+Forest Clearance	Mining Plan	Mining Lease	Land acquisition	Infrastructure	Remarks
Tokisud North	GVK Power (Govindwal Sahib) Ltd	Jharkhand	Jan-02	√	√	√	CY08e	CY10e	Delay in commissioning of end use plant
Bhandak West	Shree Baidyanath Ayurved Bhawan Ltd.	Maharashtra	Nov-03	×	×	×	×	×	Not much progress
Utkal-A	Jindal Group + Shyam DRI Ltd. + MCL + JSW	Orissa	Nov-05	×	√	√	×	×	JV is yet to be formed
Mahan	Essar Power Ltd + Hindalco Industries	Madhya Pradesh	Apr-06	×	×	×	×	×	Land acquisition through direct negotiations for private land
Chakla	Essar Power Generation Ltd	Jharkhand	Feb-07	×	√	×	×	×	-
DurgapurII/Sarya	DB Power Ltd	Chhattisgarh	Nov-07	×	×	×	×	×	-
DurgapurII / Taraimar	Balco	Chhattisgarh	Nov-07	×	×	×	×	×	-
Lohara West + Lohara West Extn.	Adani Power Ltd	Maharashtra	Nov-07	×	×	×	×	×	Applied for issue of Terms of Reference to MoEF

Source: Deutsche Bank, Ministry of Coal, Central Electricity Authority,

The fate of the 4700MW of power plants depends on the development of the above coal blocks which we believe should take three-to-seven years for full production to commence. These include:

- 1000MW power plant (part of Tiroda project in Maharashtra) of Adani Power,
- 3200MW of Essar Power in Madhya Pradesh and Jharkhand and
- 500MW of GVK Power in Punjab.

At this juncture, it is difficult to assess the exact time required for the all the remaining blocks at the exploratory stage for the commencement of operations. However, if we go by past experience and assume that the private sector manages to overcome all the milestones, it will still take approximately 5-10 years to achieve peak capacity production. About 10000MW of power plants are linked to these coal blocks. We need to watch out for events related to the approval of mining plans, the granting of mining leases and developments on land acquisition to get comfort with which blocks are finally moving ahead in the development curve.

Section C: Sharp deterioration in FCF and balance sheet

Industrial earnings are showing signs of cycle reversal

Barring L&T, it appears every company had working capital problems

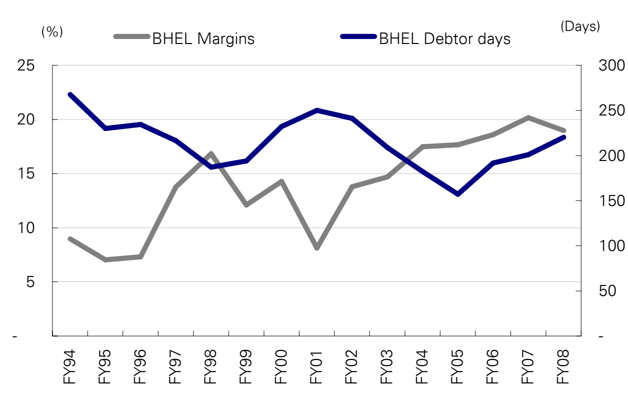
Barring BHEL and Siemens, most companies have shown good earnings growth in FY08. The problem, however, is lengthening of the working capital cycle. Barring L&T, it appears every company had working capital problems.

- **ABB India's** net income increased by 44% during CY07 but net cash generated from operating activities was almost flat. The main reason for this was an increase in working capital from 6.7% to 9% of the sales. We quote this from CY07 annual report:

"The distribution business faced operating cash-flow problems as funding for various RGGVY projects from REC had been delayed."… "During the year, there were higher financing requirements due to business growth and delay in collection from customers, particularly those relating to the power system segment"

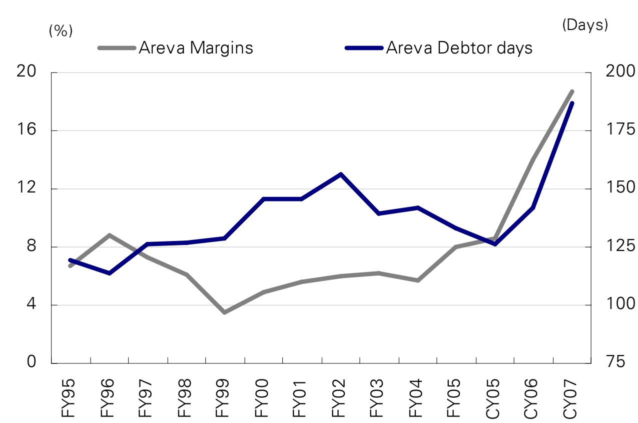
- **BHEL's** both debtor and inventory days increased by 20 days in FY08. Debtor days are now close to the cyclical highs last seen in 1997 and 2001.
- **Areva T&d's is a surprise case.** First, in the short-cycle segment, debtor days should be quite low: less than 100 days. But to our surprise, Areva's historical debtor days at 120 - 140days plus in FY05 and FY06 were higher than its peer group. What is even more surprising is that debtor days rose to 187 in CY07. Typically, one would expect such high debtor days from companies in generation space and not from companies in short-cycle transmission and distribution business. As a result of such a sharp rise, the operating free cash flow of the company was almost nil despite management's claims that the growth in their margins and earnings is one of the highest in its peer group

Figure 71: Debtor days are increasing



Source: Deutsche Bank, Company data

Figure 72: Debtor days creating new highs



Source: Deutsche Bank, Company

- **IVRCL:** The company intends to have good margins but is comfortable with a higher number of debtor days. The company has not reported positive free cash flows at the operating level since FY06. It has infused capital through various routes during the last two years (FCCB, QIP etc.)..

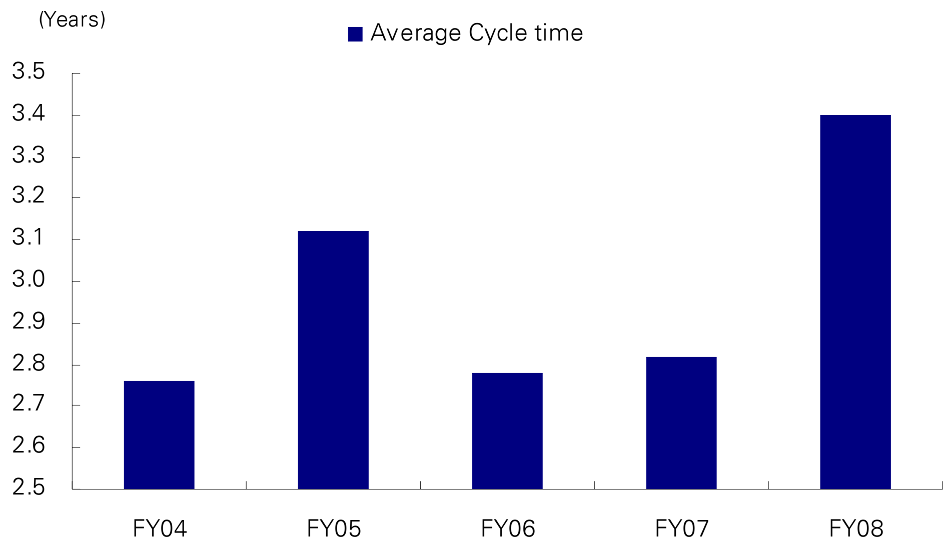
- **L&T** has so far managed the working capital cycle extremely well. This seems to be partly driven by advances received for new orders. Assuming that the order inflow growth would slow down sooner or later, the net working capital is expected to increase from 10% to 14%**.** It remains to be seen whether management is able to control this to less than 19% of the sales – last seen in 2000-01. For recap, in 2001 the low working capital cycle in cement also played a role in mitigating the impact of lumpiness on the engineering business

Increasing execution time

One of the biggest problems in estimation of earnings has been the completion time of projects

One of the biggest problems in estimation of earnings has been the completion time of projects. A 500 MW greenfield power plant now requires 44-48 months for completion vs. 36-38 months required earlier.

Figure 73: Completion time for a power plant



Source: CEA, Deutsche Bank

In the cement sector, against a stated goal of commissioning a plant in two years, most of them have taken 3-3.5 years for completion. A few of them have taken 4 years and continue to face challenges. All this percolates to lower predictability of earnings.

Figure 74: Cement players finding capacity addition quite challenging

Plant name (location)	Cement Capacity(mt)	Expectations of suppliers	Company guidance	Remarks
Units where equipment suppliers fear delays				
HP unit	4.5	Apr-09	Mar-08	Execution challenge
Murli Industries	2.8	Mar-09	Jun-08	Lack of man power
Lafarge-Sonadih	2.7	Mar-09	Jun-08	Delay in civil work
Grasim-Kothputali-Rajasthan	4.0	Apr-09	Jun-08	Land acquisition
JK Cement	2.1	Mar-09	Jun-08	Execution challenge
Ultratech Cemco	4.9	Oct-08	Jun-08	Stabilisation challenge
Madras Cement_ Jayantipuram	1.7	Jun-08	Dec-08	Stabilisation challenge
Madras Cements -Alathiyur	1.7	Jun-09	Dec-08	Companies at loggerheads over mines
Rewa Unit	2.	Oct-08	Oct-07	Political problems-look sorted out
Ambuja Eastern	3.2	Dec-09	Mar-09	Difficult terrain for commissioning
UP cement	3.4	Aug-08	Dec-07	Only 0.8mnt may come under operation
Total	**33.0**			

Source: Deutsche Bank, Company data

Commodity prices can place truant

Our sensitivity analysis on steel prices indicate that ABB, Areva, Siemens and Voltas are not much exposed to rising steel prices. However, BHEL, Larsen and Thermax are vulnerable as a 30% increase/decrease in steel prices could impact earnings by 8-31%, Thermax being the most sensitive.

Figure 75: Sensitivity to steel prices

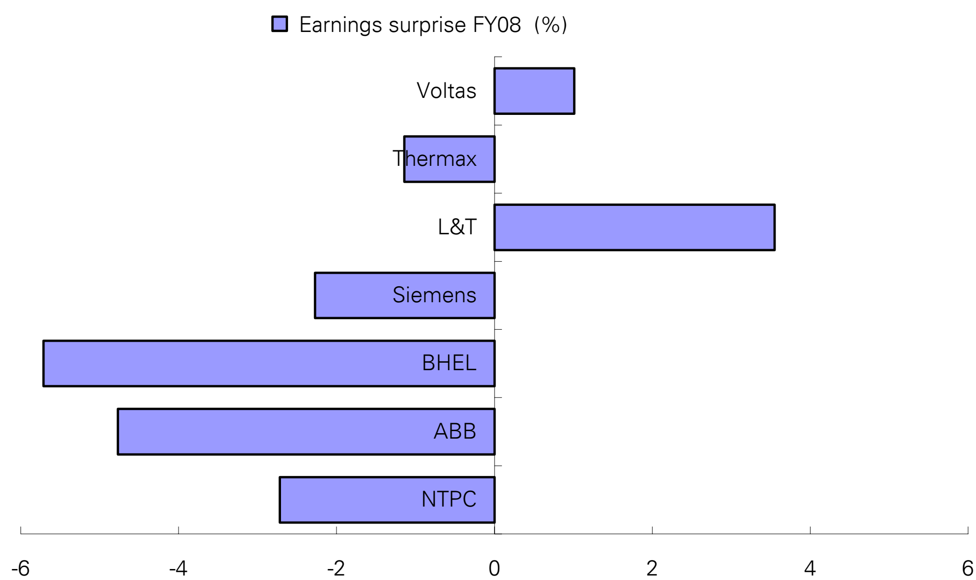
	Quantity of steel consumption ('000 t)		Cost of steel as % of raw materials		Turnover growth (CAGR%) FY08-10e	Impact on EBITDA margins for FY09e (bps		Impact on EPS for FY09e (%)	
Companies	**FY06**	**FY07**	**FY06**	**FY07**		**10% change in steel price**	**30% change in steel price**	**10% change in steel price**	**30% change in steel price**
ABB	0.33	0.3	1.31	0.1	34	NA	NA	NA	NA
Areva	14,151	6,659	11	4	29	+/-20	+/-70	+/-1.2	+/-3.9
BHEL	400,236	347,876	24	23	28	+/-100	+/-320	+/-4	+/-13
Larsen	57012	124,490	3	18	20	+/-97	+/-284	+/-2.9	+/-8.4
Siemens	8,144	8,990	3	3	28	+/-18	+/-56	+/-1.6	+/-5.8
Thermax	12529	13,177	24	15	20	+/-102	+/-314	+/-9	+/-31
Voltas	6012	5,651	2	1	32	+/-10	+/-40	+/-0.13	+/-0.5

Source: Deutsche Bank, Company data, Prowess

Last quarter's earnings were below expectations

To say that BHEL's results were disappointing is an understatement. Being the sector's first results, it set the tone for others who also reported results significant below over expectations. Larsen and Toubro managed to beat expectations, but the stock took a lot of hammering on concerns about losses in commodity hedging. Thermax missed its margin guidance, while ABB missed its revenue guidance.

Figure 76: Most companies' results were below expectations

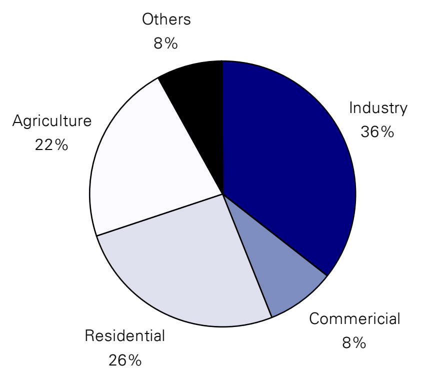


Source: Deutsche Bank, Company data

Utilities space already bogged down by elements of slowdown

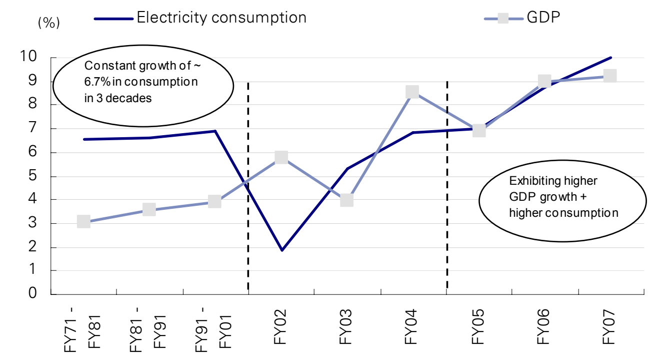
We are surprised that electricity demand in India (after accounting for aggregate technical and commercial losses) has been growing at a near double-digit rate of 9.4% p.a. over the last two years, much higher than the long-term average of ~ 6-7%. A closer look at the data shows that most of this rise is driven by an inferior sales/consumer mix.

Figure 77: Composition of Indian power demand



Source: Deutsche Bank, CEA

Figure 78: Electricity demand picking up

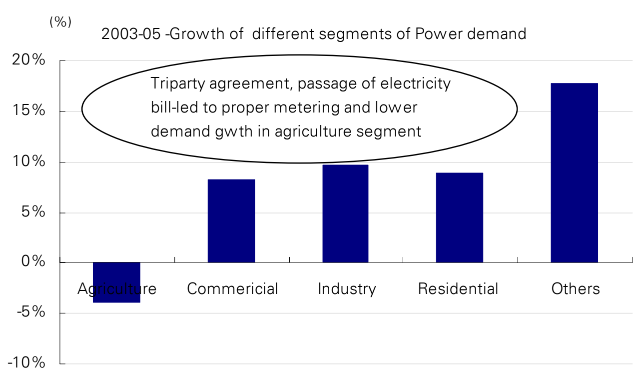


Source: Deutsche Bank, CEA, Electric Power Survey

We believe that , the spurt in agriculture demand could be driven by state government policies that provide free power to agricultural users .

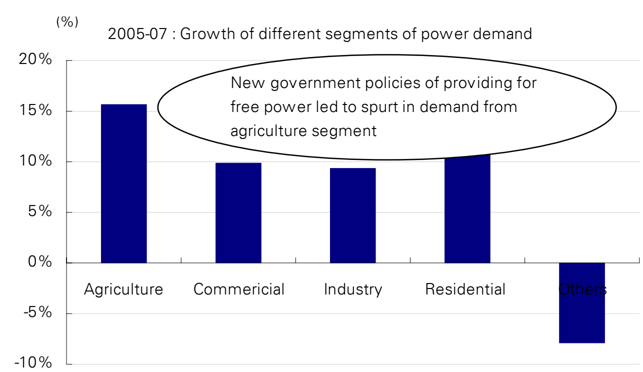
Almost the entire incremental demand in the Indian power sector over the last two years has been led by a 16% CAGR(FY05-07) in subsidised agriculture demand. Agriculture demand had shown a negative 0.2% growth during FY95-05. Note that agricultural tariffs in India are less than 50% of the variable cost of generation and cover no cost of transmission and distribution. Clearly, if not reversed, the stage is set for a repetition of severe financial crises of the distribution companies.

Figure 79: Tripartite agreement shows the way



Source: Deutsche Bank, Central Electricity Authority

Figure 80: Rate of change and movement of IIP



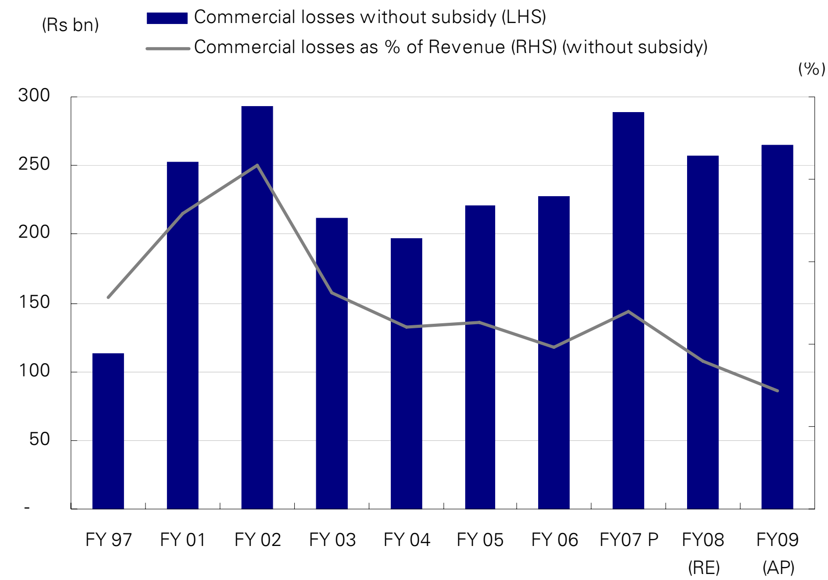
Source: CEA, Deutsche Bank

Distribution losses are pegged at INR262bn - close to the all-time high of INR 293bn

Rising distribution losses – A disturbing trend

The total distribution losses for all distribution companies rose by a whopping 400 bps as a percentage of revenues in FY07, and is pegged at INR262bn - close to the all-time high of INR 293bn. The current difference between the average cost of power purchase and average cost of supply is ~50 paise/unit or 22% of the current chargeable average tariffs.

Figure 81: Commercial losses, and losses as % of revenue for state power utilities



Source: Report on "Impact of Restructuring of SEBs", Planning Commission, Central Electricity Authority and Power Finance Corporation, Economic Survey F07

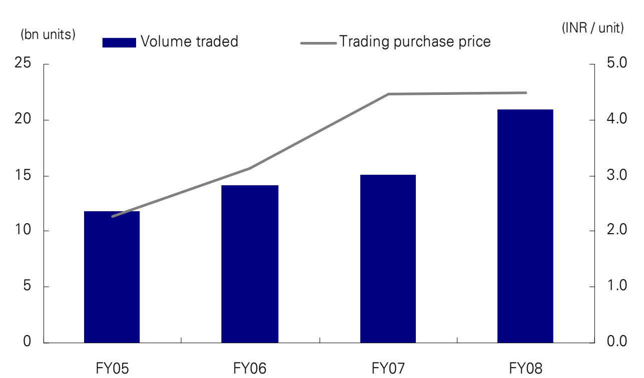
Merchant sales also prone to payment risk

Over the last four years, the trading market is being referred to as a big panacea to the problems faced by the sector. Power developers are looking to sell directly to industrial users, and at times to trading companies. The trading companies then sell power to the discoms. The biggest risk in such a system is that the balance sheets of trading companies are hardly sufficient to cover payments for 3 months of mere 1000MW supply. This may be a significant bottleneck seen through trading volumes, currently at only 3% of the total electricity volume

Trading tariff has virtually remained flat in FY07-08 though volumes were up 40% yoy

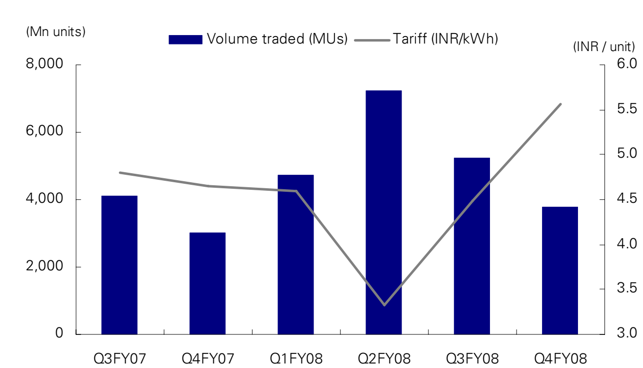
An interesting thing to note is that trading tariff has remained almost flat in FY07-08, though volumes were up 40% yoy (but declining in 2H08). Currently, on an average, the trading tariff is hovering at ~3-5x the regulated tariff and ~2-3x the competitive bid tariff.

Figure 82: Trading tariff remained flat in FY07-08



Source: Deutsche Bank, CERC,

Figure 83: On a quarterly basis, volumes are declining



Source: Deutsche Bank, CERC

Furthermore, there is a risk that the regulator can intervene and place a ceiling on the trading price. Note that earlier in 2007, the regulator has intervened and capped the trading margin at 0.04ps/kWh (half of the trading margin in FY06).

Gencos finding difficult to get regulators' acceptance on cost hikes

Even business models operating in the regulated environment are facing difficulties in obtaining the fuel-price hike as a pass-through in tariffs. Figure 84 indicates that the approved fuel prices by the regulator were 5-9% lower than those requested by the developers – which means a direct hit on the RoE, though marginally.

Figure 84: Regulatory approval for coal price(INR/t)

	Petition	Approved	Discount (%)
Reliance Infrastructure – Mumbai distribution area	2,325	2,201	**(5)**
Tata Power – Mumbai distribution area	3,203	2,915	**(9)**
CESC – Kolkata distribution circle	1,668	1,677	1
Torrent Power – Ahmedabad and Surat distribution area	3,111	2,957	**(5)**

Source: Deutsche Bank, Tariff orders issued by Electricity Regulatory Commission

Regulators looking at cutting efficiency norms

Any attempt to cut returns for central utilities could hurt their earnings and consequently cash for investments.

According to an interview by the newly appointed CERC Chairman, there is a possibility of tightening efficiency hurdle rates for tariff determination. This could happen in CY09. Any attempt to cut returns for central utilities could hurt their earnings and consequently cash for investments. A lower return at a time when interest rates are rising depresses the quality of earnings. Over the last fifteen years, the regulator has continued to increase the threshold for returns, and the norms for earning higher returns have accordingly become tougher. Figure 85 is an overview of some of the regulator's activities. The proportion of equity in overall financing has decreased. The station heat rates have also been cut and developers will have to now run the plant even more efficiently. The RoEs have also been cut from 16% to 14% for operating plant at 80% utilization.

Figure 85: Tightening the belt

Parameters	FY92 - FY04	FY01 - FY04	FY05 - FY09*
Debt : Equity (x)	1 : 1	1 : 1	2.33 : 1
Station Heat Rate (kcal/kWh)	2500	2500	2450
O&M expenses (Rs mn/MW)	2.5% of Capital Cost	0.75 - 0.8^	0.9
Escalation on O&M expenses (%)	10	6	4
Return on Equity (%)	12 (uptown FY98); 16(thereafter)	16	14

*Source: Deutsche Bank, *for 500 MW series, ^for Ramagundam and Korba plants*

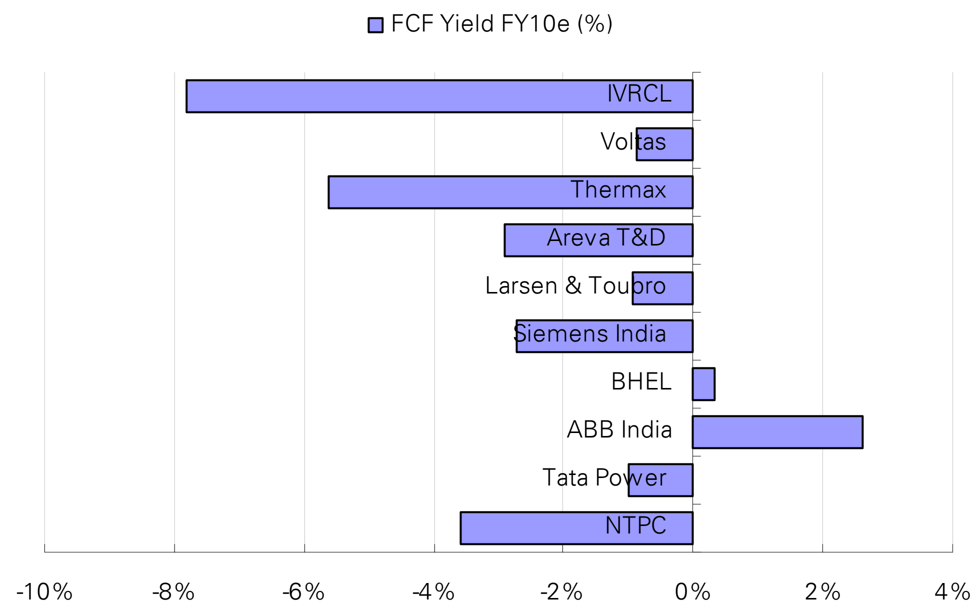
Section D: Stock picks

ABB and BHEL have strong free cash flow yield

Based on our forecast and assessment of business cycle, ABB India, emerges as the best industrial business on free cash flow yield

We have used a framework of accessing free cash flow yield to estimate the strength of the business model under coverage. Based on our forecast and assessment of the business cycle, ABB India, emerges as best industrial business on a free cash flow yield basis. Tata Power emerges superior to NTPC though both of them have negative free cash flows. IVRCL, Thermax and Areva a more vulnerable from the impact in the down cycle than their peer group.

Figure 86: Base case free cash flow yield



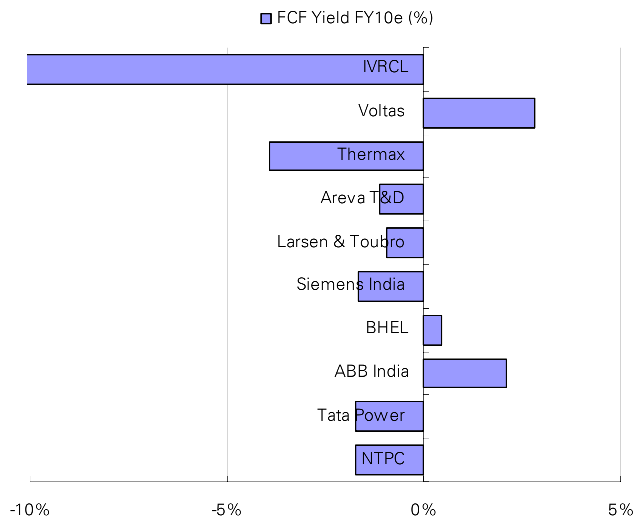
Source: Deutsche Bank

Revenue slowdown hits utilities worst

10% lower-than-estimated revenues, can have a much higher negative impact on companies in the utility space than in the industrial space

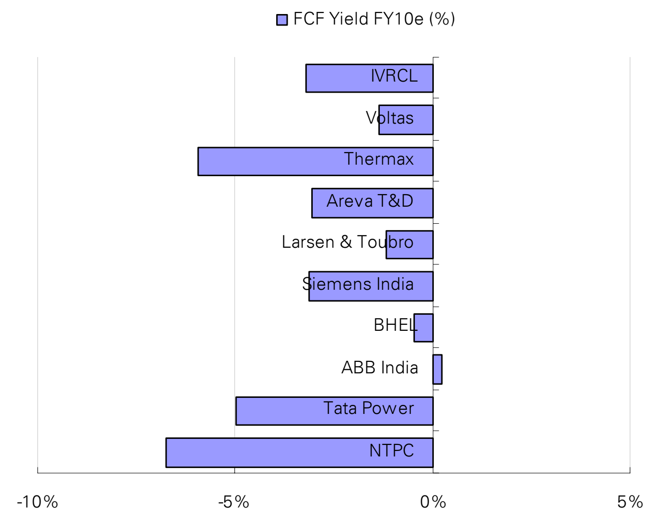
Utilities suffer slowdown in revenues either through lower PLF or delays in implementation, while capital equipment suffer vagaries from revenue recognition largely from delays in implementation schedules. Ten percent lower-than-estimated revenues can have much higher negative impact for companies in the utility space than in the industrial space. The only business model that seems to be better placed than others and maintain positive free cash flow even with 10% decline in revenues is ABB India.

Figure 87: Impact of 10% revenue increase on FCF



Source: Deutsche Bank

Figure 88: Impact of a 10% drop in revenue on FCF

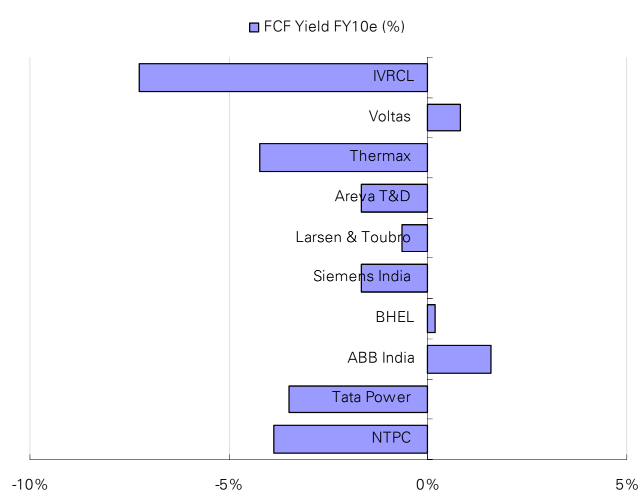


Source: Deutsche Bank

Thermax, Areva lose out on high cost pressures

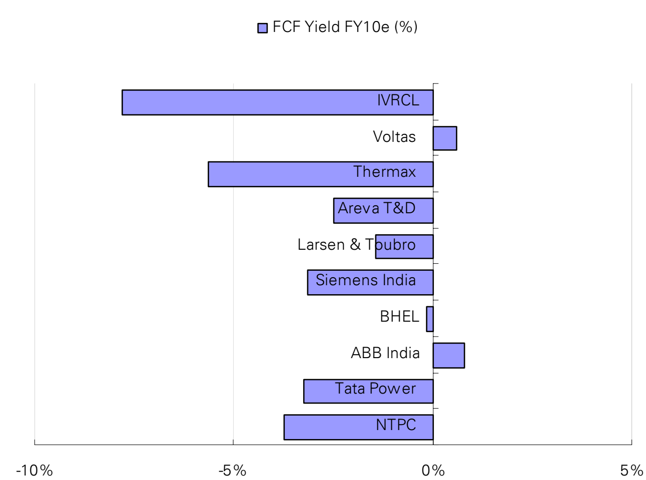
A 100 bps margin drop impacts the free cash flows of smaller companies, i.e. Areva and Thermax disproportionately compared to their larger peers. Utility companies in India have also shown cyclical variation of 1,000 bps plus in margins. By and large, a 100 bps variation does not affect cash flows as much as in industrial and construction companies.

Figure 89: 100 bps higher margins



Source: Deutsche Bank

Figure 90: 100 bps lower margins

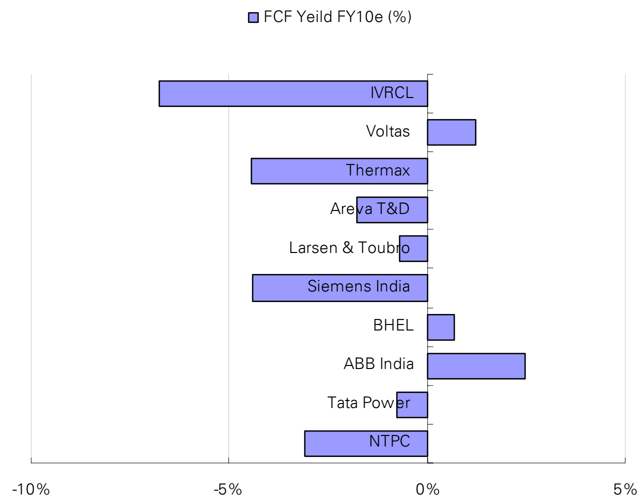


Source: Deutsche Bank

ABB and BHEL appears better placed for down cycle

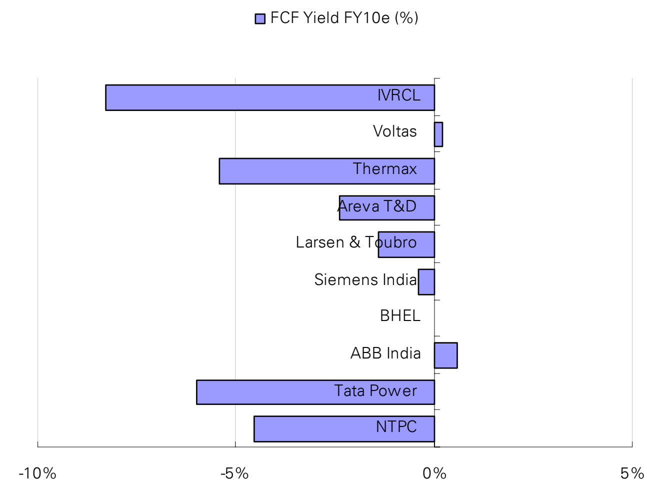
India's capex programme got a big boost from power sector reforms. The balance sheets of power companies are currently stronger and they look best placed to face the cyclical downtrend in India.

Figure 91: Working capital cycle shorter by 10 days



Source: Deutsche Bank

Figure 92: Working capital cycle longer by 10 days



Source: Deutsche Bank

Risks

A fast pick up in structural reforms could drive investments

Land has emerged as a major constraint in infrastructure development and land acquisition has become a contentious issue. Without smooth resolution of this issue, almost all infrastructure development will be held up. Important reforms that could be required in land are

1. Transparent mechanism for transfer of land.
2. The decision to part with the land has to be a collective, community-based decision
3. The price must be fair and market-based and arrived at through a consensus between the developer and owners of land.
4. Appropriate rehabilitation schemes should be put in place for the project affected people.
5. Interests of not only the land owners but also others such as tenants, the landless, the agricultural and non-agricultural labourers, and artisans whose livelihood depends on the land, should be protected.

In the event of accelerated pace of land reforms and relief and rehabilitation policies we could see land acquisition constraint easing considerably. This could drive up investments particularly in Eastern India where this constraint has held most mega projects in the resource sector

Preparation of model concession agreement (MCA) need to pick up
So far, the Planning Commission has brought out five such MCAs (national highways, state highways, ports, operation and maintenance of highways and railway container movement) and four are in the pipeline (metro rail system, airports, power transmission and modernization and development of railway stations). We do not see the pace of MCA pick up in the medium term as the concept is at nascent stage. However, if the planning commission is able to roll out MCA in metro rail systems there could be upside risk to capex cycle

Faster clearances for MOEF and forest
A time lag of 10 years for mine development is clearly unacceptable for a growing economy such as India. In case the new government can accelerate the clearance and put a frame-work for single window clearance- we could see a significant pick up on the investments both in mines and related infrastructure sector

GDP growth rate not declining

If commodity prices were to show sharp correction especially in crude oil and steel, there is a possibility of inflation expectations from high oil prices coming down. This could allow central banks some lee-way for monetary relaxation driving up investments in the economy

Large scale imports of capital goods

Non-availability of equipment and material, inadequate number of construction agencies, and skilled and unskilled manpower shortages are major constraints to a rapid build-up of infrastructure. This is proving to be a significant problem in the power sector. Planned power sector capacity addition of about 80,000 MW in the Eleventh Five Year Plan is unlikely to be realized due to material, equipment and skilled manpower shortages. Shortage of wagons, cranes, and trucks is also adversely affecting other sectors. In case we have a slowdown in global GDP, India could look at importing capital equipment which could drive up investments.

Easy credit improving the b/s of developers

In the event the liquidity conditions improve, developers could look at raising finance at much easier terms. This could remove a major bottleneck for investments and reaccelerate the capex especially in power and construction space.

Stock picks

Figure 93: Stock picks

		17-Jul-08				----EPS Growth (%) ----		---------PE(x)--------		------ROE (%) --------		-----P/BV (%) -----		
	Ticker	**Price**	**Target price (INR)**	**Rating**	**Potential upside / downside (%)**	**FY09e**	**FY10e**	**FY09e**	**FY10e**	**FY09e**	**FY10e**	**FY09e**	**FY10e**	**Comments**
Hold-rated stocks														
ABB Ltd India #	ABB IN	905	835	Hold	(4.6)	20	18	26	**19**	37	**38**	8	6	We like ABB, for having product sales that exhibit counter cyclical traits
Bharat Heavy Electricals	BHEL IN	1563	1335	Hold	(8.6)	18	17	20	**14**	32	**36**	10	8	Already washed out from disappointing Q4, not compelling but good relative
Stocks to avoid (or wait for a pull back before buying)														
Siemens India Ltd ##	SIEM IN	472	420	Sell	(11.1)	20	16	21	**15**	35	**39**	23	19	Most of the pain behind us, Wait for stock to fall to INR 360 before turning aggressive
Larsen & Toubro Ltd	LT IN	2443	2000	Sell	(18.1)	15	16	23	**17**	25	**28**	6	5	Guidance seems optimistic, Lion's share of pain behind us, Wait for stock to fall to INR 1800 before turning aggressive
Areva T&D India Ltd #	ATD IN	1438	1000	Sell	(30.5)	11	8	26	**22**	39	**33**	9	7	Key concern is company's ability to manage downturn. High leverage and low support from internal accurals
Voltas Ltd	VOLT IN	124	100	Sell	(19.4)	21	13	16	**12**	33	**31**	6	4	Extensive residential and commercial construction exposure, not much pricing power
Thermax Ltd	TMX IN	375	270	Sell	(28.0)	6	4	13	**12**	31	**22**	5	4	Slowing growth and weaker margins likely in 2H09
IVRCL	IVRC IN	295	225	Sell	(23.7)	-3	10	13	**11**	15	**16**	2	2	Pricing and material would get worse, residential and commercial construction negative rate of chg is accelerating
NTPC	NATP IN	165	135	Sell	(18.2)	-5	9	20	18	12	13	3	3	Valuations are rich
Tata Power	TPWR IN	1002	765	Sell	(23.7)	73	14	13	11	19	18	3	2	Great story, regulators actions in near term is a concern
RPL	RPWR IN	132	120	Sell	(9.1)	4	-81	337	1787	1	0	6	6	Avoid until clarity emerges on gas supplies and coal use from Sasan fields for another 4000MW MP Power
Lanco	LNCI IN	288	205	Sell	(28.8)	53	42	5	7	22	18	2	1	Unfavourable price/cost for E&C, high leverage and dwindling support from internal accruals
IRB	IRB IN	142	130	Sell	(8.5)	94	136	19	8	18	26	3	2	Will be hit by rising interest cost

Source: Deutsche Bank, Bloomberg,

 # Ma 09 = to Dec 08
Ma 09 = Sep 08

Capital Goods

Asia India
Industrials Manufacturing

18 July 2008

ABB Ltd India

Reuters: **ABB.BO**

Among the best in class but rich valuations; d/g to Hold

Best in industrial space, but not good enough for a Buy
ABB's business model is robust enough to withstand down-cycle pains better than its peers. While the slowdown in large ticket orders will hurt ABB, its large product suite is meant for down cycle - i.e, equipment for energy efficiency, productivity improvement, water management and alternate energy. We cut our estimates in anticipation of a cyclical turnaround and lower TP to 835/sh, -4% downside, and downgrade to Hold.

Slowdown should have relatively minor impact on ABB India
Over the last eight years the company has reported a 38% CAGR in EPS – no dilution and net debt/equity at negative levels. Given that the product mix caters to deep-cycle and short-cycle segments, ABB's earnings growth may not be greatly affected by an economic slowdown.

Robust balance sheet is more important than 41% EPS CAGR
ABB has fared better than peers, with the least increase in debtor days. Capex is financed by internal accruals only. FCF generation is consistent. Our analysis shows that FCF yield is positive for ABB under stress scenarios of lower revenue booking, higher costs and rising working cycles.

TP lowered to INR 835/sh; execution is the key risk
Our target price is based on an average of 18x PE CY09e (earlier 28x CY09e) and EV/EBITDA of 11.5x CY09e. The PE is about 10% higher than the lowest level of the last 14-year trading band. ABB India enjoys superior RoEs and cash flows compared with peers in India and also to the levels last seen in the downcycle. Key upside risks: higher proportion of export sales and increasing pricing power. Key downside risks: slowdown in T&D capex and quarterly earnings volatility.

Forecasts and ratios

Year End Dec 31	2006A	2007A	2008E	2009E	2010E
Sales (INRm)	42,740.1	59,303.1	**75,589.5**	100,211.0	135,667.3
EBITDA (INRm)	4,767.1	7,246.3	**10,227.8**	14,205.6	18,315.1
Reported NPAT (INRm)	3,403.1	4,916.7	**7,027.5**	9,812.5	12,462.4
Reported EPS FD(INR)	16.06	23.20	**33.16**	46.31	58.81
DB EPS FD(INR)	16.06	23.20	**33.16**	46.31	58.81
OLD DB EPS FD(INR)	16.06	23.20	**34.63**	50.14	63.56
% Change	0.0%	0.0%	**-4.2%**	-7.6%	-7.5%
DB EPS growth (%)	60.0	44.5	**42.9**	39.6	27.0
PER (x)	35.4	45.9	**26.4**	18.9	14.9
EV/EBITDA (x)	24.0	30.2	**17.1**	12.3	9.6

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

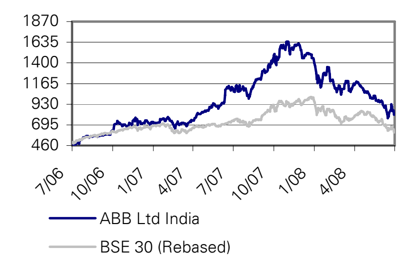
Hold

Price at 17 Jul 2008 (INR)	**875.00**
Price target - 12mth (INR)	**835.00**
52-week range (INR)	**1,643.65 - 769.70**
BSE 30	**12,576**

Key changes

Rating	Buy to Hold ↓	
Price target	1,430.00 to 835.00 ↓	**-41.6%**
Sales (FYE)	78,731 to 75,590 ↓	**-4.0%**
Op prof margin (FYE)	13.1 to 13.0 ↓	**-0.6%**
Net profit (FYE)	7,338.1 to 7,027.5 ↓	**-4.2%**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-15.0*	*-28.2*	*-25.7*
BSE 30	*-18.3*	*-22.6*	*-17.9*

Stock data

Market cap (INRm)	**185,418**
Market cap (USDm)	**4,305**
Shares outstanding (m)	**211.9**
Major shareholders	**ABB (Parent) (52.11%)**
Free float (%)	**48**
Avg daily value traded (USDm)	**9.9**

Key indicators (FY1)

ROE (%)	**37.0**
Net debt/equity (%)	**-44.8**
Book value/share (INR)	**102.75**
Price/book (x)	**8.5**
Net interest cover (x)	**122.8**
Operating profit margin (%)	**13.0**

Infrastructure Research Team

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:09 July 2008

Running the numbers

Asia

India

Manufacturing

ABB Ltd India

Reuters: ABB.BO Bloomberg: ABB IN

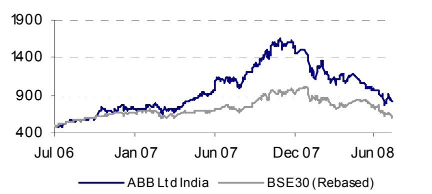
Hold

Price (17 Jul 08)	INR 875.00
Target price	INR 835.00
52-week Range	INR 769.70 - 1,643.65
Market Cap (m)	INRm 185,418 USDm 4,305

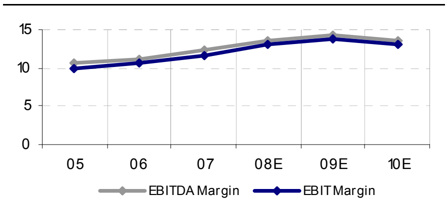
Company Profile

ABB Ltd. India (subsidiary of ABB) is involved in the business of power technology and automation products. It manufactures a wide range of electrical, mechanical and electronic equipment for power transmission and distribution.

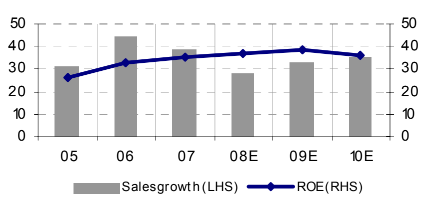
Price Performance



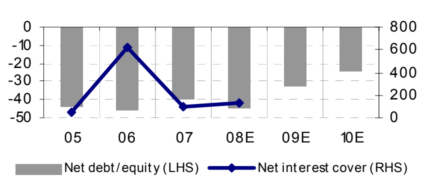
Margin Trends



Growth & Profitability



Solvency



Manish Saxena
+91 22 6658 4034 manish.saxena@db.com

Fiscal year end 31-Dec	2005	2006	2007	2008E	2009E	2010E
Financial Summary						
DB EPS (INR)	10.04	16.06	23.20	33.16	46.31	58.81
Reported EPS (INR)	10.04	16.06	23.20	33.16	46.31	58.81
DPS (INR)	1.82	2.28	2.57	7.16	10.47	10.47
BVPS (INR)	42.7	56.4	76.7	102.7	138.6	186.2
Weighted average shares (m)	212	212	212	212	212	212
Average market cap (INRm)	61,539	120,505	225,609	185,418	185,418	185,418
Enterprise value (INRm)	56,685	114,282	218,481	174,949	175,155	175,068
Valuation Metrics						
P/E (DB) (x)	28.9	35.4	45.9	26.4	18.9	14.9
P/E (Reported) (x)	28.9	35.4	45.9	26.4	18.9	14.9
P/BV (x)	9.04	13.15	19.71	8.52	6.31	4.70
FCF Yield (%)	nm	1.5	0.7	2.6	1.1	1.3
Dividend Yield (%)	0.6	0.4	0.2	0.8	1.2	1.2
EV/Sales (x)	1.9	2.7	3.7	2.3	1.7	1.3
EV/EBITDA (x)	17.8	24.0	30.2	17.1	12.3	9.6
EV/EBIT (x)	19.2	25.4	31.6	17.8	12.8	9.8
Income Statement (INRm)						
Sales revenue	**29,631**	**42,740**	**59,303**	**75,590**	**100,211**	**135,667**
Gross profit	**8,319**	**11,295**	**16,383**	**21,282**	**29,061**	**38,665**
EBITDA	**3,182**	**4,767**	**7,246**	**10,228**	**14,206**	**18,315**
Depreciation	234	265	324	400	500	500
Amortisation	0	0	0	0	0	0
EBIT	**2,948**	**4,502**	**6,922**	**9,828**	**13,706**	**17,815**
Net interest income(expense)	-66	-7	-68	-80	-10	-10
Associates/affiliates	0	0	0	0	0	0
Exceptionals/extraordinaries	0	0	0	0	0	0
Other pre-tax income/(expense)	454	737	710	900	950	1,000
Profit before tax	**3,335**	**5,232**	**7,565**	**10,648**	**14,646**	**18,805**
Income tax expense	1,208	1,829	2,648	3,620	4,833	6,343
Minorities	0	0	0	0	0	0
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	**2,127**	**3,403**	**4,917**	**7,028**	**9,813**	**12,462**
DB adjustments (including dilution)	0	0	0	0	0	0
DB Net profit	**2,127**	**3,403**	**4,917**	**7,028**	**9,813**	**12,462**
Cash Flow (INRm)						
Cash flow from operations	**899**	**2,786**	**3,102**	**6,659**	**3,813**	**3,505**
Net Capex	-936	-932	-1,585	-1,800	-1,800	-1,050
Free cash flow	**-36**	**1,854**	**1,517**	**4,859**	**2,013**	**2,455**
Equity raised/(bought back)	1	0	0	0	0	0
Dividends paid	-387	-483	-545	-1,518	-2,218	-2,218
Net inc/(dec) in borrowings	12	-12	-10	10	0	0
Other investing/financing cash flows	252	98	69	0	0	0
Net cash flow	**-158**	**1,457**	**1,030**	**3,351**	**-206**	**237**
Change in working capital	*0*	*0*	*0*	*0*	*0*	*0*
Balance Sheet (INRm)						
Cash and other liquid assets	4,010	5,464	6,429	9,780	9,574	9,660
Tangible fixed assets	2,651	3,318	4,579	5,979	7,279	7,829
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	872	774	705	705	705	705
Other assets	15,862	22,502	34,678	43,154	57,654	78,078
Total assets	**23,394**	**32,058**	**46,390**	**59,617**	**75,211**	**96,271**
Interest bearing debt	28	15	6	15	15	15
Other liabilities	14,325	20,084	30,121	37,828	45,828	56,795
Total liabilities	**14,353**	**20,100**	**30,127**	**37,843**	**45,843**	**56,810**
Shareholders' equity	9,041	11,958	16,263	21,773	29,367	39,461
Minorities	0	0	0	0	0	0
Total shareholders' equity	**9,041**	**11,958**	**16,263**	**21,773**	**29,367**	**39,461**
Net debt	*-3,982*	*-5,449*	*-6,423*	*-9,764*	*-9,558*	*-9,645*
Key Company Metrics						
Sales growth (%)	31.1	44.2	38.8	27.5	32.6	35.4
DB EPS growth (%)	41.3	60.0	44.5	42.9	39.6	27.0
EBITDA Margin (%)	10.7	11.2	12.2	13.5	14.2	13.5
EBIT Margin (%)	9.9	10.5	11.7	13.0	13.7	13.1
Payout ratio (%)	18.2	14.2	11.1	21.6	22.6	17.8
ROE (%)	26.1	32.4	34.8	37.0	38.4	36.2
Capex/sales (%)	3.2	2.2	2.7	2.4	1.8	0.8
Capex/depreciation (x)	4.0	3.5	4.9	4.5	3.6	2.1
Net debt/equity (%)	-44.0	-45.6	-39.5	-44.8	-32.5	-24.4
Net interest cover (x)	44.4	620.8	101.6	122.8	nm	nm

Source: Company data, Deutsche Bank estimates

Investment thesis

Outlook

We downgrade ABB to Hold as our revised TP implies 4% downside.

1. Based on our sector outlook of a slowdown in new investments in India, we have trimmed our order inflow and earnings expectations. We now forecast an EPS CAGR of 41% over CY07-09e. The drop in ROE at 100 bps in the forecast period is the least in the industrial's space.
2. ABB's business model has the robustness to withstand down-cycle pains much better than peers. While the slowdown in large ticket orders should hurt ABB, one needs to note that the company has a large product suite especially meant for down cycle, i.e., equipment for energy efficiency, productivity improvement, water management and alternate energy.
3. We are also more reassured about the quality of ABB's earnings and its balance sheet. It has fared relatively better than peers, with the least increase in debtor days. Capex is financed by internal accruals only. FCF generation is consistent. Our analysis shows that FCF yield is positive for ABB under stress scenarios of lower revenue booking, higher costs and rising working cycles.
4. ABB has traded in a PE band of 16x-64x over the last 14 years. As we head into a down cycle we believe that valuations will have to be readjusted to the down-cycle multiples.

Valuation

We have lowered our 12-month target price from INR1,430/sh to INR835/sh. Our TP is now based on an average of forward PE multiple of 18x CY09e (earlier 28x CY09e) and a forward EV/EBITDA of 11.5x. The valuations on a PE basis at 18x is about 10% premium to the lowest levels traded by ABB India over the last 14 years - which gives us a value at INR 835/sh. In the current cycle the balance sheet is far more robust and RoE are much higher than those seen in the previous down cycle. Also, approximately 25% of sales are through channel partners, which are largely consumables and exhibit good counter cyclical traits. Note that our target PE multiples are higher than those of the ABB (parent) which is trading at 15x CY09e. This seems reasonable as ABB India's RoE are ~ 300-400 bps higher than ABB AG (parent). In earlier down cycles, on an EV/EBITDA basis, barring the asbestos liability crises for the parent (in CY00-02) - the company has traded in the range of 11-14x. Our TP based on marginal premium to those of previous down cycle at11.5x CY09e also gives a value of INR 835/sh.

Risks

Risks on upside: (1) With 95% of revenues being booked in India, the challenge for ABB management would be to sell its products globally if its execution pace in India slows down. If ABB India is able to scale up exports to more than 15-20%, there is a potential upside risk in revenue estimate. Based on our sensitivity analysis, 10% higher-than-estimated revenues drives up earnings by 16-17%. (2) Higher margins due to superior product pricing (note that most of the new locations are meant for product expansions). If the company is able to garner ~1% higher than our estimated margins, the EPS would rise by 7%.

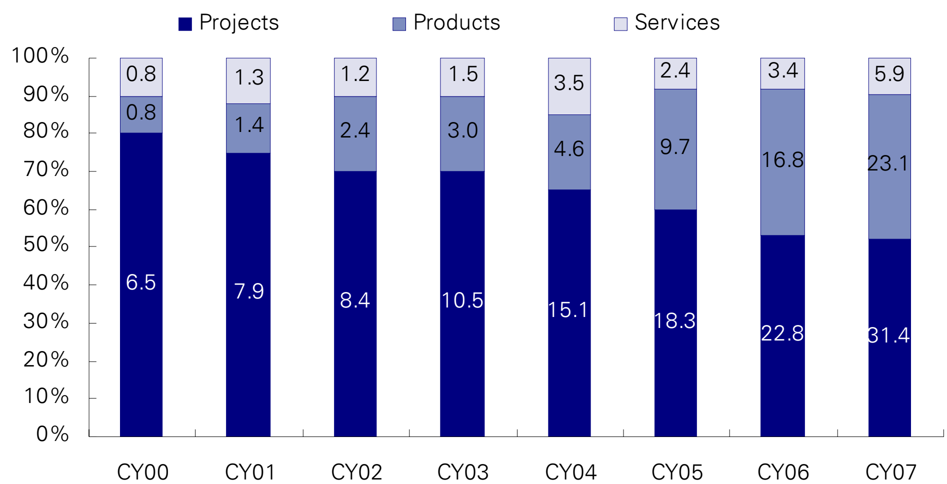
Risks on downside: Slowdown in T&D capex, poor execution, quarterly earnings volatility and large draw out of liquidity.

Robust business model

The most robust business model among Indian peers

Following the restructuring (ABB sold its power generation business), the company's focus has been to enhance product sales in the overall portfolio.

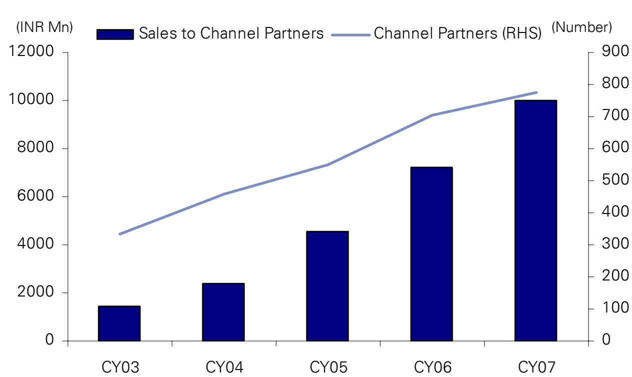
Figure 94: Increasing share of products in revenues



Source: Deutsche Bank, Company data

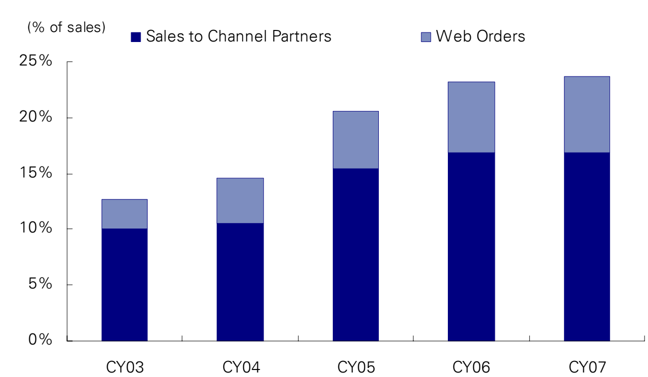
Management's approach has been to diversify its customer base through a greater focus on sales through channel partners. These sales represent a lot of consumables, where we believe the company has a lot of pricing power. Our visits to a few of these channel partners show that sales through them are rising by more than 20-25%. Product pricing is at a premium and there is a greater acceptance from end users. An additional focus has been online sales, which again helps the company reduce logistics and working capital costs.

Figure 95: Rising sales through channel partners



Source: Deutsche Bank, Company data

Figure 96: Sales through channel partners and the web



Source: Deutsche Bank, Company data

What is equally intriguing is that ABB's non-channel partner sales are also not very dependent on large greenfield or brownfield capex. As Figure 97 shows, a large portion of sales are typically for either automation (read energy efficiency improvement, productivity improvement) or for system upgrades (read loss reduction for discoms, etc.). Capex does not show much cyclicality. Also, as companies in a down-cycle tend to focus on reducing energy usage, capex is generally not price sensitive.

Figure 97: Product profile

	Deep Cycle	Short Cycle	Key customers
Power Product			
Transformers	☑	☑	NTPC, NALCO, Exports to Sub-Saharan Africa, Latin America, S.E. Asia
Circuit breakers, Panels, Relays, Low-cost compact substations, Capacitators, Switchgear		☑	
Power System			
Development of transmission network, Transmission and Distribution substation, SCADA system	☑		PGCIL, KPTCL, Adani Power, Delhi Metro, Karnataka Discoms,
Power distribution improvement, Upgrading of rural networks, IEC 61850 protocol, Rural load management, Electricals Balance of Plant		☑	
Automation product			
High current rectifiers, Water and sewage applications, Lift irrigation projects, Electrical motors	☑		Tata Steel, Bhushan Steel, Vedanta Aluminum, Hindustan Zinc, Channel Partners
Integrated building management solutions		☑	IT, SEZs, Shopping malls, Pharma and healthcare
Process Automation			
Automation of plant (paper, cement, steel), SCADA for oil and gas, Emergency shutdown systems for oil and gas	☑		Metal, Cement, Paper, Oil and Gas industry
Crane systems, Turbo charging		☑	

Source: Deutsche Bank, company data

Assumptions and sensitivity

Assumptions

We showcase our revised forecasts in Figure 98. We have lowered our order inflow assumptions by 4-9% in the forecasts period. Also, as we have factored in a slight slowdown in project execution, the revenue booking has been lowered by 4-8%. We have factored in decline in the OPM by ~50bps in CY09e.

Figure 98: Change in assumptions and forecasts

	CY08e			CY09e		
INR Bn	**Old**	**New**	**% change**	**Old**	**New**	**% change**
Order Inflow	111	107	(4)	152	137	(9)
Order backlog	82	81	(1)	124	117	(5)
Sales	79	76	(4)	109	100	(8)
EBITDA	10.3	9.8	(5)	15	14	(11)
EBITDA margin (%)	13.1	13.0	(8)bps	14.2	13.7	(52)bps
Net Income	7	7	(4)	11	10	(8)
EPS (INR/sh)	35	33	(4)	50	46	(8)

Source: Deutsche Bank

Sensitivity

We have performed a sensitivity analysis on our earnings model with regards to changes in revenue recognition and profit recognition cycles.

- A 10% change in revenue can potentially impact net income by 16% in CY09e.
- A 1% reduction in raw material expenses vs. our estimate can lead to an increase of 7% in net income in CY09e.
- A 10-day decrease in the working capital cycle leads to a 140 bps increase in FCF yield.

Please note that FCF is not turning negative in any of the sensitivity scenarios.

Figure 99: Sensitivity analysis

Year end December	CY08e				CY09e			
	Sales	**EBITDA**	**PAT**	**FCF Yield**	**Sales**	**EBITDA**	**PAT**	**FCF Yield**
Base Case estimates (INR mn)	**75590**	**11128**	**7028**	**2.6%**	**100211**	**15156**	**9813**	**1.1%**
Sensitivity to Revenue Recognition cycle								
10% higher than our estimates	83148	12919	8210	3.6%	110232	17521	11397	2.1%
Change (%)-w.r.t. base case	10	16	17	97	10	16	16	104
10% lower than estimates	68031	9336	5845	2.2%	90190	12791	8228	0.3%
Change (%)-w.r.t. base case	(10)	(16)	(17)	(42)	(10)	(16)	(16)	(82)
Sensitivity to profit Recognition cycle								
RM cost 1% lower than estimates	75590	11893	7532	3.2%	100211	16158	10484	1.6%
Change (%)-w.r.t. base case	-	7	7	57	(0)	7	7	51
RM cost 1% higher than estimates	75590	10363	6523	2.6%	100211	14153	9141	0.8%
Change (%)-w.r.t. base case	-	(7)	(7)	(2)	(0)	(7)	(7)	(28)
Sensitivity to WC cycles								
Sensitivity if WC increased by 10 days	75590	11128	7028	1.4%	100211	15156	9813	0.6%
Change (%)-w.r.t. base case	-	-	-	(123)				(49)
Sensitivity if WC decreased by 10 days	75590	11128	7028	4.4%	100211	15156	9813	2.5%
Change (%)-w.r.t. base case	-	-	-	178				140

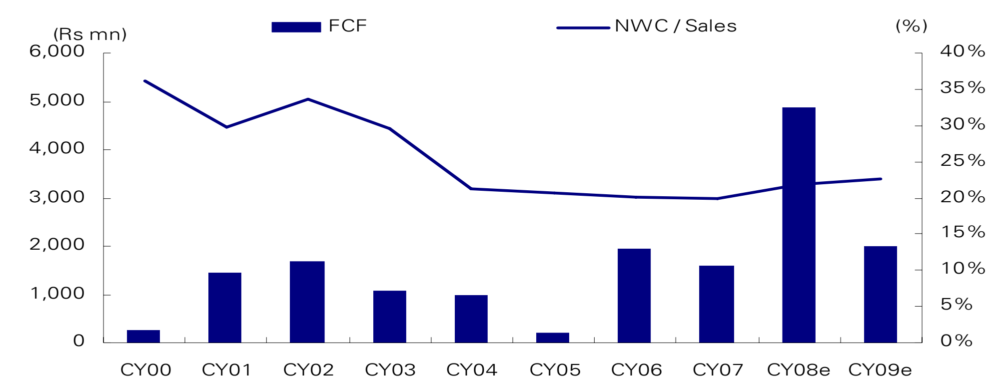
Source: Deutsche Bank

Valuation

Lower TP INR 835/sh; Downgrade to Hold

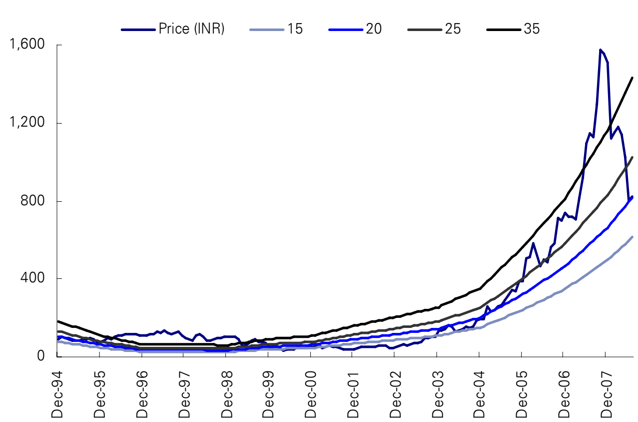
We have lowered our 12-month target price from INR1,430/sh to INR835/sh. Our TP is now based on an average of forward PE multiple of 18x CY09e (earlier 28x CY09e) and a forward EV/EBITDA of 11.5x. The valuations on a PE basis at 18x is about 10% premium to lowest levels traded by ABB India over the last 14 years- which gives us a value at INR 835/sh. In the current cycle the balance sheet is far more robust and RoE are much higher than those seen in the previous down cycle. Also, approximately 25% of sales are through channel partners, which are largely consumables and exhibit good counter cyclical traits. Note that our target PE multiples are higher than those of the ABB (parent) which is trading at 15x CY09e. This seems reasonable as ABB India's RoE are ~ 300-400 bps higher than ABB AG (parent). In earlier down cycles, on EV/EBITDA basis, barring the asbestos liability crises for the parent (in CY00-02) - the company has traded in the range of 11-14x. Our TP based on marginal premium to those of previous down cycle at11.5x CY09e also gives a value of INR 835/sh.

Figure 100: Consistent FCF generations and stable NWC



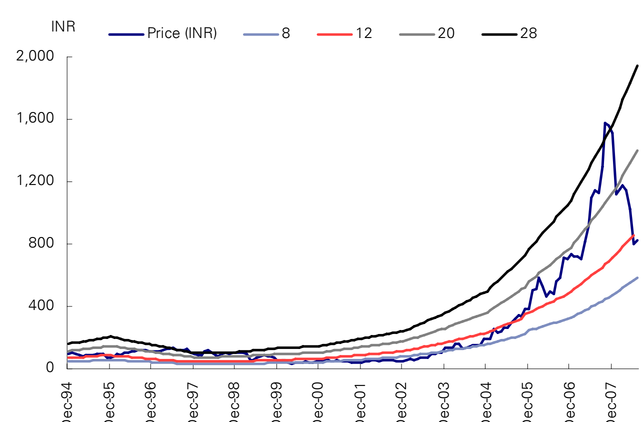
Source: Deutsche Bank, Company data

Figure 101: ABB India - 1-year forward P/E band



Source: Deutsche Bank, Bloomberg

Figure 102: ABB India - 1-year forward EV/EBITDA band



Source: Deutsche Bank, Bloomberg

Asia India
Industrials Manufacturing

18 July 2008

Areva T&D

Reuters: **AREV.BO** Bloomberg: **ATD IN**

Initiating coverage: Key Sell in the sector

Most expensive stock in industrials space; initiate with a Sell
Areva India trades at a premium to ABB India and Siemens India (henceforth referred to simply as 'ABB' and 'Siemens'), with investors expecting benefits from capex related to nuclear plant construction in India. Debtor days at 187 (54 higher than its peer group) are driving FCF down to virtually zero. Capex is being funded largely out of debt (uncommon in MNC firms in India); this could drag down earnings, RoE and RoCE. A TP of INR1,000 (31% downside potential) makes this our key Sell in the sector.

Areva's financials show that it is not easy to do business in India
Areva's debtor days are 22% higher than ABB's and 81% above those at Siemens. This raises questions about the high margins reported by Areva (~544bps higher than at ABB and 962bps higher than at Siemens). The company may need to refocus on shortening its customers' payment cycles -- which may take some time, given Indian operators' historical resistance to change.

We forecast modest growth, negative FCF and a sharp drop in RoE
We expect FCF to remain negative due to exceptionally high debtor days and capex. We forecast a 20% EPS CAGR driven by 22% sales growth. We estimate RoCE will drop sharply from 54% in CY07 to 33% in CY10.

Valuation looks expensive at current levels
Our TP of INR1,000 is based on an average P/E multiple of 15x CY09e -- a 20% discount to ABB (see page 73) and a DCF analysis (assuming 14% CoE at an 8.2% risk-free rate, 4.7% risk premium, 1.3 beta and 3% terminal free cash flow growth). Key upside risks are reduction in debtor days, quick stabilization of new capacities, and Areva India being a likely beneficiary from the nuclear deal with US.

Forecasts and ratios

Year End Dec 31	2006A	2007A	2008E	2009E	2010E
Sales (INRm)	16,058.1	20,062.7	**24,741.8**	30,639.8	36,854.7
EBITDA (INRm)	2,097.9	3,574.6	**4,311.7**	5,519.8	6,670.8
Reported NPAT (INRm)	1,370.2	2,167.5	**2,577.1**	3,084.6	3,696.9
Reported EPS FD(INR)	31.24	45.33	**53.89**	64.50	77.31
DB EPS FD(INR)	30.16	45.33	**53.89**	64.50	77.31
DB EPS growth (%)	188.6	50.3	**18.9**	19.7	19.9
PER (x)	21.8	35.3	**26.7**	22.3	18.6
EV/EBITDA (x)	13.5	21.6	**16.6**	13.2	11.0
DPS (net) (INR)	6.00	9.00	**5.00**	7.00	10.00
Yield (net) (%)	0.9	0.6	**0.3**	0.5	0.7

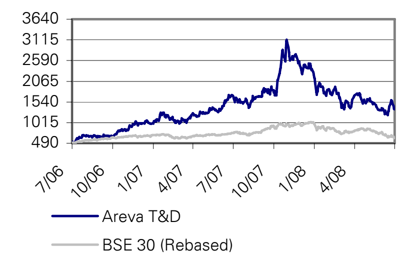
Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

Sell

Price at 17 Jul 2008 (INR)	**1,438.00**
Price target - 12mth (INR)	**1,000.00**
52-week range (INR)	**3,117.25 - 1,203.25**
BSE 30	**12,576**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*1.7*	*-20.3*	*-20.4*
BSE 30	*-18.3*	*-22.6*	*-17.9*

Stock data

Market cap (INRm)	**68,766**
Market cap (USDm)	**1,596**
Shares outstanding (m)	**47.8**
Major shareholders	**Promoters (72.18%)**
Free float (%)	**28**
Avg daily value traded (USDm)	**0.7**

Key indicators (FY1)

ROE (%)	**38.6**
Net debt/equity (%)	**35.5**
Book value/share (INR)	**164.65**
Price/book (x)	**8.7**
Net interest cover (x)	**14.5**
Operating profit margin (%)	**16.2**

Infrastructure Research Team

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Model updated:10 July 2008

Running the numbers

Asia

India

Manufacturing

Areva T&D

Reuters: AREV.BO Bloomberg: ATD IN

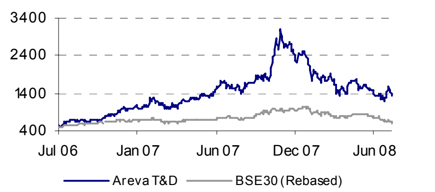
Sell

Price (17 Jul 08)	INR 1,438.00
Target price	INR 1,000.00
52-week Range	INR 1,203.25 - 3,117.25
Market Cap (m)	INRm 68,766 USDm 1,596

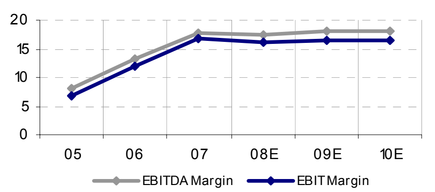
Company Profile

Areva T &D India (AREVA), the Indian subsidiary of Areva T & D SA, France, supplies a range of solutions for transmission and distribution of energy. and manufacturing of other industrial equipment.

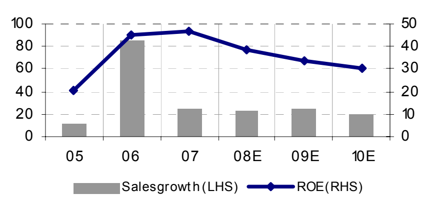
Price Performance



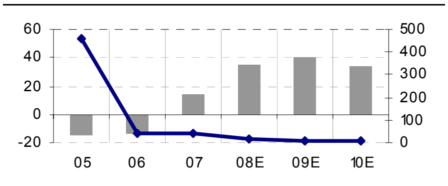
Margin Trends



Growth & Profitability



Solvency



Manish Saxena
+91 22 6658 4034 manish.saxena@db.com

Fiscal year end 31-Dec	2005	2006	2007	2008E	2009E	2010E
Financial Summary						
DB EPS (INR)	10.45	30.16	45.33	53.89	64.50	77.31
Reported EPS (INR)	10.45	31.24	45.33	53.89	64.50	77.31
DPS (INR)	3.33	6.00	9.00	5.00	7.00	10.00
BVPS (INR)	55.0	80.2	114.9	164.7	221.0	286.6
Weighted average shares (m)	40	44	48	48	48	48
Average market cap (INRm)	8,263	28,854	76,606	68,766	68,766	68,766
Enterprise value (INRm)	7,852	28,267	77,388	71,560	73,020	73,438
Valuation Metrics						
P/E (DB) (x)	19.8	21.8	35.3	26.7	22.3	18.6
P/E (Reported) (x)	19.8	21.1	35.3	26.7	22.3	18.6
P/BV (x)	6.44	13.05	20.92	8.73	6.51	5.02
FCF Yield (%)	1.8	0.8	nm	nm	nm	0.2
Dividend Yield (%)	1.6	0.9	0.6	0.3	0.5	0.7
EV/Sales (x)	0.9	1.8	3.9	2.9	2.4	2.0
EV/EBITDA (x)	11.4	13.5	21.6	16.6	13.2	11.0
EV/EBIT (x)	13.2	14.8	23.1	17.9	14.5	12.1
Income Statement (INRm)						
Sales revenue	**8,695**	**16,058**	**20,063**	**24,742**	**30,640**	**36,855**
Gross profit	**2,560**	**5,207**	**7,391**	**8,992**	**11,184**	**13,415**
EBITDA	**689**	**2,098**	**3,575**	**4,312**	**5,520**	**6,671**
Depreciation	96	187	231	307	470	594
Amortisation	0	0	0	0	0	0
EBIT	**593**	**1,911**	**3,343**	**4,004**	**5,049**	**6,076**
Net interest income(expense)	-1	-44	-85	-276	-652	-807
Associates/affiliates	0	0	0	0	0	0
Exceptionals/extraordinaries	0	71	0	0	0	0
Other pre-tax income/(expense)	56	151	178	219	276	332
Profit before tax	**648**	**2,018**	**3,436**	**3,947**	**4,674**	**5,601**
Income tax expense	231	719	1,269	1,370	1,589	1,904
Minorities	0	0	0	0	0	0
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	**417**	**1,370**	**2,168**	**2,577**	**3,085**	**3,697**
DB adjustments (including dilution)	0	-47	0	0	0	0
DB Net profit	**417**	**1,323**	**2,168**	**2,577**	**3,085**	**3,697**
Cash Flow (INRm)						
Cash flow from operations	**408**	**394**	**525**	**1,082**	**932**	**1,041**
Net Capex	-259	-172	-1,390	-2,814	-2,000	-900
Free cash flow	**149**	**221**	**-865**	**-1,732**	**-1,068**	**141**
Equity raised/(bought back)	8	79	0	0	0	0
Dividends paid	-110	-301	-479	-312	-375	-535
Net inc/(dec) in borrowings	100	-67	979	3,000	2,000	-500
Other investing/financing cash flows	-5	178	72	0	-1	0
Net cash flow	**143**	**111**	**-294**	**956**	**555**	**-894**
Change in working capital	*0*	*0*	*0*	*0*	*0*	*0*
Balance Sheet (INRm)						
Cash and other liquid assets	414	525	230	1,218	1,759	840
Tangible fixed assets	736	1,134	2,293	4,800	6,329	6,635
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	97	97	0	0	0	0
Other assets	6,672	9,920	14,644	17,132	20,860	25,558
Total assets	**7,919**	**11,675**	**17,167**	**23,150**	**28,948**	**33,034**
Interest bearing debt	100	33	1,012	4,012	6,012	5,512
Other liabilities	5,625	7,807	10,662	11,264	12,369	13,818
Total liabilities	**5,725**	**7,840**	**11,674**	**15,276**	**18,381**	**19,330**
Shareholders' equity	2,194	3,835	5,493	7,874	10,567	13,704
Minorities	0	0	0	0	0	0
Total shareholders' equity	**2,194**	**3,835**	**5,493**	**7,874**	**10,567**	**13,704**
Net debt	*-314*	*-491*	*782*	*2,794*	*4,253*	*4,672*
Key Company Metrics						
Sales growth (%)	12.2	84.7	24.9	23.3	23.8	20.3
DB EPS growth (%)	18.0	188.6	50.3	18.9	19.7	19.9
EBITDA Margin (%)	7.9	13.1	17.8	17.4	18.0	18.1
EBIT Margin (%)	6.8	11.9	16.7	16.2	16.5	16.5
Payout ratio (%)	31.9	19.2	19.9	9.3	10.9	12.9
ROE (%)	20.2	45.5	46.5	38.6	33.5	30.5
Capex/sales (%)	3.0	3.6	6.9	11.4	6.5	2.4
Capex/depreciation (x)	2.7	3.1	6.0	9.2	4.3	1.5
Net debt/equity (%)	-14.3	-12.8	14.2	35.5	40.3	34.1
Net interest cover (x)	458.7	43.4	39.4	14.5	7.7	7.5

Source: Company data, Deutsche Bank estimates

Investment thesis

Outlook

We initiate coverage of Areva T&D India Ltd. with a Sell for the following reasons:

- Areva's debtor days are 22% higher than those of ABB and 81% higher than Siemens'. This raises questions about the high margins reported by Areva (~544bps higher than at ABB and 962bps higher than at Siemens). The company may need to refocus on shortening its customers' payment cycles – which may take some time, given the historical resistance to change in India.
- We forecast a 20% EPS CAGR driven by 22% sales growth. However, RoCE should drop from 54% in CY07 to 33% in CY10. We expect FCF to remain negative due to debtor days and capex.
- Key factors to watch regarding Areva are its ability to drive up product sales when investment in projects could see a slowdown over the next two to three years, and the proportion of sales from new capacities that could be exported
- Areva has traded in a PE valuation band of 8x-46x over the last three years. Part of the re-rating was driven by the 144% CAGR in CY05-CY07 earnings. With our expectation of a capex slowdown (detailed in our sector report), the forecast EPS CAGR is now substantially lower. With negative FCF yields, we believe that the stock should trade closer to down-cycle multiples.

Valuation

Our target price of INR1,000 is based on the average of two methods: a forward PE multiple, which yields a valuation of INR970, and a DCF analysis, which yields a valuation of INR1015.

We have assumed a PE multiple of 15x (~20% discount to ABB). This is at a 20% discount to its MNC peer ABB and in line with its regional peers. This looks reasonable as a) the multiple of 15x one-year forward EPS CAGR of 20% implies a PEG of less than 1 and b) the discount to ABB is driven by: i) ABB's higher CY09e RoE of 40% compared to Areva's 35%; ii) ABB's market leadership in India in the T&D space; and iii) ABB's superior working capital cycle. Our DCF approach assumes a CoE of 14% at a risk-free rate of 8.2%, 4.7% risk premium (both reflecting the DB assessment), beta of 1.3 (based on three-year weekly stock prices from Bloomberg) and terminal free cash flow growth of 3%.

Risks

Key upside risks to our assessment are:

- A higher-than-expected reduction in debtor days. While we have estimated debtor days to come down to 150, as guided by management, any reduction beyond this level would make the financials of the company far superior to most of its peers.
- We have factored in six months' stabilization time for the new plant. If the company is able to stabilize its plants before 2QCY09, our numbers for CY09 could be at risk (to the upside). Sales reaching 10% higher than expected would drive EPS up 25% and the value to INR1,200 (+20%), all else being equal.

News flow on the signing of a nuclear agreement between India and the US could have a positive impact on the stock. However, we would need to watch for any caveat whereby a certain amount of equipment would need to be sourced from India's manufacturing units. Such an event would have an impact on both valuation and long-term earnings. However, we cannot factor in this event until it actually materializes.

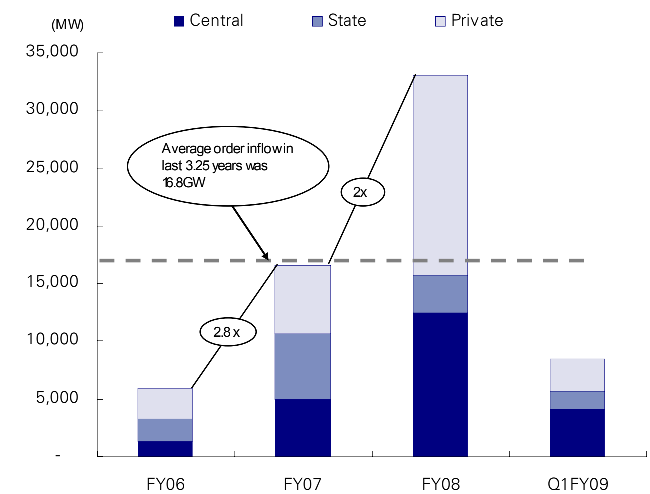
Dual problem: slowdown in order inflow and execution

Orders likely to slow over the next three years

Bottom up analysis of the new project awards suggests that the run rate of new orders could drop by 20% in a best case scenario and up to 44% in a pessimistic scenario

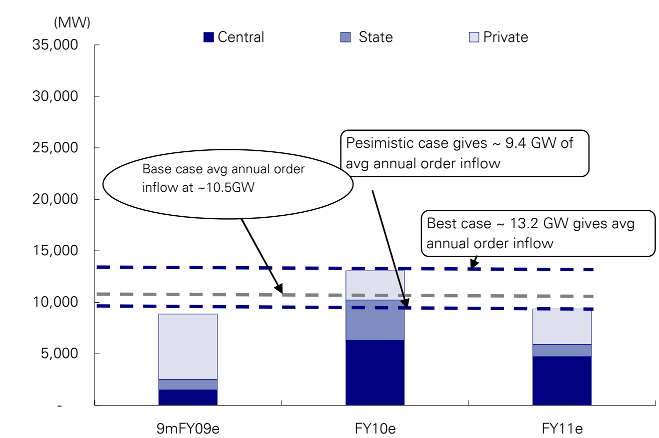
The biggest category for new project orders has been the private sector. Over the last three years the private sector has ordered power equipment for 28,545 MW of new capacity. Orders from the central sector were surprisingly lower at 22,902MW. The state sector was the lowest at 12,482MW. Apparently, the private sector feels that it is set for a major turnaround, and that because India has a large power deficit, returns could be quite high. Most of the private developers are looking at arbitrage for coal and superior project management skills.

Figure 103: Order inflow in the last three years



Source: Deutsche Bank, CEA

Figure 104: Expected order inflow in the next three years



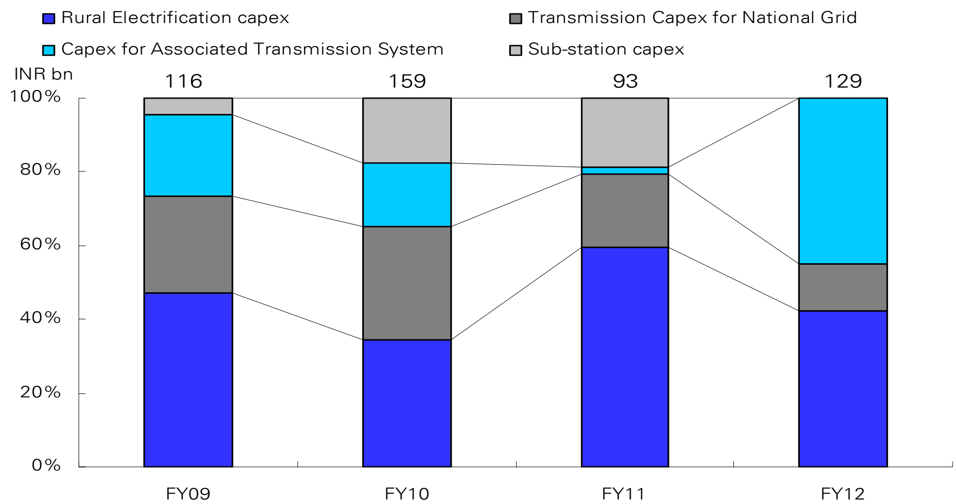
Source: Deutsche Bank, CEA

While it remains to be seen how much of the ordered capacity will finally see the light of day, our bottom-up analysis of the new project awards suggests that the run rate of new orders could drop by 20% in a best-case scenario and up to 44% in a pessimistic scenario. In reality, the figure may be somewhere in between and our estimates suggest that new awards could be about 30% lower than the rate seen over the last three years. The biggest risk to our calculation would be the availability of gas for new projects. At present we have extrapolated the policy decision of the group of central ministers for the next five years. According to the policy, the distribution of new gas finds should be prioritized in the following order: 1) fertilizer, 2) captive power, 3) city gas, and 4) existing power plants. That leaves hardly any gas for new power plants.

Capex spend in transmission and distribution to follow suit

According to our estimates, the total order for the XIth plan period (i.e. FY07-FY12) is likely to be ~USD11.5bn, with capital expenditure of ~USD22bn over the next four years, far less than what has been envisaged by the government of India in its XIth five-year plan of USD150bn for the power sector.

Figure 105: Transmission order inflows



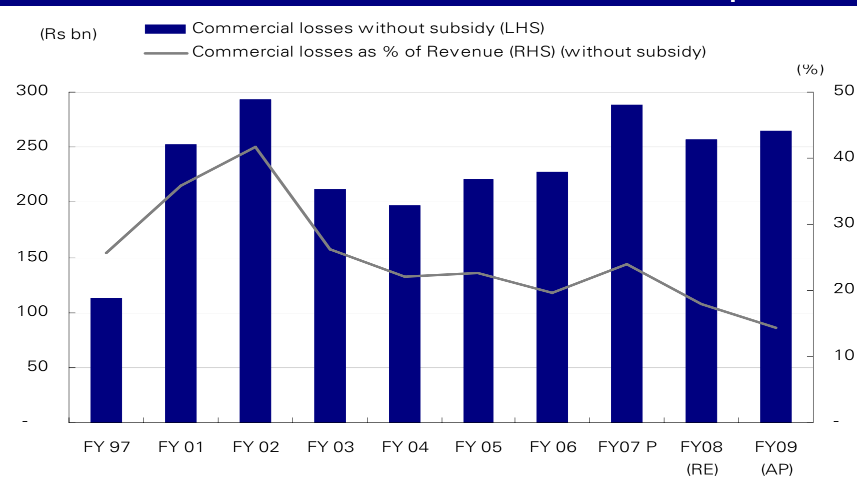
Source: Deutsche Bank, Central Electricity Authority, Ministry of Power, Projects Today, Infraline, State Electricity Boards, Power Grid Corporation of India

As mentioned in our sector report, about 68GW of projects in the planning/execution stage, with a capex outlay of INR1,816bn, i.e. USD 42bn, are at risk of being shelved / stalled

SEB capex likely to come down

Areva is dependent on a few large government agencies for most of its orders; currently, SEB losses are at 24% of total revenues of state utilities (FY07). The total distribution losses for all distribution companies have risen by a hefty 400 bps in FY07 as a percentage of revenues and are pegged at INR262bn -- close to the all-time high of INR293bn.

Figure 106: Commercial losses and losses as a % of revenue for state power utilities



Source: Report on "Impact of Restructuring of SEBs", Planning Commission, Central Electricity Authority and Power Finance Corporation, Economic Survey F07

Assumptions and forecasts

Key assumptions

Figure 107 underlines our main assumptions. We have assumed an order inflow CAGR of 18% in CY07-CY10. Accordingly, we forecast revenue CAGR of 22% in CY07-CY10. While we have cut forecast debtor days in line with management's guidance, we believe that this could also mean lower OPM.

Figure 107: Key assumptions and forecasts

In INR mn	**CY07**	**CY08e**	**CY09e**	**CY10e**
Order Inflows	29,343	35,212	42,254	48,592
Order Book	27,465	37,935	49,549	61,286
Average Cycle time (No of Years)	2.3	2.8	3.2	3.5
Net Revenues	20,063	24,742	30,640	36,855
Cost Assumption (%)				
RM/Sales cost	63.2	63.7	63.5	63.6
Other Expenditure/ Sales	7.6	7.8	7.7	7.6
Expense / employee	11.4	11.1	10.7	10.7
Number of Employees (No's)	3500	3850	4100	4200
Margin Assumption				
EBITDA Margin (%)	18.7	18.3	18.9	19.0
Other Assumptions				
Capex Assumption	**1,390**	**2,814**	**2,000**	**900**
Debtor days	187	170	150	150

Source: Deutsche Bank, Company

Financial forecast

Based on our assumptions, the snapshot of the financial forecast is indicated in Figure 108. We estimate 20% earnings CAGR for CY07-10.

Figure 108: Financial forecast

	CY07	CY08e	CY09e	CY10e
Profit and Loss (INR mn)				
Revenues	20,063	24,742	30,640	36,855
EBITDA	**3,575**	**4,312**	**5,520**	**6,671**
Depreciation	231	307	470	594
Interest and Finance Charges	85	276	652	807
PBT	3,436	3,947	4,674	5,601
Reported PAT	**2,163**	**2,660**	**3,085**	**3,697**
Balance Sheet (INR mn)				
Assets				
Net fixed assets	2293	4800	6329	6635
Cash & bank	230	1218	1759	840
Total current assets (excl Cash)	14361	16810	20461	25116
Total assets	**17,167**	**23,150**	**28,948**	**33,034**
Liabilities				
Paid-up capital	478	478	478	478
Reserves & surplus	5015	7396	10089	13226
Loans	0	0	0	0
Current Liabilities	9561	10168	10913	12117
Total liabilities	**17,167**	**23,150**	**28,948**	**33,034**
Key Ratios				
EBIDTA Margin (%)	18.7	18.3	18.9	19.0
PAT Margin (%)	10.8	10.4	10.1	10.0
RoE (%)	46	39	33	30
Net Debt: Equity (x)	14	35	40	34.09

Source: Deutsche Bank, Company

DB vs. consensus

Our estimates are broadly in line with consensus. The issue is clearly the comparables on the balance sheet side.

Figure 109: Our estimates are in line consensus

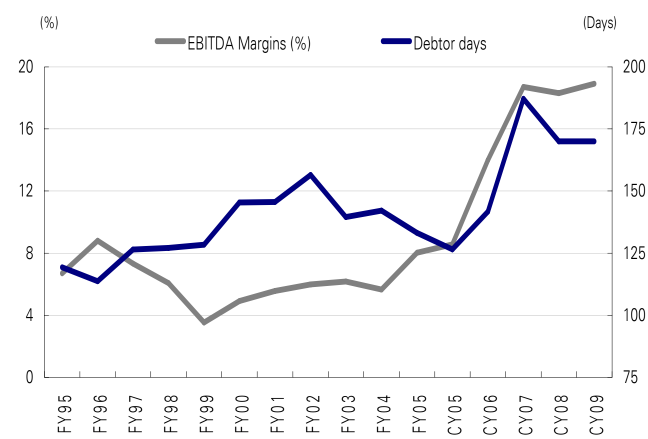
	CY 2008e			CY 2009e		
	DB	**Consensus**	**Diff (%)**	**DB**	**Consensus**	**Diff (%)**
Sales	24,961	26,545	(5.97)	30,916	35,056	(11.81)
EBITDA	4,531	4,336	4.50	5,796	5,686	1.92
EPS	56	55	2.02	65	68	(4.60)

Source: Deutsche Bank, Bloomberg

Are margins at the cost of debtor days?

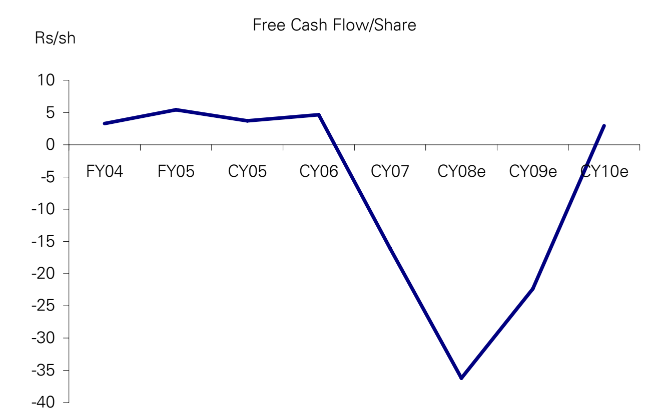
Areva's debtor days are 22% higher than those of ABB and 81% above Siemens'. This raises questions about the high margins reported by Areva (~544bps higher than at ABB and 962bps higher than at Siemens). The company may need to refocus on shortening its customers' payment cycles – which may take some time, given the historical resistance to change in India.

Figure 110: Debtor days hitting new highs



Source: Deutsche Bank, Company

Figure 111: Free cash flow a constraint

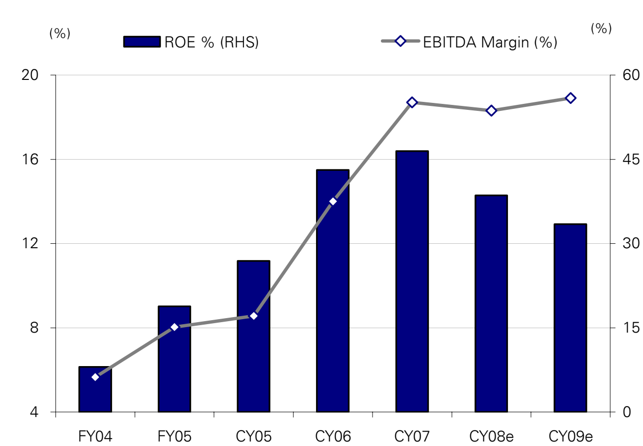


Source: Deutsche Bank, Company

Capex likely to be funded out of debt

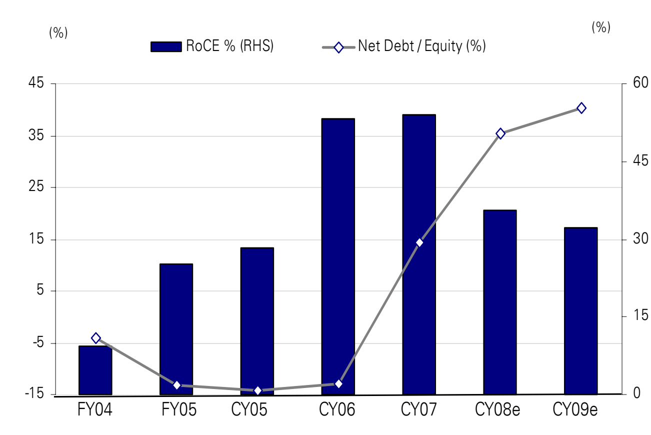
With low levels of internal accruals, we believe most of the capex will be funded by debt. Clearly, this would bring down the RoE and RoCE.

Figure 112: ROE tapering down



Source: Deutsche Bank, Company

Figure 113: Net debt /equity (%) increasing



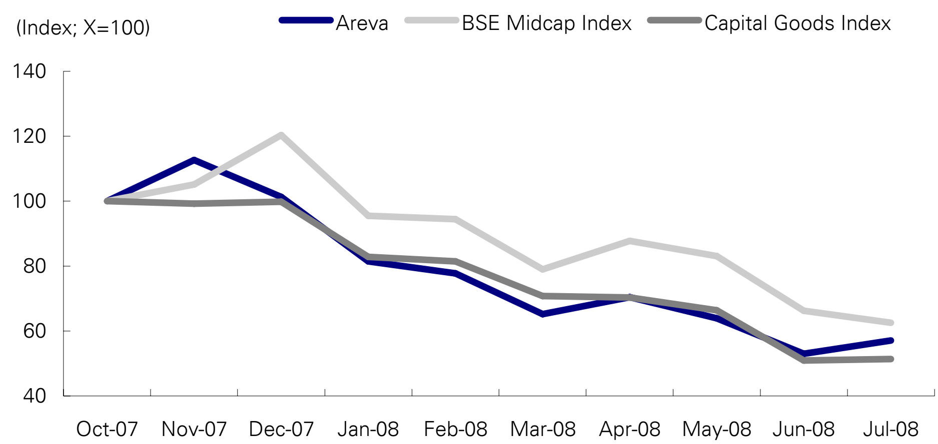
Source: Deutsche Bank, Company

Valuations

Despite weak financials, stock has moved in line with the market

Areva India's stock has moved in tandem with both the midcap and capital goods indices. Despite weak financials, we believe the latest spurt seen in the stock price is in anticipation of Areva India being a likely beneficiary of capex spends if a nuclear agreement is signed with the United States.

Figure 114: Performance of Areva vs. Mid cap Index and Capital Goods Index

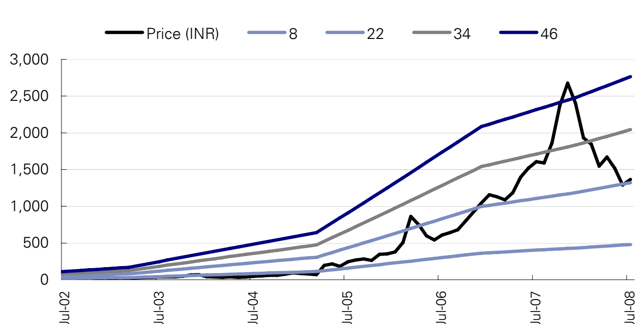


Source: Deutsche Bank, Bloomberg

Trading bands

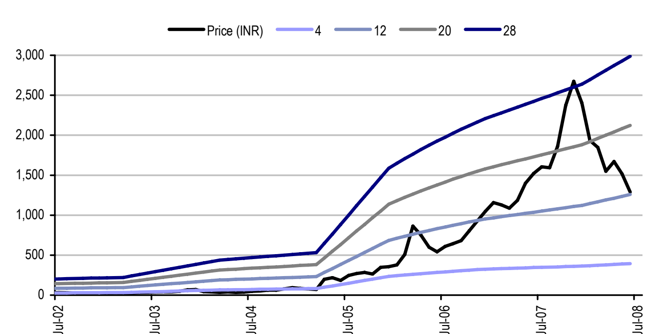
Areva has traded in the range of 8x-46x over the last three years as the company's earnings grew by at a CAGR of 144% from CY05-CY07. The stock has corrected significantly over the last 8-9 months and currently trades at a forward PER of 25x and EV/EBITDA of 14x.

Figure 115: One-year fwd PE band



Source: Deutsche Bank, Bloomberg

Figure 116: One-year fwd EV/EBITDA band



Source: Deutsche Bank, Bloomberg

Stock is trading at a higher valuation than its peers

A comparative valuation shows that Areva is expensive vis-à-vis its regional peers on a PER basis. This is despite an EPS CAGR of 23%, which is much lower than its peers.

Figure 117: Comparative valuation

	17- Jul 08	PE(x)		ROE (%)		EBITDA Margin (%)		EPS CAGR
	Price	2009e	2010e	2009e	2010e	2009e	2010e	2008-11e
Companies - Rated								
ABB Ltd India #	875	26	19	37	38	15	15	33
Bharat Heavy Electricals	1,461	20	14	32	36	21	22	37
Siemens India Ltd ##	472	21	15	35	39	10	10	
Larsen & Toubro Ltd	2,443	23	17	25	28	15	16	
Areva T&D India Ltd #	1,438	27	22	39	33	18	19	20
Average of Rated Companies		23	18	34	35	16	17	

Source: Deutsche Bank, Bloomberg, Note: # Dec year ending, ##- Sep year ending, Dec 08= Mar 09 = Sep 09- Pls note all the above mentioned companies are rated

Average of P/E and DCF approach gives value of INR1000/sh

We have arrived at the assessed value of the company based on the average of two methods:

P/E approach gives a value of INR970/sh

Our P/E methodology assumes a PE multiple of 15x (~20% discount to ABB). This is at a 20% discount to its MNC peer ABB and in line with its peers in the region. This looks reasonable as a) the multiple of 15x one-year forward EPS CAGR of 20% implies a PEG of less than 1, and b) the discount to ABB is driven by: i) ABB's higher CY09e RoE of 40% compared to Areva's 35%; ii) ABB's market leadership in India in the T&D space; and iii) ABB's superior working capital cycle.

DCF methodology gives a value of INR1015/sh

Our DCF methodology uses CoE of 14% at a risk-free rate of 8.2% (in line with DB's estimate), 4.7% risk premium (in line with DB's estimate), and beta of 1.3 (based on three-year weekly stock prices from Bloomberg) and terminal free cash flow growth of 3%.

Sensitivity and risk analysis

Sensitivity analysis

Company-specific risks

We have performed a sensitivity analysis of our earnings models on the following key parameters:

- Revenue realization: If the revenue realized by the company is +/-10% versus our estimate, then the EPS changes by +/-23% in CY08e and +/-25% in CY09e.
- Raw material expenses: If the raw material expenses as a percentage of sales increases/ decrease by 100bps versus our estimate, the earnings would decrease/increase by 6% in CY08e and CY09e.
- If working capital cycle time decreases / increases by 10 days then free cash flow changes by 132bps.

Figure 118: Sensitivity analysis

	CY08e				CY09e			
	Sales	EBITDA	PAT	FCF/yield*	Sales	EBITDA	PAT	FCF/yield*
Base Case estimates (INR bn)	24742	4531	2660	-3.4%	30640	5796	3085	-2.1%
Sensitivity to Revenues								
10% higher than our estimates	27216	5452	3268	-3.3%	33704	6942	3841	-1.1%
Change (%)-vis-à-vis base case estimates	10	20	23	4	10	20	25	96
10% lower than our estimates	22268	3610	2052	-3.4%	27576	4650	2328	-3.0%
Change (%)-vis-à-vis base case estimates	(10)	(20)	(23)	(4)	(10)	(20)	(25)	(96)
Sensitivity to EBITDA margin								
100bps higher than our estimates	24742	4779	2823	-3.0%	30640	6102	3287	-1.7%
Change (%)-vis-à-vis base case estimates	0	5	6	32	0	5	7	39
100bps lower than our estimates	24742	4284	2497	-3.7%	30640	5489	2882	-2.5%
Change (%)-vis-à-vis base case estimates	0	(5)	(6)	(32)	0	(5)	(7)	(39)
Working Capital cycle								
10 days lower than our estimates	24742	4531	2660	-2.0%	30640	5796	3085	-1.8%
Change (%)-vis-à-vis base case estimates	0	0	0	132	0	0	0	31
10 days higher than our estimates	24742	4531	2660	-4.7%	30640	5796	3085	-2.4%
Change (%)-vis-à-vis base case estimates	0	0	0	(132)	0	0	0	(31)

*Source: Deutsche Bank, * Change in FCF/Yield is in bps*

Industry-wide risks and macro risks

The key risks from the industry and macro environment include:

- Delays in funding for generation/T&D projects: If the projects are unable to get requisite financing, there would be a slowdown in orders for Areva. If the government is not aggressive or is short of funds to implement the XIth plan target, this would directly impact order inflows for companies in the T&D space.
- Increasing competition: With many local players increasing capacity and foreign companies focusing on India as one of their core markets, competition looks set to intensify. This could lead to price cuts, which would affect margins.
- Lack of available manpower: the company faces the challenge of acquiring, retaining and mobilizing talent and manpower effectively, not only to manage its current business but also for its future growth aspirations. Also, given the expected increase in competition in this sector, we expect that the shortage of manpower will become acute.

Company background

Globally one of the largest T &D players

Areva T&D India, a subsidiary of Areva T&D SA, France, was incorporated in 1957. Areva T&D India Limited is the new name of Alstom Limited and was formed in the latter part of 2005 following the take over of Alstom Global by Areva. In the latter part of CY06, Areva hived off its non-T&D business to Alstom Energy for INR414mn. The products in this segment include motors, drives and industrial fans. Areva decided to hive off this relatively low margin business in order to focus exclusively on T&D. Currently, the promoters hold more than a 72% stake in the company.

The company is engaged in power transmission & distribution (T&D) and manufacturing of other industrial equipment. Areva's T&D business is split into four key segments:

a) The products segment manufactures switchgear, transformers, measurement & control.

b) The systems segment undertakes T&D projects, mainly in the area of steam and industrial power plant.

c) The automation segment manufactures automation products like relays and protection systems, and provides automation support services.

d) The service division provides after-sales service, network consulting etc.

The company is also active in the railway sector by manufacturing signaling products, interlocking equipment and executing major projects for Indian Railways.

Presently, the company has an order book of INR27bn and order inflows for CY07 were worth INR29bn. Some of the key large ticket orders won by Areva are shown in Figure 119.

Figure 119: Recent large ticket orders won

Project details	Amt in INR bn
Kahrama water and electricity, Qatar - Turnkey substations for their distribution network]	7.0
Essar Construction Limited	4.2
MPPTCL Power transformers	1.5
Power Grid Substation in Bihar	1.4
UP Rajya Vidyut Utpadan Nigam Ltd , 400/220 kV turnkey switchyard with transformers	1.3
Reliance Energy Transformers, High Voltage switchgear for Hissar & Rosa	1.2
Turnkey substations, Kenya To build GIS turnkey substations in Qatar	1.0
NTPC Building turnkey substations at Dadri, Korba & Farakka	0.8
NPC Bhavini 220 kV turnkey GIS substation	0.7
Essar Steel Substation at Hazira.	0.7

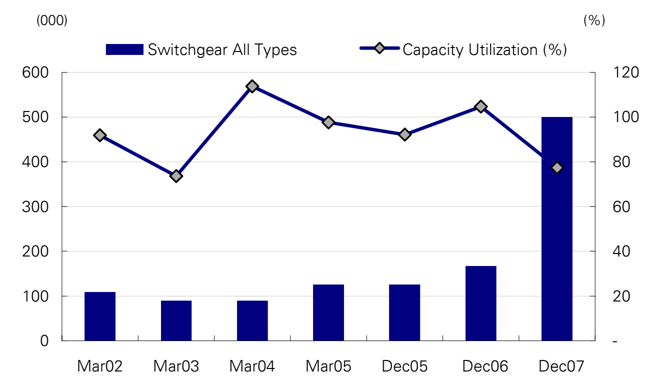
Source: Company

Capacity expansion underway

Areva currently has eight manufacturing facilities located in West Bengal, Gujarat, Tamil Nadu, Karnataka, Pondicherry and New Delhi. The company has a comprehensive distribution network with marketing offices situated all over India. It uses hi-tech manufacturing infrastructure by using advanced engineering simulation systems.

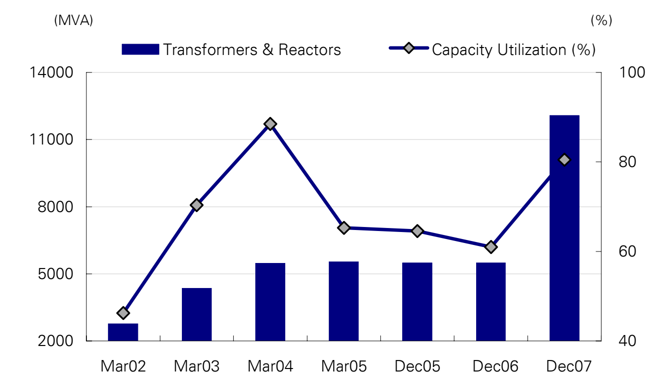
The company has reorganized the factory layout in the existing manufacturing plants and has upgraded manufacturing processes resulting in an increase of production capacity of transformers and reactors by ~65% yoy and switchgear capacity by 200% yoy. Despite aggressive capacity expansion, utilization remains high.

Figure 120: Switchgear of all types



Source: Company

Figure 121: Transformers and reactors



Source: Company

Areva is further expanding by adding three new facilities in Vadodara, Hosur and Padappai with a total investment of INR7bn:

- The Vadodara plant is to manufacture power transformers of capacity up to 765 kV -1200 kV
- The Hosur plant is to manufacture instrument transformers of capacity up to 765 kV – 1200 kV and will also be the R&D centre for the instrument transformer product line
- The Padappai plant is to manufacture circuit breakers of capacity up to 765 kV – 1200 kV

Shareholding pattern

Areva is an illiquid stock with a free float of ~28% as promoters hold ~72%. The shareholding pattern indicates interest from local institutions while FIIs have been exiting the stock over the last two quarters.

Figure 122: Interest seen by local institutions

	Q4CY06	Q1CY07	Q2CY07	Q3CY07	Q4CY07	Q1CY08	Remarks
Promoters	66.7	66.7	66.7	72.2	72.2	72.2	Increased stake
Mutual Funds	7.1	7.1	6.8	4.8	4.9	5.4	Showing an increasing trend
Banks, FIs,	7.6	7.4	7.1	5.8	6.0	6.1	Showing an increasing trend
FIIs	0.7	1.8	1.9	2.3	2.2	1.8	Declining trend
Public	18.0	17.1	17.5	14.9	14.7	14.5	Continual declining
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	
No of Shares	39.89	39.89	39.89	47.82	47.82	47.82	

Source: Company

Management

Areva T&D India Limited has eight directors on its Board, of which three are independent.

Figure 123: Board of Directors

Sr.No.	Name of Personnel	Designation
1	S K Poddar	Chairman (Non-executive)
2	Rathindra Nath Basu	Managing Director
3	Michel Augonnet	Director Non-executive
4	M V Dhekne	Director Independent
5	C M A Nayar	Director Independent
6	Arthur De Montalembert	Director Non-executive
7	Karim Vissandjee	Director Non-executive
8	Subir Raha	Director Independent

Source Company

Workforce addition also continues at a brisk pace

Areva T&D has been adding workforce at a brisk pace. At the end of 2007 the company had 3,500 employees (up by 25% over CY05). The company is committed to increasing its workforce as new manufacturing capacities come online.

Asia India
Industrials Manufacturing

18 July 2008

BHEL

Reuters: **BHEL.BO**

Good only on relative basis; downgrade to Hold

Relatively good, but downgrade to Hold

We downgrade BHEL to Hold due to the following: (1) We are entering a down-cycle and the best of the order inflow momentum is now behind us; (2) While a healthy order book encourages medium-term earnings, we note that supply bottlenecks could result in risks to earnings from contractual damages; (3) Additionally, a lengthening of the working capital cycle could depress RoE. With a 10% YTD underperformance compared to the Sensex, most of the pain is in the price. Hold with a TP of INR 1335 (-9% downside).

Order inflow growth likely to decelerate sharply

Our bottom-up analysis reveals that even in the best case scenario, total new orders would be ~39.6GW between Q2FY09 to FY11, implying a 38% drop over the last three years. In a more realistic scenario, new orders may drop by ~51%.

Quality of earnings matters more than EPS growth

As mentioned in our sector note, industrial earnings taper off well after recession begins. In BHEL's case, our estimates factor in 38% CAGR growth. This assumes a 40% hike in salaries from the Sixth Pay Commission report and rising contractual damages. However, the working capital cycle is expected to reverse.

TP lowered to INR 1335; downgrade to Hold

Our TP is based on average of 14.5x PER FY10e (v/s PER 26x FY09e previously) and 8.5xEV/EBITDA FY10e. The multiples are in-line with BHEL's forward trading multiple during the previous down-cycle of FY97-99. Key downside risks are volatility in earnings, delays in the ramp-up of the manufacturing facility, and a further rise in input prices. Upside risk stems from the government pump priming the economy (see Valuation on p. 91 and Sensitivity on p. 92)

Forecasts and ratios

Year End Mar 31	2006A	2007A	2008E	2009E	2010E
Sales (INRm)	133,740.4	172,375.0	**193,655.0**	250,575.2	323,812.4
EBITDA (INRm)	25,590.9	35,767.1	**38,900.0**	51,958.0	72,785.1
Reported NPAT (INRm)	16,792.2	24,146.7	**26,073.0**	36,433.8	49,557.2
DB EPS FD(INR)	34.30	49.33	**53.26**	74.43	101.24
OLD DB EPS FD(INR)	34.30	49.33	**53.26**	77.25	104.63
% Change	0.0%	0.0%	**0.0%**	-3.7%	-3.2%
DB EPS growth (%)	82.5	43.8	**8.0**	39.7	36.0
PER (x)	18.4	22.9	**27.4**	19.6	14.4
EV/EBITDA (x)	10.7	13.9	**17.3**	13.1	9.6
DPS (net) (INR)	7.25	12.25	**20.00**	30.00	37.00

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

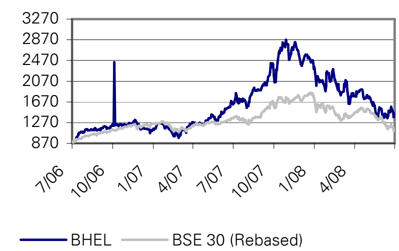
Hold

Price at 17 Jul 2008 (INR)	**1,461.00**
Price target - 12mth (INR)	**1,335.00**
52-week range (INR)	**2,873.85 - 1,355.30**
BSE 30	**12,576**

Key changes

Rating	Buy to Hold ↓	
Price target	2,000.00 to 1,335.00 ↓	**-33.2%**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-5.6*	*-18.6*	*-10.5*
BSE 30	*-19.9*	*-23.7*	*-17.8*

Stock data

Market cap (INRm)	**715,189**
Market cap (USDm)	**16,603**
Shares outstanding (m)	**489.5**
Major shareholders	**GOI (68%)**
Free float (%)	**33**
Avg daily value traded (USDm)	**78.8**

Key indicators (FY1)

ROE (%)	**27.0**
Net debt/equity (%)	**-40.4**
Book value/share (INR)	**214.54**
Price/book (x)	**6.8**
Net interest cover (x)	**101.5**
Operating profit margin (%)	**18.6**

Infrastructure Research Team

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Model updated:08 July 2008

Running the numbers

Asia

India

Manufacturing

BHEL

Reuters: BHEL.BO Bloomberg: BHEL IN

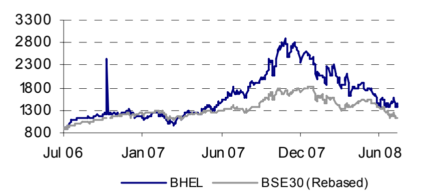
Hold

Price (17 Jul 08)	INR 1,461.00
Target price	INR 1,335.00
52-week Range	INR 1,355.30 - 2,873.85
Market Cap (m)	INRm 715,189 USDm 16,603

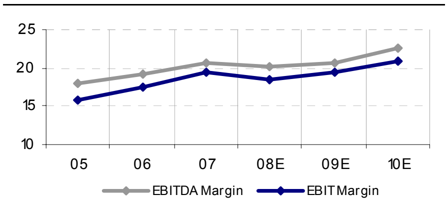
Company Profile

Bharat Heavy Electricals Limited (BHEL) manufactures power plant equipment. The Company's products include gas turbines, generators, thermal sets, diesel shunters, turbo sets, hydro sets, power transformers, switch gears, circuit breakers and boilers. BHEL also manufactures compressors, valves, rectifiers, pumps, capacitors, oil rigs, drive turbines, as well as castings and forgings.

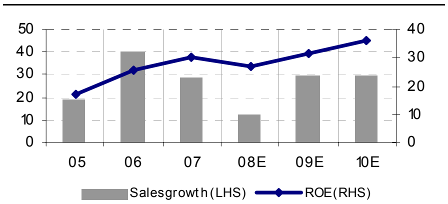
Price Performance



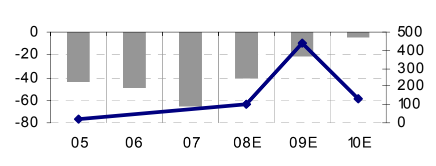
Margin Trends



Growth & Profitability



Solvency



Manish Saxena
+91 22 6658 4034 manish.saxena@db.com

Fiscal year end 31-Mar	2005	2006	2007	2008E	2009E	2010E
Financial Summary						
DB EPS (INR)	18.80	34.30	49.33	53.26	74.43	101.24
Reported EPS (INR)	18.80	34.30	49.33	53.26	74.43	101.24
DPS (INR)	4.54	7.25	12.25	20.00	30.00	37.00
BVPS (INR)	119.3	149.2	179.5	214.5	253.9	311.8
Weighted average shares (m)	490	490	490	490	490	490
Average market cap (INRm)	158,649	308,808	553,315	715,189	715,189	715,189
Enterprise value (INRm)	132,388	272,968	496,037	671,668	682,404	696,252
Valuation Metrics						
P/E (DB) (x)	17.2	18.4	22.9	27.4	19.6	14.4
P/E (Reported) (x)	17.2	18.4	22.9	27.4	19.6	14.4
P/BV (x)	3.22	7.53	6.30	6.81	5.76	4.69
FCF Yield (%)	7.6	4.0	5.4	nm	0.9	1.0
Dividend Yield (%)	1.4	1.1	1.1	1.4	2.1	2.5
EV/Sales (x)	1.4	2.0	2.9	3.5	2.7	2.2
EV/EBITDA (x)	7.7	10.7	13.9	17.3	13.1	9.6
EV/EBIT (x)	8.8	11.6	14.9	18.7	14.0	10.3
Income Statement (INRm)						
Sales revenue	**95,271**	**133,740**	**172,375**	**193,655**	**250,575**	**323,812**
Gross profit	**41,810**	**53,845**	**69,778**	**87,033**	**107,246**	**137,944**
EBITDA	**17,244**	**25,591**	**35,767**	**38,900**	**51,958**	**72,785**
Depreciation	2,189	2,095	2,446	2,972	3,383	4,883
Amortisation	0	0	0	0	0	0
EBIT	**15,056**	**23,496**	**33,321**	**35,928**	**48,575**	**67,903**
Net interest income(expense)	-814	1,016	2,748	-354	-110	-500
Associates/affiliates	0	0	0	0	0	0
Exceptionals/extraordinaries	0	0	0	0	0	0
Other pre-tax income/(expense)	2,176	1,133	1,291	6,210	7,159	8,257
Profit before tax	**16,418**	**25,644**	**37,360**	**41,784**	**55,624**	**75,660**
Income tax expense	7,216	8,852	13,214	15,711	19,190	26,103
Minorities	0	0	0	0	0	0
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	**9,202**	**16,792**	**24,147**	**26,073**	**36,434**	**49,557**
DB adjustments (including dilution)	0	0	0	0	0	0
DB Net profit	**9,202**	**16,792**	**24,147**	**26,073**	**36,434**	**49,557**
Cash Flow (INRm)						
Cash flow from operations	**13,305**	**15,816**	**33,824**	**5,350**	**26,445**	**22,343**
Net Capex	-1,237	-3,476	-3,690	-7,653	-20,000	-15,000
Free cash flow	**12,068**	**12,340**	**30,134**	**-2,302**	**6,445**	**7,343**
Equity raised/(bought back)	0	1,200	0	0	0	0
Dividends paid	-2,224	-4,047	-6,925	-11,455	-17,182	-21,191
Net inc/(dec) in borrowings	-1,000	1,689	-4,107	0	0	5,000
Other investing/financing cash flows	0	687	-2,353	-1,000	-5,000	-5,000
Net cash flow	**8,844**	**11,870**	**16,749**	**-14,757**	**-15,737**	**-13,848**
Change in working capital	*0*	*0*	*0*	*0*	*0*	*0*
Balance Sheet (INRm)						
Cash and other liquid assets	29,469	41,340	58,089	43,331	27,595	13,747
Tangible fixed assets	10,288	11,669	12,913	17,593	34,211	44,328
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	103	83	83	1,083	6,083	11,083
Other assets	74,445	128,705	161,892	200,712	259,992	335,394
Total assets	**114,305**	**181,796**	**232,977**	**262,720**	**327,881**	**404,552**
Interest bearing debt	3,311	5,582	893	893	893	5,893
Other liabilities	52,593	103,200	144,201	156,806	202,715	246,021
Total liabilities	**55,904**	**108,782**	**145,094**	**157,700**	**203,609**	**251,914**
Shareholders' equity	58,401	73,014	87,883	105,020	124,272	152,638
Minorities	0	0	0	0	0	0
Total shareholders' equity	**58,401**	**73,014**	**87,883**	**105,020**	**124,272**	**152,638**
Net debt	*-26,158*	*-35,757*	*-57,196*	*-42,438*	*-26,701*	*-7,853*
Key Company Metrics						
Sales growth (%)	18.8	40.4	28.9	12.3	29.4	29.2
DB EPS growth (%)	47.3	82.5	43.8	8.0	39.7	36.0
EBITDA Margin (%)	18.1	19.1	20.7	20.1	20.7	22.5
EBIT Margin (%)	15.8	17.6	19.3	18.6	19.4	21.0
Payout ratio (%)	24.2	21.1	24.8	37.5	40.3	36.5
ROE (%)	16.8	25.6	30.0	27.0	31.8	35.8
Capex/sales (%)	1.3	2.6	2.1	4.0	8.0	4.6
Capex/depreciation (x)	0.6	1.7	1.5	2.6	5.9	3.1
Net debt/equity (%)	-44.8	-49.0	-65.1	-40.4	-21.5	-5.1
Net interest cover (x)	18.5	nm	nm	101.5	441.6	135.8

Source: Company data, Deutsche Bank estimates

Investment thesis

We believe we are heading into a down-cycle

Due to our expectations of slowing order inflow momentum, we downgrade BHEL from Buy to Hold. Despite underperforming the sensex by 9% YTD, the stock is trading at a P/E of 19x FY09e and 14x FY10e. At these valuations, there is no near-term upside. Agreed on the positive side, book to bill ratio at 4x, the highest in its history, ensures wider spread of fixed cost, higher utilisation and accordingly a good earnings visibility even with a longer cycle time.

Cycle has turned, risk from capacity constraints, contractual obligations, wage hike provisions at higher than estimated levels and sharp 57% CAGR fall in FCF over FY07-10e

However, we believe that there are several negatives. (1) As detailed in our sector note, we believe that cycle has turned. Order inflow momentum would fall down big time. Our base case scenario assumes that order inflows in MW over Q2FY09-FY10e could fall by ~51% over the base of last three years. (2) BHEL faces a risk of contractual damages in case the company continues to take in orders at accelerated pace. The company could face bottlenecks from its vendors/ancillary units who have not been able to keep pace with capacity growth of BHEL. Additionally risk from higher-than-estimated payout for wage revision could impact earnings. 3) We agree our EPS numbers are higher than consensus – but these numbers now represent peak cycle earnings and do not reveal the extent of fall in FCF -ve 57% CAGR over FY07-10e. (4) BHEL has traded in a PE band of 14-16.5x during the start of previous down cycles.

Valuations should reflect down-cycle multiples

Our TP of INR 1335 is the average of the two methodologies. Our TP is based on average of 14.5x PER FY10e (v/s PER 26x FY09e previously) and 8.5xEV/EBITDA FY10e. The lower multiples are attributed to our belief that we are entering a down-cycle last seen in FY97-99. In the previous down-cycle, we saw net working capital (NWC) as a percent of sales rising from 19% to ~ 38% of sales. In this down-cycle, we estimate NWC to rise from 19% in FY07 to 32% of sales in FY10e. During the start of the last down-cycle, FY97-99, BHEL traded at 14-16.5x PER and 7-9x on EV/EBITDA basis. However since the RoE in this cycle is estimated to be 500-700 bps higher than those seen in the previous down-cycle, we have used a marginal 5% premium to the lower end of the trading band. Accordingly, based on 14.5xFY10e PE methodology, we estimate the target price at INR 1460/sh. Likewise using EV/EBITDA of 8.5x, we estimate the target price at INR 1210/sh giving us average of INR 1335/sh

Downside risk: rise in input prices; upside: govt influence

On the upside, the key risks stem from the government pump priming the economy. This could improve the investment environment and pricing. However, if BHEL continues to take orders at the same pace as that of last year, chances are that there could be risks from liquidated damages for delays in implementation. Other risks for BHEL are volatility in earnings, delays in the ramp-up of the manufacturing facility, and a further rise in input prices. Note that a 1% variance in operating costs would decrease or increase earnings by 4-5% over the forecast period.

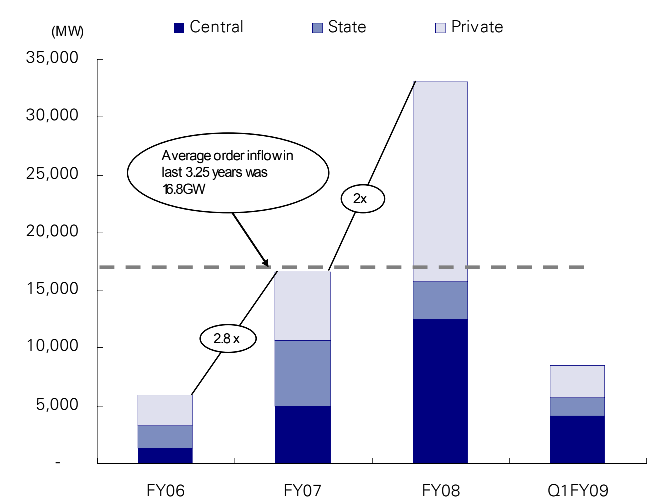
Order inflows likely to slow

Ordering likely to slow over the next 3-4 years

The private sector has driven order inflows with ~28.5GW vs. the central sector ordering of ~23GW

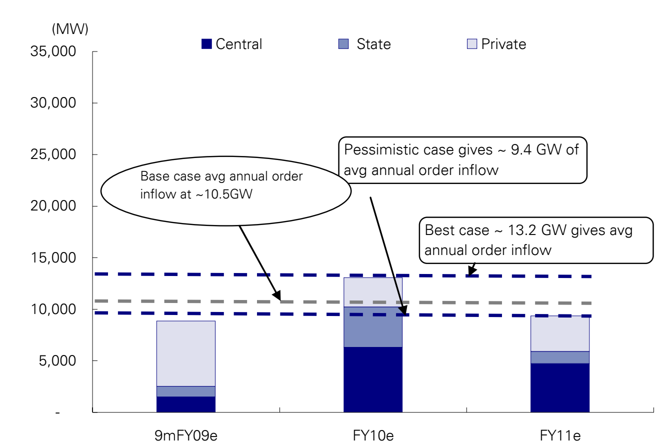
The biggest driver of new project orders has been the private sector. Over the last three years, the private sector has ordered power equipment comprising ~28.5GW of new capacity. Ordering from the central sector was surprisingly lower, at ~23GW. The state sector was the lowest contributor, ordering just ~12.5GW. Obviously, the private sector feels that the sector is set for a major turnaround, as India is in a huge power deficit and returns could be quite high. Most of the private developers are looking at arbitrage in coal and for superior project management skills.

Figure 124: Order inflows over past three years



Source: Deutsche Bank, Central Electricity Authority

Figure 125: Expected order inflows over next three years



Source: Deutsche Bank, Central Electricity Authority

Our analysis of the running rate of new capacity orders on a bottom-up basis suggests order inflow could fall by 38% in the best case scenario and by up to 58% in a pessimistic scenario.

Our analysis of the run rate of new capacity orders on a bottom-up basis suggests order inflows could fall by 38% in the best case scenario and by up to 58% in a pessimistic scenario. The actual result may be somewhere in between, and our estimates show that future orders will be about 51% lower than those seen over the last three years. The biggest risk to our calculation would be the availability of gas for new projects. We have extrapolated the policy decisions of the group of central ministers for the next five years. According to policy, the gas from new gas finds would have the following distribution order: fertilizer, captive power, city gas, and then remaining power plants. This order leaves little gas for new power plants.

Figures 126, and 127 illustrate likely ordering over the next four years

Figure 126: Sector wise ordering expected for the 11th plan period

Project name	FY09e	FY10e	FY11e	FY12e
Central	1,512	6,320	4,740	4,711
State	1,005	3,900	1,180	1,035
Private	6,352	2,843	3,450	2,911
Total	**8,869**	**13,063**	**9,370**	**8,657**

Source: Deutsche Bank, CEA

Figure 127: Fuel wise break-up of ordering over the 11th plan period

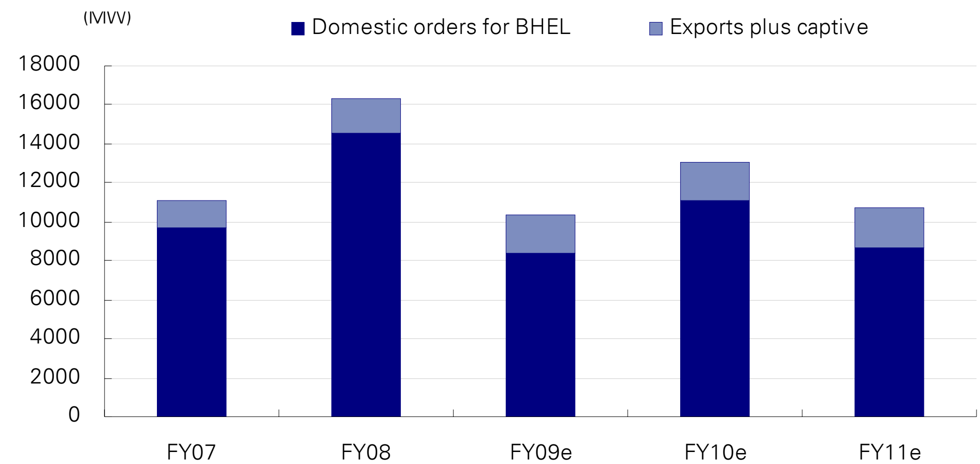
Project name	FY09e	FY10e	FY11e	FY12e
Coal	6,832	12,313	4,860	5,620
Gas	970	250	1,550	1,810
Hydro	1,067	500	2,960	1,227
Total	**8,869**	**13,063**	**9,370**	**8,657**

Source: Deutsche Bank, CEA

Average annual order inflow is estimated at 11.4GW for Q2FY09-11e

Accordingly, we expect BHEL's order inflow to slow. While order inflow was 16.3GW for FY08, we expect an inflow of only 11.4GW p.a. from Q2FY09-11e.

Figure 128: Potential order inflow for BHEL



Source: Deutsche Bank, Company

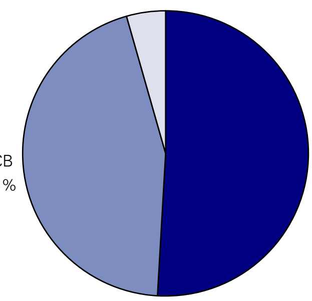
Can BHEL meet expectations?

BHEL has an advantageous mix of orders in its order book

84% of projects under construction are for main plant, while 50% are through negotiated routes

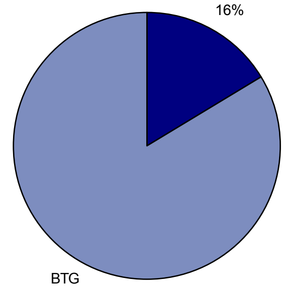
In the utility generation space (excluding captive and industry), an aggregate of 79 projects with a total capacity of 34GW are under construction. If we were to take a close look at these projects, we would find BHEL's risk to be quite low. 84% of the orders BHEL has taken are main plant orders. In addition, a whopping 50% of orders are through negotiated routes - quite good, as contractual terms for damages in negotiated orders are quite low.

Figure 129: Order book analysis - Bid type



Source: Deutsche Bank, Central Electricity Authority

Figure 130: Order book analysis



Source: Deutsche Bank, Central Electricity Authority

BHEL has been able to raise prices for end products

A 0.6% jump in costing is nothing significant compared to a 10-15% jump in prices contracted by BHEL over the last year.

Despite spiralling steel prices (~50%) during the last year, the impact of this on BHEL will not be significant. First, for the size of BHEL's projects (order size of INR 25-28 mn/MW), steel cost is about 3mn/MW, i.e. about 1.2% of the total cost of USD 1000/t. Historically, steel costs have constituted about 0.6% of total costs.

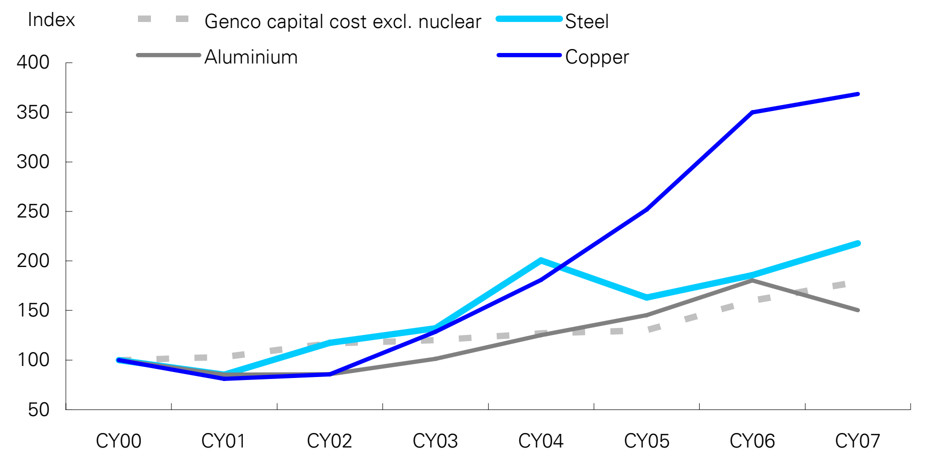
Figure 131: Typical quantity for 2 x 500 MW units as given by BHEL

in Metric Tonnes (MT)	MT
Boiler	40,173
LP piping	5,365
HP critical/PC piping	2,118
Electrostatic Precipitator	15,880
Main and Aux. Buildings	44,580
Power Transformers (CRGO)	1,328
Motors	725
Switchyard	1,550
Coal Handling Plant	14,000
Turbine/Gen./Condenser	4,074
Pumps/Heat Exchangers/ Drive- Turbines and Pulverisers	808
Total	**130,601**

Source: Deutsche Bank

At first glance, a 0.6% jump in total cost is nothing significant compared to the 10-15% jump in prices contracted by BHEL over the last year.

Figure 132: Rising Genco costs



Source: Deutsche Bank, Bloomberg, HIS / CERA

Along with rising sales, a distribution of overhead can drive up margins in the medium term.

Our concerns are clearly in BOP supplies

Of the order pipeline of 34GW, ~47% of them face various execution issues.

Of the total order pipeline (consisting of 34GW), ~47% of the projects (i.e. 16GW) face various issues with execution, due to the risk of delays. Out of this 16GW, there are 13 projects (with a total capacity of ~7GW) which have multiple issues. We see no respite in the short term, as there are serious concerns with respect to the availability of balance of plant, given the acute shortage of suppliers and skilled manpower, as well as infrastructure issues in moving equipment and getting numerous government clearances. As both the cost of financing and input cost have gone up substantially, overall project costs are going up.

Figure 133: Key reasons for capacity delays

	No of Projects	Capacity (MW)
Capacities which are nearing completion	6	1,482
Capacities for which implementation issues are still to be identified	37	13,365
Capacities which were recently awarded (last 6 months)	3	3,300
Total projects with no issues currently (a)	**46**	**18,147**
Capacities where there is a delay on the part of BHEL	13	5,110
Capacities where the balance of plant equipment ordering has yet to be placed - either by the EPC contractor / developer	18	12,030
Capacities where the supply of balance of plant equipment is delayed	6	1,785
Other issues, such as manpower deployment, fuel supply etc.	9	4,125
Less: Capacities held up due to combination of above issues	*13*	*7,117*
Total projects delayed due to various issues (b)	**33**	**15,933**
Total Capacities under construction (a + b)	**79**	**34,080**

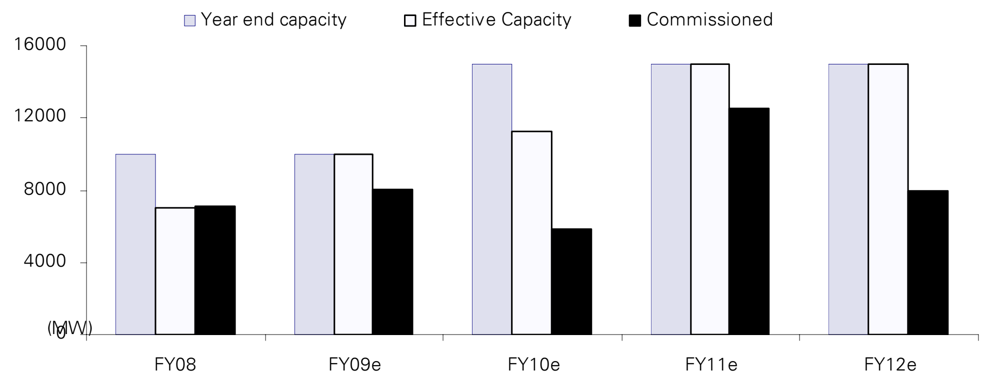
Source: Deutsche Bank

Possible impaired utilisation for main plants

In a recent interview BHEL CMD Mr. K. Ravi Kumar told that BHEL will have effective available capacity of 56,000 MW in the Eleventh Five-Year Plan (FY07-12).

In a recent interview BHEL CMD Mr. K. Ravi Kumar said that BHEL will have an effective available capacity of 56,000 MW in the Eleventh Five-Year Plan (FY07-12). Note that BHEL has enhanced its capacity from 6,000 MW a year to 10,000 MW a year as of Jan 1 2008. This capacity is planned to rise to 15,000 MW a year by Dec-09. As a result, BHEL should be able to manufacture power generation equipment worth 56,000 MW in the Eleventh Five-Year Plan. However, our bottom up analysis shows that actual commissioning during the current plan period will only be 39,540MW (5460MW commissioned, plus 34,080MW under construction)

Figure 134: Manufacturing capacity may be unable to drive implementation

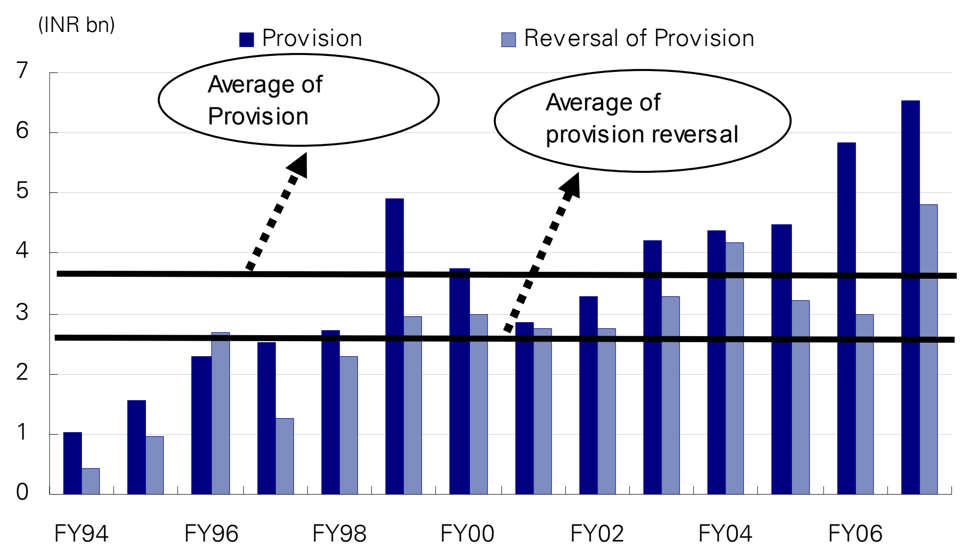


Source: Deutsche Bank

Risk for rising liquidated damages

If we were to examine long periods of time, then we would find that the provisions provided for and written off have a minor difference. We estimate INR 7bn for FY09e and INR 8.8bn for FY10e as the provision towards contractual obligations.

Figure 135: Provisions could rise sharply

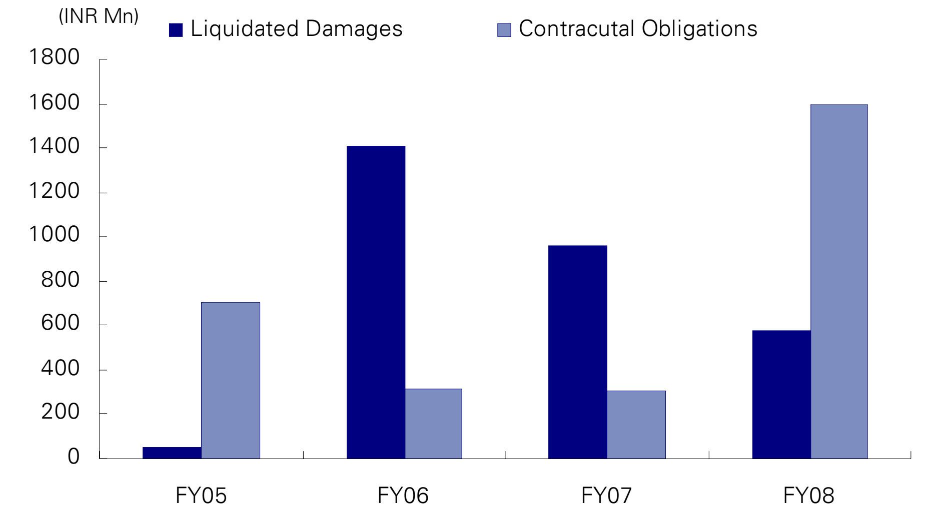


Source: Deutsche Bank, company

If the company continues to take on large orders there could be a risk in estimates, especially in the form of liquidated damages.

This seems reasonable, but if the company continues to take on large orders, there could be a risk in estimates especially in the form of liquidated damages.

Figure 136: Contractual obligations on the rise

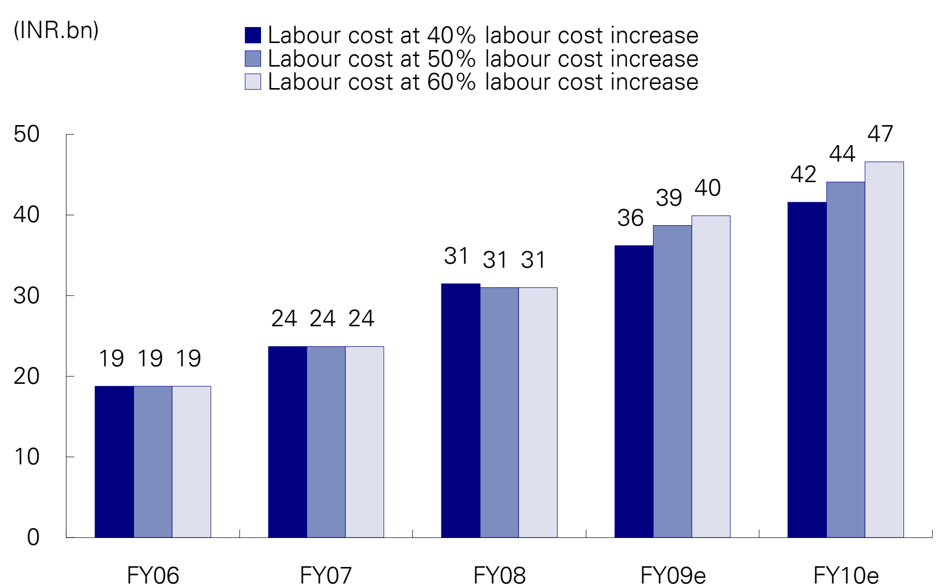


Source: Deutsche Bank, Company

And there is a possibility of further increase in provisions

Our assumptions include labour costs increasing due to a 40% hike given to employees based on the recommendation of the Sixth Pay Commission. The agreement between the employees and BHEL is for an additional 50% of provisions for FY09e and FY10e will be 2.5 bn. However, if the wage hike were to rise to 60%, additional provisions for FY09e and FY10e would be INR 3.8bn and 5.0bn, respectively.

Figure 137: Rising labour costs



Source: Deutsche Bank, Company

Worries on quality of earnings

Key assumptions and forecasts

Our key assumptions for the company are mentioned in Figure 138. Our new estimates factor in cycle time of about one year higher than that of projects completed in FY08e.

Figure 138: Change in assumptions and forecasts

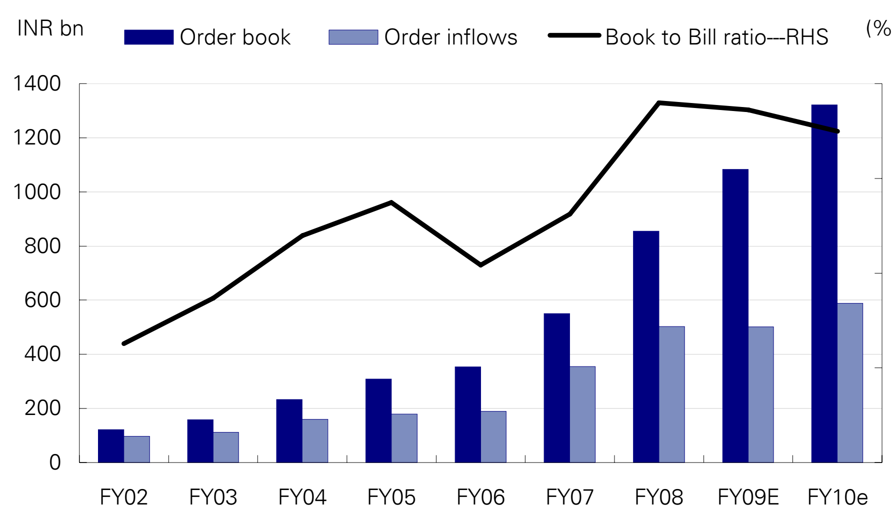
Year End March	------------------FY09e	--------------------		---------------- FY10e	----------------	
INR bn	Old	New	Change (%)	Old	New	Change (%)
Order inflow	547	501	(8)	558	588	5
Order backlog	1125	1083	(4)	1325	1322	(0)
Gross Sales	278	274	(2)	361	354	(2)
Expenditure						
Raw Material	127	123	(3)	165	159	(4)
Salaries & Wages	35	36	5	40	42	5
Net Provisions	7	6	(14)	10	9	(10)
Key Ratios (%)						
EBITDA Margin #	20.7	20.3	(43)	22.2	22.0	(20)
EPS(INR)	77.3	74.4	(4	104.6	101.2	(3)

Source: Deutsche Bank

Despite an order slowdown, the book-to-bill ratio could continue to remain at a historically high level

Despite a slowdown in order inflows, the book-to-bill ratio could remain at a historically high level above 4 - 4.3x. This is partly due to a lower pace of revenue recognition.

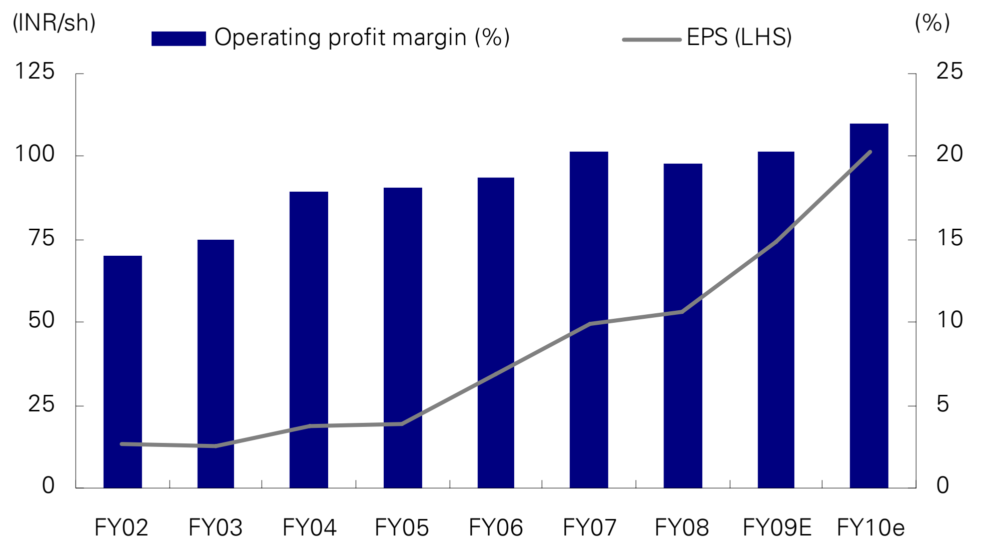
Figure 139: Book-to-bill ratio to remain at historic highs



Source: Deutsche Bank, Company

Despite a lower amount of revenue recognition and higher costs, better pricing for about 70% of sales could lead to margin expansion of 240bps from FY08 to FY10e.

Figure 140: Margins likely to improve over the forecast period



Source: Deutsche Bank, company

Revenue forecasts are in line with the Street, but EPS is above consensus by 5.5%.

The Street is possibly underestimating the effect of operating leverage

Though revenue forecasts are in line with the Street, EPS is above consensus by 5.5%. One possible explanation could be that the Street is underestimating the effect of operating leverage.

Figure 141: DB estimates vs. consensus

	------------------FY09e	--------------------		---------------- FY10e	----------------	
	Consensus	DB estimate	Change (%)	Consensus	DB estimate	Change (%)
Revenues (INR bn)	256	257	0.3	334	331	(0.9)
EBITDA (INR bn)	43	52	19.5	62	73	16.7
EPS(INR)	71	74	5.5	96	101	5.5

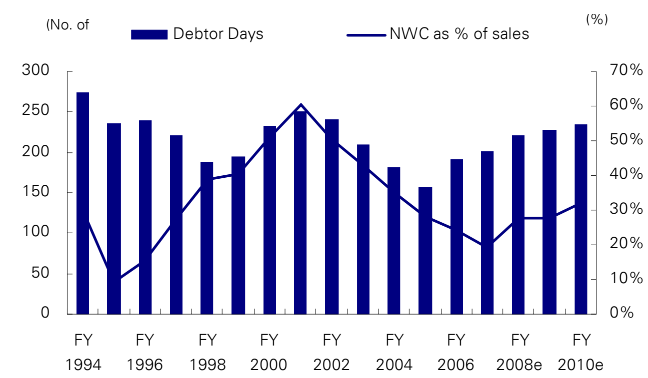
Source: Deutsche Bank, Bloomberg

The quality of earnings could deteriorate

As mentioned in our sector note[1], industrial earnings taper well after recession begins In BHEL's case, our estimates factor in 38% CAGR growth. However we are more concerned with the quality of the earnings. Net working capital as a percent of sales is expected to reverse and increase to +30% levels.

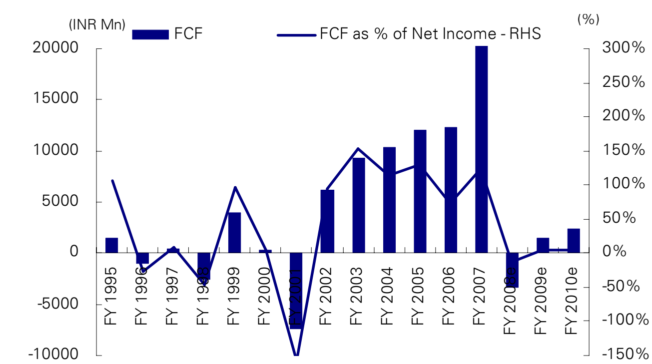
[1] Refer our note on Indian Infrastructure "Don't wait till the music stops" dated 18th July, 2008.

Figure 142: Rising debtor days and net working capital



Source: Deutsche Bank, Company

Figure 143: Sharp drop in free cash flow generation



Source: Deutsche Bank, Company

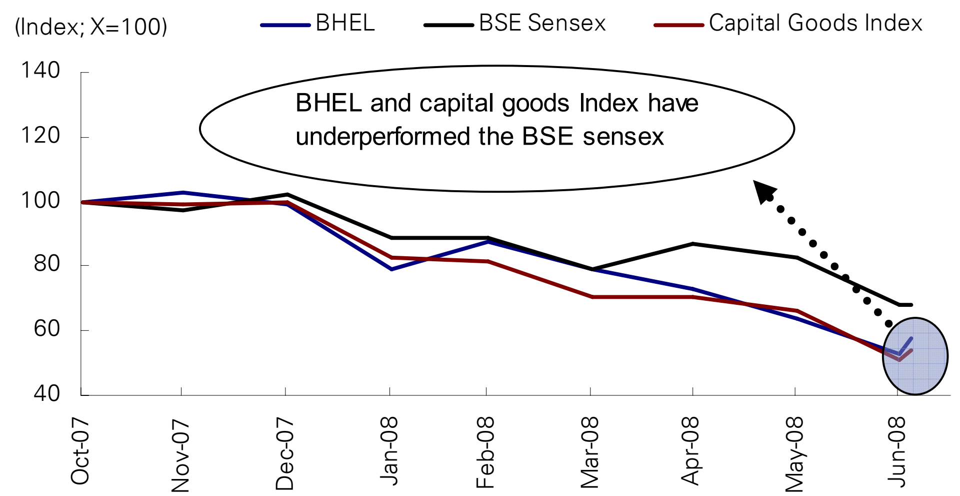
TP cut on cyclical reversal

Stock has under-performed BSE Sensex

BHEL's stock 52% off peak; Sensex off 40%.

BHEL's stock price has fallen 52% off its peak, compared to a 40% drop in the Sensex. This drop is based primarily on worries of implementation and the risk of commodity price rises affecting BHEL's profits.

Figure 144: BHEL has underperformed the Index

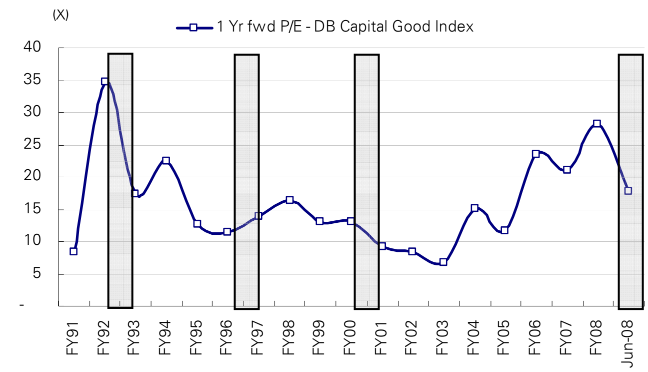


Source: Deutsche Bank, Bloomberg

Despite the fall, valuations are at a cyclical peak

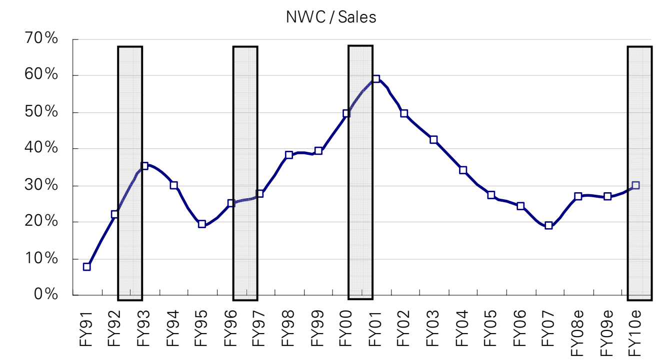
Despite the sharp fall-off, one-year forward P/Es for Indian Industrials (proxy of BHEL) are higher than those seen at the beginning of the downtrends in FY00 and FY97. FY92-93 was also a period of de-licensing and potential long-term advantages for capital good companies. Hence a comparison with that time may not be appropriate. Figure 146 shows that net working capital as a percentage of sales is a good proxy for cycles. We find net working capital (as a percent of sales) rising during down-cycles and falling during up-cycles. A look at Figure 146 shows that this has already started as NWC as a percent of sales has risen from 20% to 28%.

Figure 145: Industrial PE still at a cyclical high….



Source: Deutsche Bank

Figure 146: …..based on NWC as a proxy



Source: Deutsche Bank

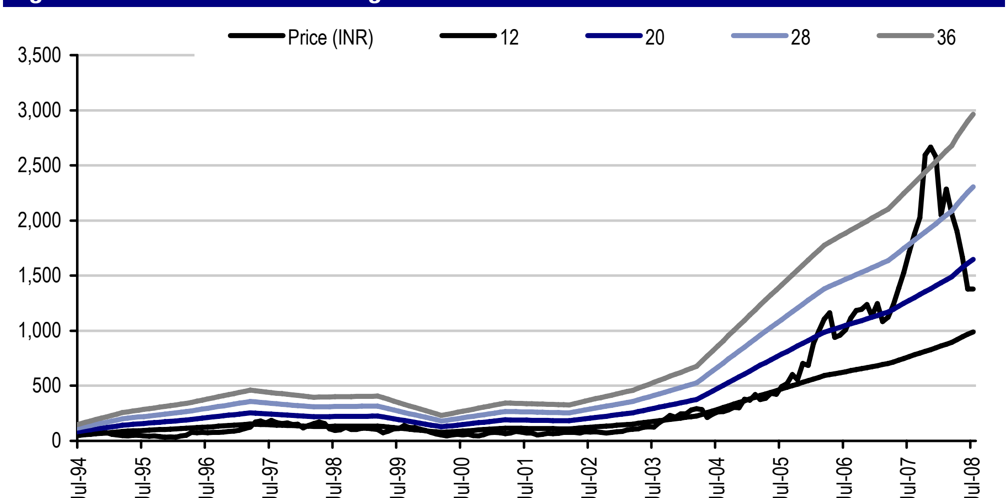
Our target price is based on down-cycle multiples

We have now lowered our TP from INR 2000/sh to INR 1335/sh. Our TP is based on average of 14.5x PER FY10e (v/s PER 26x FY09e previously) and 8.5xEV/EBITDA FY10e. During the start of the last down-cycle, during FY97-99, BHEL traded at 14-16.5x PER. Based on 14.5xFY10e PE we estimate the target price at INR 1460/sh. Likewise during the same period the stock traded in a EV/EBITDA band of 7x-9x. At EV/EBITDA of 8.5x we estimate the target price at INR 1210/sh.

Note that at that time net working capital as a proportion of sales had doubled to 38-40% of sales. We believe that this cycle will be quite similar (in terms of the increase in net working capital as a percent of sales). Net working capital in this cycle is estimated to rise from 27% of sales in FY08e to 32% of sales in FY10e.

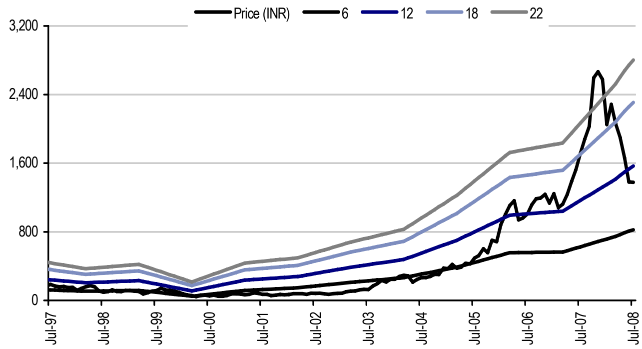
Our target price of INR 1335/share is the average of the two methodologies.

Figure 147: 12-month fwd rolling P/E band



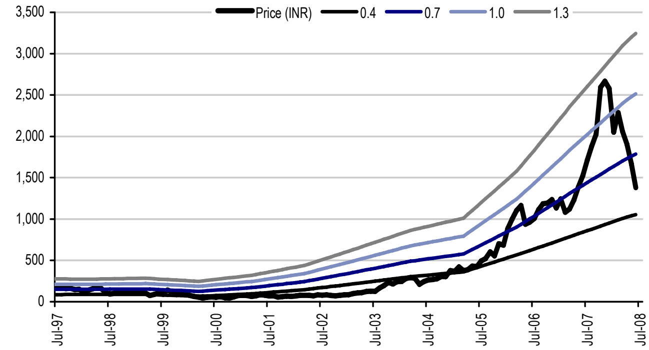
Source: Deutsche Bank, Bloomberg

Figure 148: 12-month fwd rolling EV/EBITDA band



Source: Deutsche Bank, Bloomberg

Figure 149: 12-month fwd rolling EV/Order book band



Source: Deutsche Bank, Bloomberg

Our target multiples are at levels similar to global peers

BHEL's stock is trading at a marginal premium to its worldwide peer average. Given that BHEL's earnings growth and RoE are virtually double that of its global peers, there is a possibility that the stock could sustain a marginal premium.

Figure 150: Comparative valuation

	16 Jul 08		——EV/EBITDA——			———PE———			——ROE (%) ——			EBITDA Margin (%)			EPS CAGR
	Price	Currency	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2008-11e
Hyundai Eng & Const #	58,100	KRW	14	12	NA	18	15	NA	18	16	16	8	10	NA	NA
ABB Ltd #	26	CHF	9	8	8	16	14	13	29	33	31	18	20	21	10
Kawasaki Heavy Industries	478	YEN	7	6	5	15	13	10	8	11	12	7	8	9	23
Mitsubishi Heavy Industries	760	YEN	10	9	8	26	24	19	2	3	4	8	9	10	18
Siemens AG ##	98	EUR	8	6	6	15	10	9	12	21	21	11	13	15	33
Alstom	114	EUR	10	8	7	17	14	12	11	24	27	10	12	13	19
Average of Global Companies			9	8	6	16	14	11	14	18	19	10	12	14	9
BHEL	1,379	INR	12	9	7	19	14	10	32	36	36	21	22	24	37

Source: Deutsche Bank, Bloomberg, Note : All co's are Mar year ending (Except # Dec ending ## Sep Ending)

Sensitivity

Based on our earnings model, we have calculated the impact of changes in important assumptions:

- A 10% variance in order inflows could decrease or increase earnings by 17-18% over the forecast period (FY09-10e).
- A 10% variance in cycle time would decrease or increase earnings by 15-20% over the forecast period.
- A 1% variance in operating costs would decrease or increase earnings by 4-5% over the forecast period.

Figure 151: Sensitivity analysis

	FY09e			FY10e		
Figures in INR mn	**Sales**	**EBITDA**	**PAT**	**Sales**	**EBITDA**	**PAT**
Base Case estimates	**250,575**	**51,958**	**36,434**	**323,812**	**72,785**	**49,557**
Sensitivity to order inflow						
10% higher than our estimates	275,633	61,680	43,048	356,194	85,427	58,156
Change (%)vs Base case	10	19	18	10	17	17
10% lower than our estimates	225,518	42,236	29,819	291,431	60,143	40,959
Change (%)vs Base case	(10)	(19)	(18)	(10)	(17)	(17)
Sensitivity to cycle time						
10% lower than our estimates	278,315	62,721	43,756	352,059	83,542	56,881
Change (%)vs. Base case	11	21	20	9	15	15
10% higher than our estimates	227,879	43,152	30,443	299,610	63,519	43,250
Change (%)vs. base case	(9)	(17)	(16)	(7)	(13)	(13)
Sensitivity to operating margins						
100 bps higher than our estimates	250,575	54,464	38,075	323,812	76,023	51,678
Change (%)vs. Base case	-	5	5	-	4	4
100 bps lower than our estimates	250,575	49,452	34,792	323,812	69,547	47,436
Change (%)vs. Base case	-	(5)	(5)	-	(4)	(4)

Source: Deutsche Bank

Asia India
Transportation Infrastructure

18 July 2008

IVRCL Infra

Reuters: **IVRC.BO**

FCF yield suggests a lot of pain; downgrade to Sell

Concerns on balance sheet strength; Downgrade to Sell

Our analysis of the FCF yield shows that the company has never managed to earn positive FCF over the current capex cycle in India. We believe the slowdown in the investment cycle could further deteriorate the company's ability to generate cash. Loans and advances form 45-55% of the balance sheet, primarily representing loans given to the real estate subsidiary. As RoACE is only marginally above WACC, the company is finding it difficult to generate value. D/g to Sell, TP INR225/sh. This note represents the transfer of coverage to Ravikiran Surana.

Benefits from irrigation capex

IVRCL -- with +50% sales from irrigation -- is one of the largest beneficiaries of irrigation capex. However, looking at the high level of irrigation capex (44% CAGR for FY03-08), we believe that there could be some slowdown in that area. In addition, the central government's irrigation capex plans (of USD103bn for FY07-12e) could see near-term hiccups.

High margins a result of weak FCF?

IVRCL has consistently surprised us with continuous yoy improvement in margins. This may be due, however, to the lax working capital management. RoE and RoCE remain sub-optimal (at 15-16%) and did not follow the up-cycle expansions.

Valuations are rich; downgrade to Sell

Despite an EPS CAGR of 18% for FY08-10e, we have valued the core contracting business at a PE of 6x FY10e. This represents a valuation multiple at the lower end of the trading band. Other divisions have been valued at NPV. The key upside risk is a lower cash requirement from subsidiaries and improvement in working capital management.

Forecasts and ratios

Year End Mar 31	2006A	2007A	**2008E**	2009E	2010E
Sales (INRm)	15,214.2	23,058.9	**36,606.0**	49,924.0	61,410.2
EBITDA (INRm)	1,600.1	2,301.0	**3,614.4**	4,806.2	6,035.0
Reported NPAT (INRm)	1,186.8	1,414.1	**2,104.8**	2,426.8	3,079.6
Reported EPS FD(INR)	1,186.76	11.91	**15.97**	18.13	23.01
DB EPS FD(INR)	1,186.76	11.91	**15.97**	18.13	23.01
OLD DB EPS FD(INR)	21.44	13.74	**18.22**	22.57	24.19
% Change	5436.2%	-13.3%	**-12.3%**	-19.7%	-4.9%
DB EPS growth (%)	159.3	-99.0	**34.1**	13.5	26.9
PER (x)	0.1	24.8	**18.5**	16.3	12.8
EV/EBITDA (x)	9.9	15.5	**11.8**	9.4	8.0

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

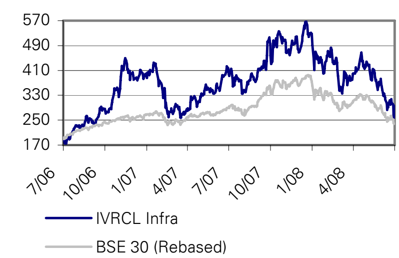
Sell

Price at 17 Jul 2008 (INR)	**295.00**
Price target - 12mth (INR)	**225.00**
52-week range (INR)	**568.90 - 258.40**
BSE 30	**12,576**

Key changes

Rating	Buy to Sell ↓	
Price target	579.00 to 225.00 ↓	**-61.1%**
Sales (FYE)	38,946 to 36,606 ↓	**-6.0%**
Op prof margin (FYE)	10.0 to 9.0 ↓	**-10.6%**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-23.0*	*-26.2*	*-26.0*
BSE 30	*-19.9*	*-23.7*	*-17.8*

Stock data

Market cap (INRm)	**39,489**
Market cap (USDm)	**917**
Shares outstanding (m)	**133.9**
Major shareholders	**Promoter (9.6%)**
Free float (%)	**90**
Avg daily value traded (USDm)	**8.8**

Key indicators (FY1)

ROE (%)	**14.8**
Net debt/equity (%)	**49.8**
Book value/share (INR)	**114.25**
Price/book (x)	**2.6**
Net interest cover (x)	**6.9**
Operating profit margin (%)	**9.0**

Infrastructure Research Team

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:11 July 2008

Running the numbers

Asia

India

Infrastructure

IVRCL Infra

Reuters: IVRC.BO Bloomberg: IVRC IN

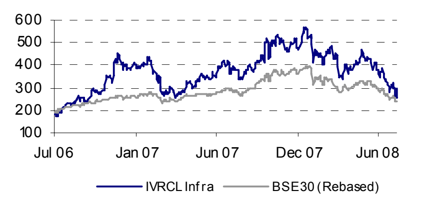
Sell

Price (17 Jul 08)	INR 295.00
Target price	INR 225.00
52-week Range	INR 258.40 - 568.90
Market Cap (m)	INRm 39,489 USDm 917

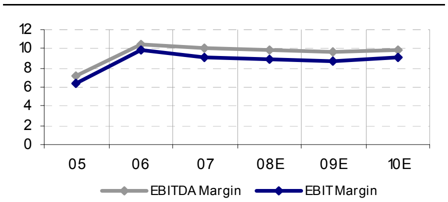
Company Profile

IVRCL Infrastructures & Projects Ltd is a construction company engaged in building buildings, bridges, pipelines, marine construction, canal modernization and road works. IVRCL group is also involved in various real estate projects and also has ownership of many BOOT projects.

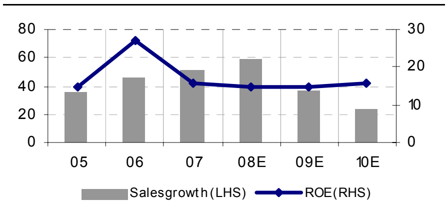
Price Performance



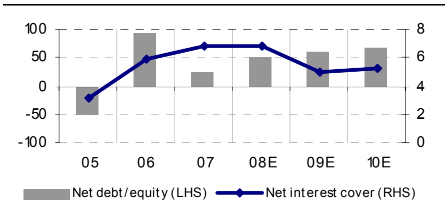
Margin Trends



Growth & Profitability



Solvency



Ravikiran Surana

+91 22 6658 4207 ravikiran.surana@db.com

Fiscal year end 31-Mar	2005	2006	2007	2008E	2009E	2010E
Financial Summary						
DB EPS (INR)	457.72	1,186.76	11.91	15.97	18.13	23.01
Reported EPS (INR)	457.72	1,186.76	11.91	15.97	18.13	23.01
DPS (INR)	0.00	0.00	1.00	1.50	1.50	1.50
BVPS (INR)	nm	nm	101.9	114.2	132.4	157.2
Weighted average shares (m)	69	96	119	132	134	134
Average market cap (INRm)	3,577	14,173	35,087	39,489	39,489	39,489
Enterprise value (INRm)	1,236	15,791	35,629	42,599	44,965	48,314
Valuation Metrics						
P/E (DB) (x)	0.1	0.1	24.8	18.5	16.3	12.8
P/E (Reported) (x)	0.1	0.1	24.8	18.5	16.3	12.8
P/BV (x)	nm	nm	2.87	2.58	2.23	1.88
FCF Yield (%)	37.2	nm	5.4	nm	nm	nm
Dividend Yield (%)	0.0	0.0	0.3	0.5	0.5	0.5
EV/Sales (x)	0.1	1.0	1.5	1.2	0.9	0.8
EV/EBITDA (x)	1.6	9.9	15.5	11.8	9.4	8.0
EV/EBIT (x)	1.8	10.6	17.1	13.0	10.3	8.7
Income Statement (INRm)						
Sales revenue	**10,438**	**15,214**	**23,059**	**36,606**	**49,924**	**61,410**
Gross profit	**1,118**	**2,057**	**3,220**	**5,261**	**7,075**	**8,826**
EBITDA	**756**	**1,600**	**2,301**	**3,614**	**4,806**	**6,035**
Depreciation	80	110	216	328	426	490
Amortisation	0	0	0	0	0	0
EBIT	**675**	**1,490**	**2,085**	**3,286**	**4,380**	**5,545**
Net interest income(expense)	-214	-253	-308	-478	-868	-1,068
Associates/affiliates	0	0	0	0	0	0
Exceptionals/extraordinaries	0	0	0	0	0	0
Other pre-tax income/(expense)	24	57	74	45	110	120
Profit before tax	**485**	**1,294**	**1,850**	**2,853**	**3,622**	**4,596**
Income tax expense	28	108	436	749	1,195	1,517
Minorities	0	0	0	0	0	0
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	**458**	**1,187**	**1,414**	**2,105**	**2,427**	**3,080**
DB adjustments (including dilution)	0	0	0	0	0	0
DB Net profit	**458**	**1,187**	**1,414**	**2,105**	**2,427**	**3,080**
Cash Flow (INRm)						
Cash flow from operations	**1,686**	**-3,420**	**3,163**	**-4,944**	**-1,068**	**-2,387**
Net Capex	-356	-527	-1,253	-1,500	-800	-700
Free cash flow	**1,329**	**-3,946**	**1,910**	**-6,444**	**-1,868**	**-3,087**
Equity raised/(bought back)	755	-1,432	85	-32	0	0
Dividends paid	0	0	0	0	0	0
Net inc/(dec) in borrowings	750	4,315	-1,234	4,100	1,944	2,822
Other investing/financing cash flows	0	0	0	0	0	0
Net cash flow	**0**	**0**	**761**	**-2,376**	**75**	**-265**
Change in working capital	*1,167*	*-4,470*	*1,519*	*-7,428*	*-3,921*	*-5,957*
Balance Sheet (INRm)						
Cash and other liquid assets	4,527	2,443	2,238	2,139	1,148	621
Tangible fixed assets	957	1,373	2,435	3,607	3,981	4,190
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	317	2,765	2,829	4,509	5,079	5,079
Other assets	7,103	11,099	24,444	31,401	41,401	52,914
Total assets	**12,903**	**17,680**	**31,947**	**41,657**	**51,608**	**62,804**
Interest bearing debt	2,503	6,827	5,608	9,759	11,703	14,525
Other liabilities	6,370	6,084	13,121	16,604	22,182	27,239
Total liabilities	**8,873**	**12,910**	**18,729**	**26,363**	**33,885**	**41,764**
Shareholders' equity	4,030	4,770	13,217	15,293	17,723	21,040
Minorities	0	0	0	0	0	0
Total shareholders' equity	**4,030**	**4,770**	**13,217**	**15,293**	**17,723**	**21,040**
Net debt	*-2,024*	*4,383*	*3,370*	*7,620*	*10,555*	*13,904*
Key Company Metrics						
Sales growth (%)	35.0	45.8	51.6	58.8	36.4	23.0
DB EPS growth (%)	112.2	159.3	-99.0	34.1	13.5	26.9
EBITDA Margin (%)	7.2	10.5	10.0	9.9	9.6	9.8
EBIT Margin (%)	6.5	9.8	9.0	9.0	8.8	9.0
Payout ratio (%)	nm	nm	8.4	9.4	8.3	6.5
ROE (%)	14.8	27.0	15.7	14.8	14.7	15.9
Capex/sales (%)	3.4	3.5	5.4	4.1	1.6	1.1
Capex/depreciation (x)	4.4	4.8	5.8	4.6	1.9	1.4
Net debt/equity (%)	-50.2	91.9	25.5	49.8	59.6	66.1
Net interest cover (x)	3.2	5.9	6.8	6.9	5.0	5.2

Source: Company data, Deutsche Bank estimates

Investment thesis

Outlook

We downgrade IVRCL to Sell due to the following reasons:

- IVRCL -- with +50% sales from irrigation -- is one of the largest beneficiaries of irrigation capex. However, looking at the high level of irrigation capex (44% CAGR for FY03-08), we believe that there could be some slowdown in this area. In addition, the central government's irrigation capex plans (of USD103bn for FY07-12e) could see near-term hiccups. We need to see if the company will take on more orders, as its hands are already full.
- With an order book of INR130bn (+82% yoy for FY08) and revenue of INR36.6bn (+59% yoy for FY08), we are not worried much about revenue visibility.
- IVRCL has consistently surprised us with continuous yoy improvement in margins. However, this may be due to a lax working capital management. Loans and advances form 45-55% of the balance sheet, primarily representing loans given to the real estate subsidiary. Accordingly, the company has never managed to earn positive FCF over the current capex cycle in India. Also the balance sheet appears to lack the strength to win attractive BOOT projects.
- RoE and RoCE at 15-16% remain sub-optimal and did not follow the up-cycle expansions. As the current levels of RoACE are only marginally above WACC, the company is finding it difficult to generate value.
- The stock has traded within a value band of 6x-22x. With the cyclical turnaround, our view is that the stock's valuation should come down.

Valuation

We have valued IVRCL on a SOTP basis. IVRCL consists of two businesses: a contracting business and non-contracting business. The core contracting business has been valued at 6x FY10e. This is on the lower end of the 14-year trading band and reflects (a) the change in the investment cycle environment, from an up-cycle to a down-cycle, and (b) a weak RoE and RoCE from the business, which suffers from negative FCF generation even during a cyclical upturn.

The non-contracting business can broadly be divided into two listed subsidiaries and two unlisted subsidiaries. The unlisted subsidiaries (i.e. the BOOT road project and the desalination project) have been valued at the NPV of the project's cash flows. We have assumed a CoE of 15%, based on DB's forecast of risk free rate of 8.2%, and a Beta of 1.4, giving a risk premium of 4.7. We estimate this value to be INR51/sh. The listed subsidiaries (i.e., IVR Prime and Hindustan Dorr Oliver) have been valued at current market value. For Hindustan Dorr Oliver this implies a target PE multiple of 9x FY10e. Overall, we used a conglomerate discount of 10% to estimate our 12-month TP of INR225/sh.

Risk

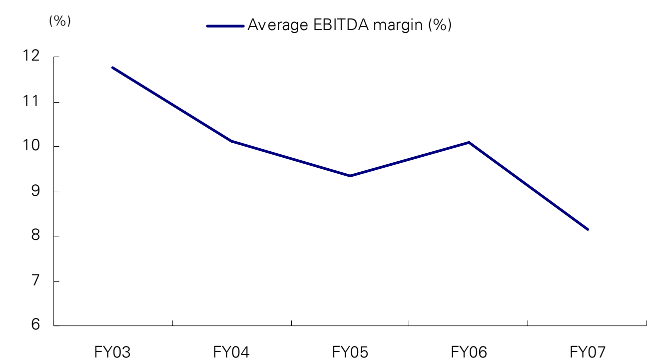
In our opinion, the most important risk is a sharp reduction in working capital driven by the lower requirement of cash by subsidiaries and better payment terms from the contracting business. If revenues are 10% higher than our estimates, EPS rises by 19%. If margins are 100 bps higher, then EPS could rise by 14%.

Is margin at the cost to FCF?

IVRCL has consistently surprised us on margins

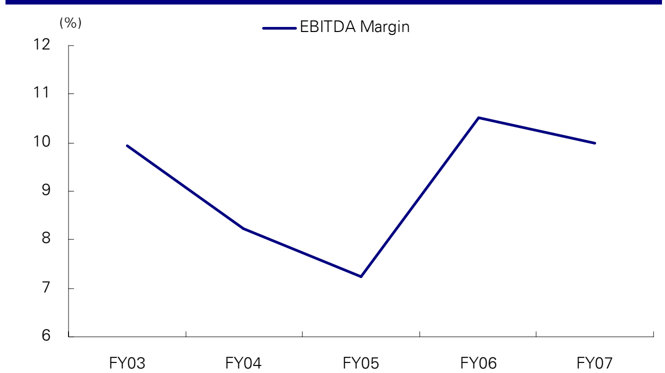
IVRCL has delivered CAGRs of 55% in revenues and 60% in PAT margins over the last three years (FY05-08). IVRCL has consistently surprised us with continuous yoy improvement in margins and a pace of revenue completion unmatched in the industry.

Figure 152: A tale of two margins: construction companies



Source: Deutsche Bank, Prowess

Figure 153: A tale of two margins: IVRCL



Source: Company, Deutsche Bank

A look beyond the margins shows that IVRCL's cash flow has been negative since FY05. Negative cash was primarily driven by higher cash requirements for working capital. In addition, aggressive capex plans, loans to subsidiaries (primarily IVR Prime), and investments in BOOT projects have further stretched cash flows. So far the negative cash flow has been funded by borrowings (FCCB INR3.0bn in Nov. 2005) and equity raising (QIP INR5.5bn in Dec. 2006). We believe that it would be difficult to generate positive operating cash flows. Although the capex cycle and the investment in subsidiaries will decline vis-à-vis the last three years, the company's ability to undertake any BOOT projects on its own cash flow strength looks less probable

Figure 154: IVRCL's free cash flows

	FY05	FY06	FY07	FY08e	FY09e	FY10e
Operating profit before working capital changes	**943**	**1,399**	**2,417**	**2,253**	**2,622**	**3,339**
Working capital changes and taxes paid	(955)	(2,424)	(3,693)	(7,428)	(3,921)	(5,957)
Net cash generated from operations	**(12)**	**(1,025)**	**(1,275)**	**(5,175)**	**(1,299)**	**(2,618)**
Capex	(354)	(528)	(1,283)	(1,500)	(800)	(700)
Investments	(221)	(2,448)	(64)	(1,680)	(570)	-
Loans to subsidiaries	-	187	(3,195)	3,954	(500)	(500)
Other	65	89	276			
Net cash used in investing activities	**(509)**	**(2,700)**	**(4,266)**	**774**	**(1,870)**	**(1,200)**
Issue of share capital	1,373	(1,410)	5,423	202	234	468
Borrowings	582	4,315	550	4,100	1,944	2,822
Others	(321)	(426)	(659)			
Net cash from financing	**1,633**	**2,479**	**5,315**	**4,302**	**2,178**	**3,291**
Net increase / (decrease) in cash	**1,112**	**(1,247)**	**(226)**	**(99)**	**(991)**	**(527)**

Source: Deutsche Bank, Company

Assumptions and forecasts

Our assumptions factor in some elements of higher cycle time

Based on management's guidance, we have assumed an order inflow CAGR of 23% for FY07-10e. We have assumed a slightly higher completion period for projects. Accordingly we have estimated sales will grow by 30% over FY08-10e. We have generally assumed constant margins and a much higher tax rate.

Figure 155: Changes in key assumptions

Standalone	FY08	FY09E	FY10E
Order Inflow (Rs mn)	95000	85000	95000
Order Backlog (Rs.mn)	129,464	164,028	196,989
Revenues	36,606	50,436	62,040
EBITDA	3,614	4,807	6,035
EBITDA Margins (%)	9.9	9.6	9.8
Tax rate (%)	26.2	33.0	33.0

Source: Deutsche Bank

Accordingly, we estimate an EPS CAGR of 21% for the forecast period.

Figure 156: Financials at a glance - standalone

	FY08	FY09E	FY10E
Sales (INR mn)	36,606	49,924	61,410
EBITDA (INR mn)	3,614	4,807	6,035
EBIT (INR mn)	3,286	4,380	5,545
PAT (INR mn)	2,853	3,622	4,597
EPS (INR)	15.7	18.1	23.0
ROE #	14.8	14.7	15.9
ROCE #	15.0	16.1	17.1

Source: Deutsche Bank

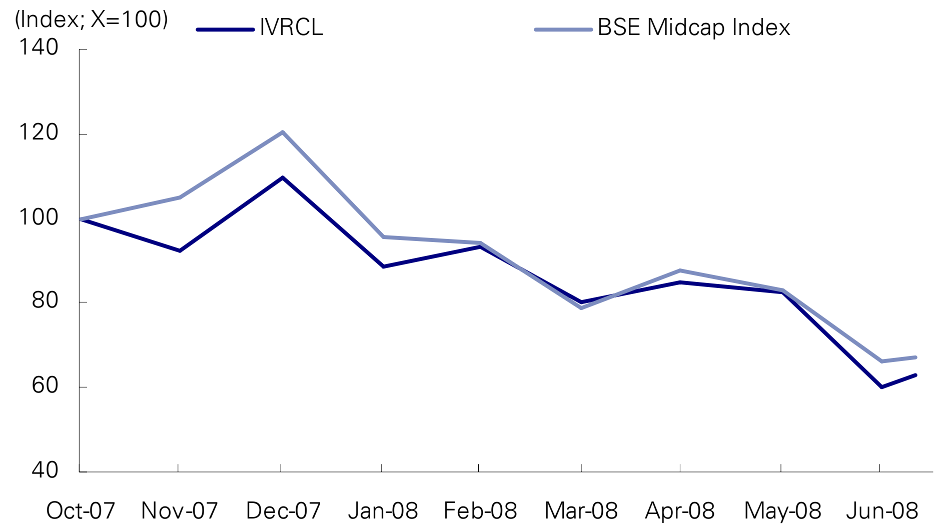
While the RoCE shows a 200 bps improvement on a standalone basis, on consolidated levels we expect it to taper off by 200 bps.

Valuation

Stock price has corrected

IVRCL has corrected by ~47% YTD, performing inline with the BSE Midcap index.

Figure 157: Correction in line with the BSE Midcap index

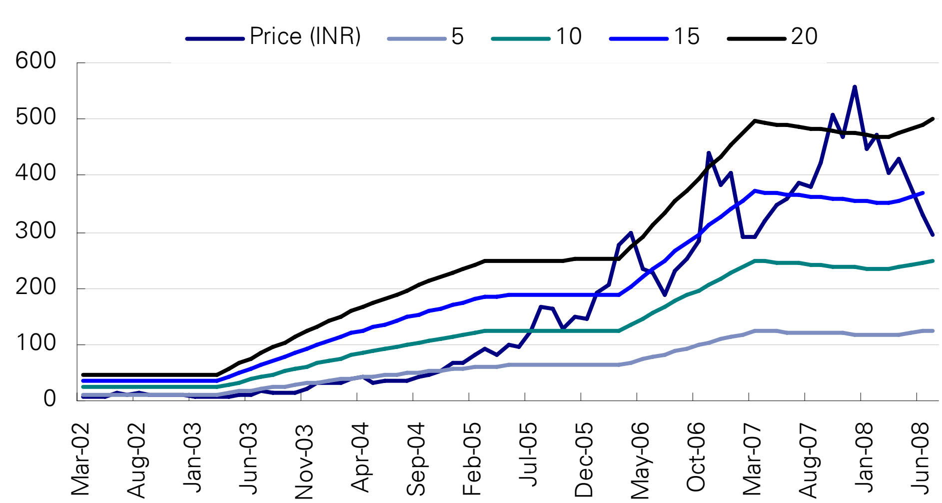


Source: Deutsche Bank, Bloomberg

Stock is still trading in the upper end of trading band

Despite the sharp correction, the stock is still trading above the pre FY05 multiples.

Figure 158: IVRCL's P/E band



Source: Deutsche Bank, Bloomberg

A sum-of-the-parts valuation

We have valued IVRCL on a SOTP basis. IVRCL has two businesses: a contracting business and a non-contracting business. The core contracting business has been valued at 6x FY10e. This is at the lower end of the 6-year trading band and reflects (a) the change in the investment cycle environment, from an up-cycle to a down-cycle, and (b) weak RoE and RoCE from the business, which suffers from negative FCF generation even during cyclical upturns.

The non-contracting business can broadly be divided into two listed subsidiaries and two unlisted subsidiaries. The unlisted subsidiaries (i.e., the BOOT road project and the desalination project) have been valued at the NPV of the project's cash flows. We have assumed a CoE of 15%, based on DB's forecast of risk free rate of 8.2%, and a Beta of 1.4, giving a risk premium of 4.7. We estimate this value to be INR51/sh. The listed subsidiaries (i.e. IVR Prime and Hindustan Dorr Oliver) have been valued at current market value. For Hindustan Dorr Oliver this implies a target PE multiple of 9x FY10e. Overall we used a conglomerate discount of 10% to estimate our 12-month TP of INR225/sh.

Figure 159: SOTP valuation

Business	Value (INR mn)	Per share	Comments
Core contracting	18,478	138	Based on PE 6x FY10e - at lower end of the trading band
BOOT Projects	6,763	51	IVRCL's share of NPV t
HDOR	1,563	12	On market price of HDOR
IVR Prime	6,909	52	On market price of IVR Prime
Total	33,713	252	
Less: Holding co. Discount	3,371	25	10% Holding Co. Discount
	30,342	**225**	**Rounded off**

Source: Deutsche Bank

Risks

In our opinion, the most important upside risk is a sharp reduction in working capital driven by the lower requirement of cash by subsidiaries and better payment terms from the contracting business. As per our sensitivity analysis 10 days of lower working capital days would improve FCF yield by ~200bps.

Also if revenues are 10% higher than our estimates, EPS rises by 19%. If margins are 100 bps higher, then EPS could rise by 14%.

Asia India
Conglomerates

18 July 2008

Larsen & Toubro Ltd

Reuters: **LART.BO**

Vulnerable to cyclical downturn; downgrade to Sell

Valuations reflect cyclical high; we downgrade from Buy to Sell
Despite underperforming the BSE Sensex by 6% YTD, L&T still trades at 21x FY09e and 16x FY10e P/E. This seems rich as we head into a downcycle. We have cut our earnings estimates by 8% for FY09e and 12% for FY10e. Our concerns are: (1) risks to the 44% of the order book in steel, oil and gas and real estate; (2) the turnaround of international subsidiaries keeps getting pushed back; and (3) the quality of earnings may likely deteriorate as the working capital cycle stretches. Our revised TP is INR2000 (- 18%). Downgrade to Sell.

Benefits implied for the last leg of the capex cycle
L&T has seen significant order inflows in the power, construction, real estate and steel sectors. Earnings growth momentum has picked up well in FY08, albeit from a low base in FY07. However, we believe that the risk profile for a few of the sectors such as steel, power and real estate has increased significantly, and could then impact medium-term growth prospects.

Quality of earnings may deteriorate
While our revised estimates are largely in line with consensus, operating FCFs could be hit as order inflow momentum slows down. Increasing competition could lead to predatory pricing. We estimate a 300 bps dip in RoE by FY10e.

18% potential downside; key risk is government pumping the economy
Our revised 12m TP based on a SOTP is INR2000/sh. For the long-cycle E&C business, we have assumed an exit P/E of 14.5x (same as BHEL). We value the other key businesses -- IT, Financial services, L&T IDPL and investments – at INR418/sh (page 113). Key upside risks are the listing of subsidiaries and continued high level of investment demand in India (page 103).

Forecasts and ratios

Year End Mar 31	2006A	2007A	**2008E**	2009E	2010E
Sales (INRm)	164,183.1	205,152.7	**294,760.2**	348,532.0	439,039.6
EBITDA (INRm)	14,417.9	25,732.3	**36,187.7**	46,456.1	65,226.0
Reported NPAT (INRm)	12,619.6	22,350.2	**23,865.9**	34,703.9	42,677.6
Reported EPS FD (INR)	43.63	77.27	**81.95**	118.35	145.54
DB EPS FD (INR)	43.63	62.41	**81.05**	108.49	145.54
OLD DB EPS FD (INR)	43.63	62.41	**81.06**	115.82	165.82
% Change	0.0%	0.0%	**-0.0%**	-6.3%	-12.2%
DB EPS growth (%)	19.0	43.0	**29.9**	33.9	34.2
PER (x)	17.7	21.2	**30.1**	22.5	16.8
EV/EBITDA (x)	16.2	16.0	**20.1**	16.6	12.2

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

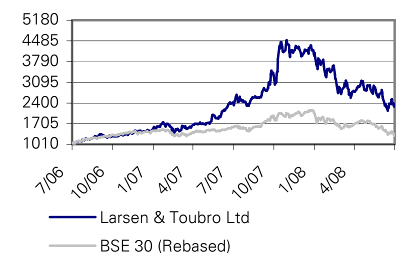
Sell

Price at 17 Jul 2008 (INR)	**2,443.00**
Price target - 12mth (INR)	**2,000.00**
52-week range (INR)	**4,505.50 - 2,140.35**
BSE 30	**12,576**

Key changes

Rating	Buy to Sell ↓	
Price target	3,600.00 to 2,000.00 ↓	**-44.4%**
Net profit (FYE)	23,868.5 to 23,865.9 ↓	**-0.0%**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-17.0*	*-18.9*	*-5.9*
BSE 30	*-18.3*	*-22.6*	*-17.9*

Stock data

Market cap (INRm)	**706,516**
Market cap (USDm)	**16,402**
Shares outstanding (m)	**291.2**
Major shareholders	**Financial Institutions (35%)**
Free float (%)	**87**
Avg daily value traded (USDm)	**97.0**

Key indicators (FY1)

ROE (%)	**26.7**
Net debt/equity (%)	**53.3**
Book value/share (INR)	**373.31**
Price/book (x)	**6.5**
Net interest cover (x)	**23.1**
Operating profit margin (%)	**10.5**

Infrastructure Research Team

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:08 July 2008

Running the numbers

Asia

India

Conglomerates

Larsen & Toubro Ltd

Reuters: LART.BO Bloomberg: LT IN

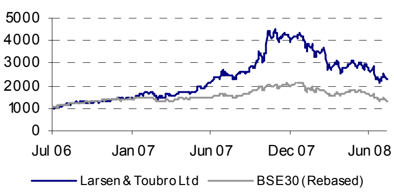
Sell

Price (17 Jul 08)	INR 2,443.00
Target price	INR 2,000.00
52-week Range	INR 2,140.35 - 4,505.50
Market Cap (m)	INRm 706,516 USDm 16,402

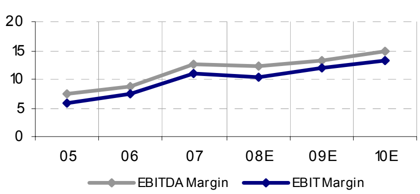
Company Profile

Larsen & Toubro Ltd is India's largest engineering and construction company. L&T's business model has evolved into a distinct E&C and non-E&C business. The long-cycle E&C portion is cyclical and dependent largely on new project capex. The short-cycle non-E&C business largely comprises business segments such as electrical and electronics, industrial products, IT(L&T Infotech), Financial services (L&T Finance) and various infrastructure projects under public private partnership. The company commands an international presence with operations in the Middle East, Malaysia and China.

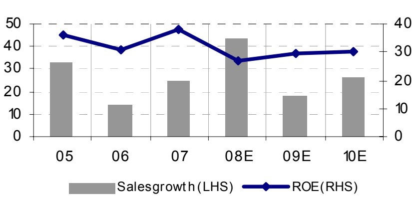
Price Performance



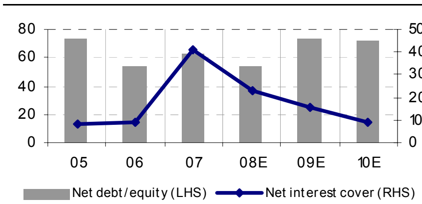
Margin Trends



Growth & Profitability



Solvency



Manish Saxena
+91 22 6658 4034 manish.saxena@db.com

Fiscal year end 31-Mar	2005	2006	2007	2008E	2009E	2010E
Financial Summary						
DB EPS (INR)	36.66	43.63	62.41	81.05	108.49	145.54
Reported EPS (INR)	36.66	43.63	77.27	82.23	118.75	145.54
DPS (INR)	12.36	11.89	14.58	17.09	35.18	35.18
BVPS (INR)	113.2	170.8	238.7	373.3	436.2	530.8
Weighted average shares (m)	289	289	289	291	293	293
Average market cap (INRm)	123,285	223,088	382,082	706,516	706,516	706,516
Enterprise value (INRm)	142,837	234,225	410,887	727,782	770,821	797,297
Valuation Metrics						
P/E (DB) (x)	11.6	17.7	21.2	30.1	22.5	16.8
P/E (Reported) (x)	11.6	17.7	17.1	29.7	20.6	16.8
P/BV (x)	4.39	7.12	6.78	6.54	5.60	4.60
FCF Yield (%)	1.5	3.4	nm	nm	nm	nm
Dividend Yield (%)	2.9	1.5	1.1	0.7	1.4	1.4
EV/Sales (x)	1.0	1.4	2.0	2.5	2.2	1.8
EV/EBITDA (x)	13.4	16.2	16.0	20.1	16.6	12.2
EV/EBIT (x)	16.8	19.6	18.5	23.6	18.5	13.7
Income Statement (INRm)						
Sales revenue	**143,791**	**164,183**	**205,153**	**294,760**	**348,532**	**439,040**
Gross profit	**143,791**	**164,183**	**205,153**	**294,760**	**348,532**	**439,040**
EBITDA	**10,631**	**14,418**	**25,732**	**36,188**	**46,456**	**65,226**
Depreciation	2,137	2,450	3,463	5,375	4,761	7,211
Amortisation	0	0	0	0	0	0
EBIT	**8,494**	**11,968**	**22,269**	**30,813**	**41,695**	**58,015**
Net interest income(expense)	-1,025	-1,303	-538	-1,335	-2,630	-6,348
Associates/affiliates	-38	715	950	1,343	2,107	2,366
Exceptionals/extraordinaries	0	0	4,300	343	3,000	0
Other pre-tax income/(expense)	6,583	6,002	3,969	5,365	5,565	5,265
Profit before tax	**14,052**	**16,668**	**30,000**	**35,186**	**47,630**	**56,931**
Income tax expense	2,772	4,313	7,327	11,751	14,308	16,104
Minorities	639	450	1,273	912	724	515
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	**10,603**	**12,620**	**22,350**	**23,866**	**34,704**	**42,678**
DB adjustments (including dilution)	0	0	-4,300	-343	-3,000	0
DB Net profit	**10,603**	**12,620**	**18,050**	**23,523**	**31,704**	**42,678**
Cash Flow (INRm)						
Cash flow from operations	**4,440**	**15,563**	**14,581**	**35,579**	**1,152**	**22,494**
Net Capex	-2,579	-7,881	-26,124	-38,342	-19,530	-29,093
Free cash flow	**1,861**	**7,681**	**-11,543**	**-2,764**	**-18,378**	**-6,599**
Equity raised/(bought back)	10	16	121	16,708	908	908
Dividends paid	-2,873	-3,650	-4,216	-6,976	-10,128	-12,703
Net inc/(dec) in borrowings	6,846	449	29,335	11,537	35,799	46,728
Other investing/financing cash flows	-1,333	-6,219	-4,676	-23,101	-403	-128
Net cash flow	**4,511**	**-1,723**	**9,020**	**-4,596**	**7,798**	**28,206**
Change in working capital	*0*	*0*	*0*	*0*	*0*	*0*
Balance Sheet (INRm)						
Cash and other liquid assets	9,883	8,160	17,180	12,584	10,289	39,320
Tangible fixed assets	22,151	29,735	54,539	101,748	134,664	177,551
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	6,151	16,757	24,793	51,239	46,615	38,223
Other assets	91,324	109,564	152,077	201,967	267,067	332,448
Total assets	**129,509**	**164,216**	**248,589**	**367,538**	**458,635**	**587,541**
Interest bearing debt	34,538	34,987	64,322	75,859	111,658	158,386
Other liabilities	61,172	78,757	108,766	172,979	209,523	263,553
Total liabilities	**95,710**	**113,744**	**173,088**	**248,837**	**321,181**	**421,939**
Shareholders' equity	32,751	49,405	69,045	109,471	127,903	155,664
Minorities	1,048	1,066	6,457	9,230	9,551	9,938
Total shareholders' equity	**33,799**	**50,471**	**75,502**	**118,701**	**137,454**	**165,602**
Net debt	*24,656*	*26,827*	*47,142*	*63,275*	*101,369*	*119,066*
Key Company Metrics						
Sales growth (%)	32.5	14.2	25.0	43.7	18.2	26.0
DB EPS growth (%)	31.7	19.0	43.0	29.9	33.9	34.2
EBITDA Margin (%)	7.4	8.8	12.5	12.3	13.3	14.9
EBIT Margin (%)	5.9	7.3	10.9	10.5	12.0	13.2
Payout ratio (%)	33.7	27.2	18.9	20.9	29.7	24.2
ROE (%)	36.1	30.7	37.7	26.7	29.2	30.1
Capex/sales (%)	1.8	4.8	12.7	13.0	5.6	6.6
Capex/depreciation (x)	1.2	3.2	7.5	7.1	4.1	4.0
Net debt/equity (%)	72.9	53.2	62.4	53.3	73.7	71.9
Net interest cover (x)	8.3	9.2	41.4	23.1	15.9	9.1

Source: Company data, Deutsche Bank estimates

Investment thesis

We believe the stock's valuation is rich

Due to our expectations of slowing economic growth and as a corollary decelerating order inflow momentum, we downgrade Larsen and Toubro from Buy to Sell. Our TP implies 18% potential downside. Despite underperforming the Sensex by 6% YTD, the stock is trading at a P/E of 22x FY09e and 16.5x FY10e. This seems rich to us because:

- One-third of the orders are from the government or government-owned companies. This may be a potential risk given the country's worsening fiscal deficit. Also, we estimate that 44% of announced order inflows are from steel, real estate and oil and gas. Rising crude oil prices and interest rates put the order book at risk.
- Although we expect order inflows to maintain momentum in Q1FY09, we believe the pace will slow down sooner rather than later.
- Slower growth in order inflows would have an impact on advances from customers. We estimate that this could result in an increase in net working capital to 14% of sales from the current 10%.
- RoE and RoCE have peaked and we see only marginal improvement in RoE in the forecast period due to better contribution from international subsidiaries.

Our SOTP valuation accounts for the five segments

We have valued the company using a SOTP and target P/E multiple on consolidated earnings. We have divided L&T into five segments, which we value as follows:

(1) We value L&T's long-cycle Engineering and Construction (E&C) business at a P/E of about 14.5x FY10e in line with BHEL, its closest peer among other listed companies. (2) The short-cycle non-E&C engineering business is comparable to that of ABB India and Siemens India. However, L&T's return ratios are lower and its business is protected by fewer entry barriers than Siemens and ABB. Accordingly we value this segment at roughly a 10% discount to ABB i.e. at a P/E of 16x FY10e. (3) We value L&T IDPL's investments as the sum of L&T's effective share of NPVs at a 15% cost of equity. (4) We value the software division in line with its peers at a P/E of 14x FY10e earnings. (5) We value L&T Finance, along with L&T Infra Finance, at a P/BV of 1.5x FY10e.

Due to this we derive a SOTP valuation of INR2,000/sh, implying a consolidated P/E of 14x FY10e.

A boost in the macro environment is potential upside risk

A sharp fall in commodity and energy costs may give a boost to the macro environment thereby maintaining L&T's order inflow momentum. Listing of any of its subsidiaries (L&T Infotech, L&T Finance and L&T IDPL) could unlock their value for L&T.

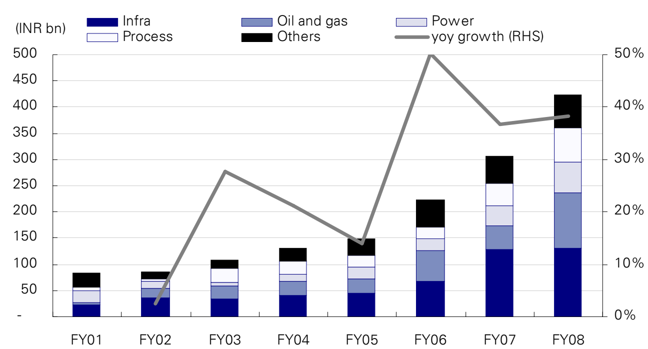
If revenue from engineering projects is 10% above our expectations, the standalone EPS would rise by 10%. Likewise, if the E&C margins are 1% above our estimates, earnings would rise by 7% for FY09e and FY10e. In terms of cash flow yields, if the working capital cycle is 10 days shorter than we assume then the yield could improve by 165bps.

Benefits from tail end of the cycle

A wide range of sectors have helped push up L&T's order inflows

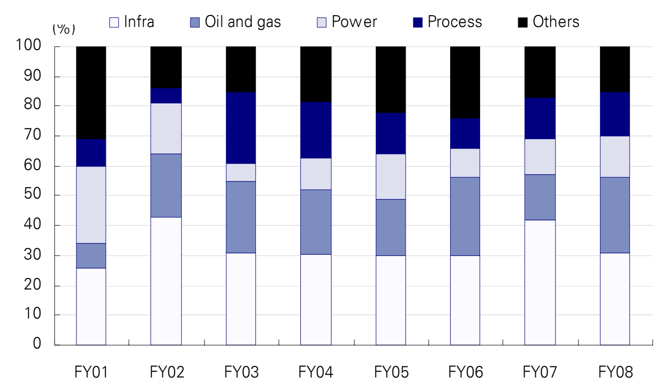
L&T has seen very strong order inflow growth in FY08, up 45% YOY. It is difficult to attribute this to a specific sector, making L&T a play on investment in a wide range of sectors. In FY06, the key sectors that drove orders were infrastructure and oil and gas. Similarly, in FY08, order inflow growth picked up momentum as orders came in from the upstream/downstream oil and gas space and power.

Figure 160: L&T's order inflow (INR bn)



Source: Deutsche Bank, Company

Figure 161: Composition of L&T's order inflows



Source: Deutsche Bank, Company

Impressive order pipeline - but may get pushed back

A large portion of the pipeline may get pushed back due to tightening of credit, regulatory (environment and forest) clearances, and other supply bottlenecks.

Based on plans announced by the government, the order pipeline for L&T looks quite impressive.

Figure 162: Order pipeline looks robust at face value (INR bn)

Infrastructure	
Roads (Southern and Western India)	20
Airports	94
Ports	90
Urban infrastructure	14
Sub total - (A)	**217**
Manufacturing	
Refinery	307
Steel	232
Defense, Aerospace and others	20
Sub total - (B)	**559**
Power (C)	70
Grand Total (A+B+C)	**846**
L&T's share – 70%	592
Other orders (non-major and unidentified)	484
Expected Order inflow in next 2-3 years	**1,076**

Source: Deutsche Bank, Planning Commission

L&T's bid for the Krishnapatnam super critical project looks about 6-10% lower than Doosan's bid for Tata Power's Mundra UMPP project.

While it is early days, we are already seeing some correction in pricing. L&T's bid for the Krishnapatnam project on a price per MW basis looks about 6-10% lower than Dooshan's bid for Tata Power's UMPP project. Note that the capital equipment cost has gone up by 10-35% over the last year. This reminds us of the price war between Korean suppliers and L&T way back in FY99-00 for supply of DHDS (fuel upgradation equipment). L&T won 45% of the market – while the remainder went to Korean companies whose pricing was about 10-15% cheaper than L&T. Being a weak year for global spends, the Korean engineering players were desperate to get orders as their order books were quite weak.

Figure 163: No reduction in intensity of competition for winning road projects

Road stretches	Length (km)	Project cost (INR mn)	Developer with lowest bid	Revenue share (%) / Negative grant (Rs mn)		Remarks
				L1(lowest bid)	L2(second lowest bid)	
Vadodara Bharuch	83	6600	L&T	(4,710)		A -ve NPV at COE of 15%
Bharuch Surat	65	4920	IRB Infrastructure Developers	(5,040)	(4,800)	A -ve NPV at COE of 15%
Chennai – Tada	43	3350	L&T	17%	5%	A marginally positive NPV
Surat – Dahisar	239	13550	Consortium of IRB Infrastructure Developers and Deutsche Bank	38%	35%	A -ve NPV at COE of 15%
Gurgaon – Jaipur	226	15170	Consortium of ETA, UAE and KMC	48%	36%	A -ve NPV at COE of 15%
Cilkalururipet – Vijaywada	83	5400	Consortium of IJM Malaysia and IDFC	2%	NA	A marginally positive NPV
Panipat – Jalandhar	291	21980	Consortium of Isolux, Spain and Soma Constructions	20%		A -ve NPV at COE of 15%

Source: Deutsche Bank, Press Report

Perhaps road developers believe that the order inflow cycle has to slow down and accordingly, they have bid at zero to marginally negative NPVs.

Even the bidding in recently concluded road projects by NHAI does not give us comfort. It looks like most road developers believe that the order inflow cycle has to slow down and accordingly they have bid at zero to marginally negative NPVs.

Weak finances of developers

As stated in our sector report[1], companies in the commodity segment are seeing the most credit rating downgrades. This is raising the cost of financing for a lot of developers, especially at a time when a lot of them have yet to tie-up equity funding.

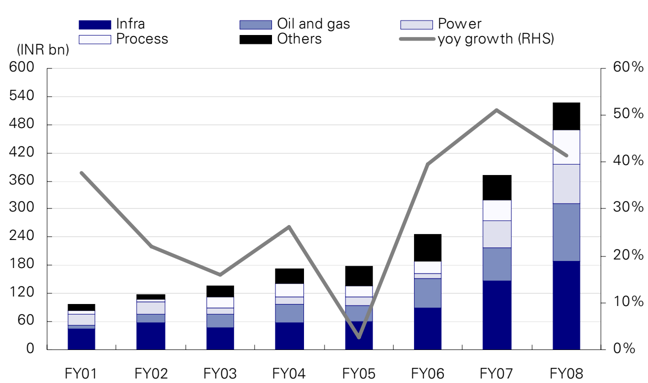
[1] For details pls refer to our sector report titled, " Don't wait for the music to stop" dated July 18,2008

Could the quality of earnings deteriorate?

Any risk to the order book?

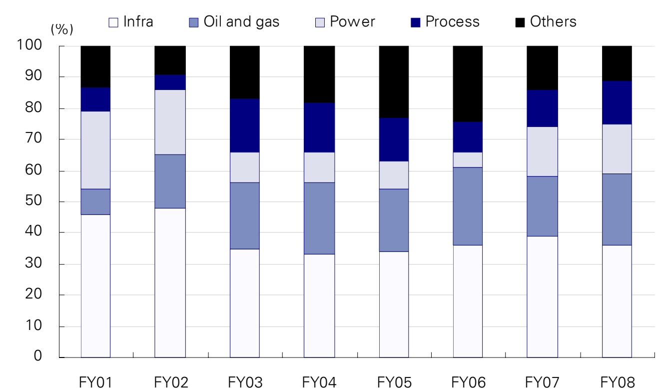
L&T has a well diversified order book with a skew towards the infrastructure and power sectors. Both upstream and downstream oil and gas are far behind, as are "others", which mainly constitutes valves, welding machines and consumables. This could be a positive data point from the company's perspective, especially if we believe we are heading into a downcycle.

Figure 164: L&T's order book (INR bn)



Source: Deutsche Bank, Company

Figure 165: Composition of L&T's order book



Source: Deutsche Bank, Company

33% of the order book is exposed to government spending either directly or indirectly – part of this could be at risk.

Any risk from government orders

We acknowledge that L&T has a good risk mitigation system, whereby each and every large exposure is vetted by senior management. Our worries regarding L&T's order book stem from the unprecedented jump in crude oil prices which, in our view, could dent infrastructure spending this year. Based on the set of orders announced by the company, L&T's direct exposure to government spending is about 7% and indirect exposure through government-owned companies is about 26%. A part of this order book could be at risk.

Figure 166: Government/government companies account for 1/3 of the order book

	Total of all orders received between FY06-08 (INR BN)	% of order to total order inflows
Government	66	7%
Government companies	244	26%
Sub total (A)	**310**	**33%**
Private	462	48%
International - Middle East	139	15%
International	42	4%
Sub total (B)	**643**	**67%**
Total (A) + (B)	**953**	**100%**

Source: Deutsche Bank, Company

44% of announced order inflows in the last 18 months were from the steel, real estate and refinery sectors.

Any risk from commodity and real estate exposure?

Historically, most defaults from customers have been in the steel sector. If we analyze order inflows over the last 18 months, we would find that 17% of the orders are from real estate. This ratio would be much higher if we were to look at order inflows over the last two quarters. We are not complaining about the quality of developers. However, the real estate sector would be at high risk if the interest rate cycle was to turn adverse. Also, the quarterly results of the non-integrated steel companies were far below expectations and profitability of the sector is below the cyclical peak. This places some risk on the steel projects -- especially if there is private sector exposure. Lastly, the oil and gas downstream sector continues to be plagued by controls on diesel and petrol prices. We believe that given the rising interest rates, there could be some risk of project delays in this space.

Figure 167: 44% of announced order inflows from steel, real estate and refinery sectors

	INR bn	%
Steel	59	12%
Oil and gas - upstream	*34*	*7%*
Oil and gas - downstream	*39*	*8%*
Oil and gas	73	15%
Real Estate	84	17%
Sub - total	**216**	**44%**
Others	285	56%
Total announced orders	**501**	**100%**

Source: Deutsche Bank, Company

Implementation may turn out to be a big risk

If revenues fall 10% vs. our estimates, EPS estimates would fall by 10% but more importantly FCF yield could drop by as much as 22 bps.

Management has continued with its guidance of good progress in implementation with a few projects actually running ahead of schedule. Our sensitivity analysis shows that if project implementation suffers and revenues are 10% below expectations, our EPS estimates would fall by 10%. More importantly, FCF yield could drop by as much as 22 bps. A 1% drop in margins could impact earnings by 7%. But FCF yield could drop by 33 bps. A working capital cycle which is 10 days longer than we assume could impact FCF yield by 165 bps.

Figure 168: Sensitivity analysis

	FY09e				FY10e			
	Sales	EBITDA	PAT	FCF Yield	Sales	EBITDA	PAT	FCF Yield
Base Case estimates (INR mn)	**296249**	**36615**	**27875**	**-2.9%**	**360316**	**45309**	**30735**	**-1.1%**
Sensitivity to revenue recognition cycle								
10% higher than our estimates	325588	40586	30616	-2.7%	396629	50216	34120	-0.9%
Change(%)-y-o-y	9.9	10.8	9.8	22	10.1	10.8	11.0	10
10% lower than estimates	266909	32644	25135	-3.1%	324002	40401	27348	-1.2%
Change(%)-y-o-y	-9.9	-10.8	-9.8	(22)	-10.1	-10.8	-11.0	(10)
Sensitivity to profit recognition cycle								
Margins 1% lower than estimates	296249	39578	29919	-2.6%	360316	48912	33221	-0.7%
Change(%)-y-o-y	0	8	7	33	0	8	8	40
Margins 1% higher than estimates	296249	33653	25831	-3.3%	360316	41706	28248	-1.4%
Change(%)-y-o-y	0	-8	-7	(33)	0	-8	-8	(40)
Sensitivity to working capital cycle								
10 days shorter working capital cycle	296249	36615	27875	-1.3%	360316	45309	30735	-0.7%
Change(%)-y-o-y	0	0	0	165	0	0	0	36
10 days longer working capital cycle	296249	36615	27875	-4.6%	360316	45309	30735	-1.4%
Change(%)-y-o-y	0	0	0	(165)	0	0	0	(36)

Source: Deutsche Bank

International subsidiaries earnings upside pushed back

Key international subsidiaries could continue to work at near to breakeven levels.

A look at the key international subsidiaries shows that these companies could continue to work at near to breakeven levels for the next few years.

Figure 169: Earnings from international subsidiaries

	FY06	FY07	FY08e	FY09e	FY10e
L&T Oman	140	254	410	578	539
L&T Qatar	(22)	(107)	(55)	65	180
L&T Electromech	74	74	90	241	294
L&T International FZE	491	1178	(4207)	(1624)	837
L&T Saudi Arabia	(94)	(194)	(194)	15	84
Other subsidiaries	0	0	100	300	500
Total	**589**	**1205**	**(3856)**	**(424)**	**2435**

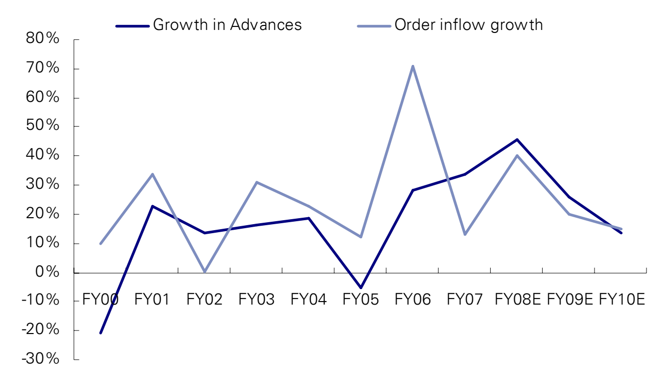
Source: Deutsche Bank, Company

L&T International FZE profit and loss should be added to the earnings from the E&C division of the standalone business. A loss in L&T International business implies that E&C margins should contract while in the case of gains, the E&C margins should expand.

Could operating FCF suffer?

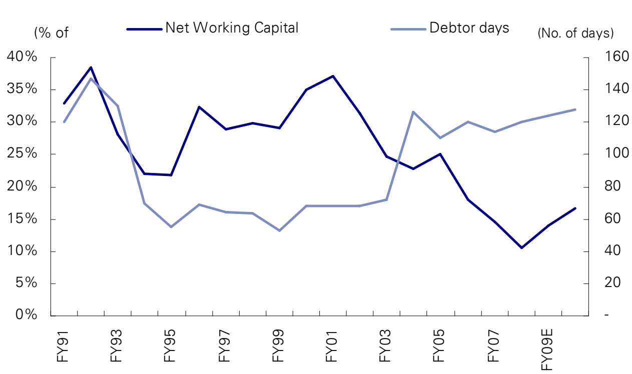
A slowdown in order inflows has an impact on advances from customers. By and large, most orders have a 10% advance payment. While Q1FY09 order inflows have been quite good, we expect this momentum to slow down sooner rather than later.

Figure 170: Slowdown in advances from customers…



Source: Deutsche Bank, Company

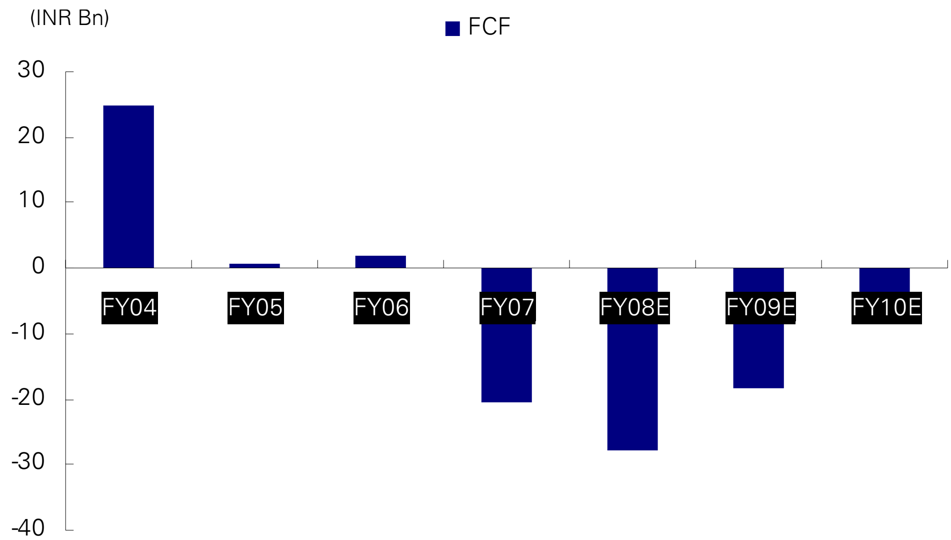
Figure 171: …and increase in debtor days increase NWC…



Source: Deutsche Bank, Company

We have assumed a marginal rise in debtor days. This has taken the net working capital as a percentage of sales from 9% to 14%. Our assumptions do not factor in as many problems in receivables as seen in the last down-cycle. Our belief is that the risk management systems of the company should kick in if net working capital were to rise -- when net working capital reaches 14% of sales, FCFs of the company turn negative. However, the net impact would depend on the severity of the down-cycle.

Figure 172: …resulting in FCF turning negative



Source: Deutsche Bank, Company

We forecast a cyclical downturn

Assumptions

Our important assumptions are: (1) a slowdown in order inflow growth momemtum, (2) moderation of growth in revenues from challenges in execution and the impact of the downcycle, and (3) an 80 bps cut in our E&C margin forecast for FY08e. This is slightly below guidance as management maintains that they will able to improve the margins from FY08e levels.

Figure 173: Changes in assumptions

	FY09e			FY10e		
	Old Estimates	New Estimates	% chg	Old Estimates	New Estimates	% chg
Order inflow (E&C) - INR bn	442	425	(4)	509	488	(4)
Order book (E&C) - INR bn	690	692	0	872	890	2
Revenues (INR Mn)						
E&C	261583	242207	(7)	326979	290648	(11)
EEG	32547	32547	0	42311	42311	0
MIP	32547	31342	(4)	42311	39177	(7)
Others	3268	3268	0	3922	3922	0
EBITDA Margins						
E&C	12.0	12.0	0	12.0	12.0	0
EEG	17.1	17.1	0	17.1	17.1	0
MIP	18.8	18.8	0	18.8	18.3	(50)
Others	13.7	13.7	0	13.7	13.7	0

Source: Deutsche Bank

Forecasts

Based on our assumptions we now forecast net sales CAGR of 20.4% driving EBITDA growth of 26.4% and net income growth of 20.7%. RoE looks to have peaked and we now forecast RoE to drop by ~ 420 bps over the next two years.

Figure 174: Standalone forecasts at a glance

INR mn	FY09E			FY10E		
	Old Estimates	New Estimates	% chg	Old Estimates	New Estimates	% chg
Sales	315,932	296,249	(6)	398,055	360,316	(9)
EBITDA	37,109	36,615	(1)	47,336	45,309	(4)
EBIT	34,243	33,749	(1)	43,570	41,543	(5)
PAT	27,714	25,475	(8)	34,790	30,735	(12)
EPS (INR/share))	96	88	(8)	120	106	(12)
ROE #	29	26.9	(185)	28	25.2	(236)
ROCE #	24	22.9	(96)	26	23.4	(234)

Source: Deutsche Bank, #change in bps

On a consolidated basis, the major change from our earlier forecast is in the E&C division. According to our estimates E&C business contribution to net profit is likely to fall below 50% in FY10e.

Figure 175: Contribution to net profit from various business segments

INR bn	FY08e	FY09e	FY10e
Long Cycle E&C	15.5	19.8	21.5
Short Cycle non E&C			
MIP+EE+Others	6.2	8.1	9.3
Manufacturing	0.2	0.1	0.1
Power	0.4	0.1	0.1
International	(4.0)	(0.7)	2.0
Share of associates profit	1.4	1.7	2.1
Sub total	**4.1**	**9.3**	**13.7**
Finance	1.7	2.1	2.7
Infotech	2.1	2.6	3.3
Developer business	0.3	0.9	0.3
Total	**23.7**	**34.8**	**41.4**

Source: Deutsche Bank

Our earnings estimates are largely in line with consensus.

Figure 176: DBe vs. Consensus

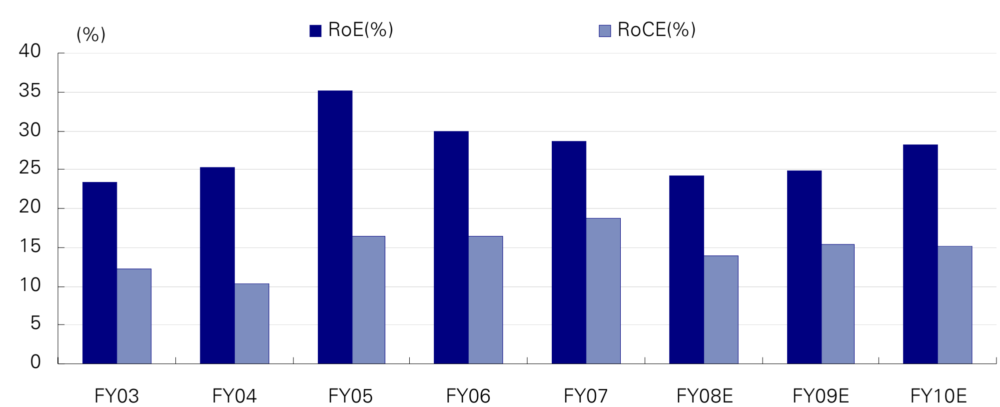
	-----------------FY09e --------------			---------------- FY10e ----------------		
	Consensus	**DB estimate**	**Change (%)**	**Consensus**	**DB estimate**	**Change (%)**
Revenues (INR bn)	354	354	(0.0)	458	445	(2.7)
EBITDA (INR bn)	47	52	10.6	61	70	15.0
EPS (INR/sh)	105	108	3.2	134	146	8.7

Source: Deutsche Bank, Bloomberg

RoE and RoCE appear to have peaked

On a consolidated basis, the drop in proportion of E&C sales and turnaround in L&T FZE have meant that our ROE forecasts have risen marginally. Our forecast RoCE remains at about 15%. Considering that L&T has a large unexecuted order book, the return ratios should have improved.

Figure 177: RoE



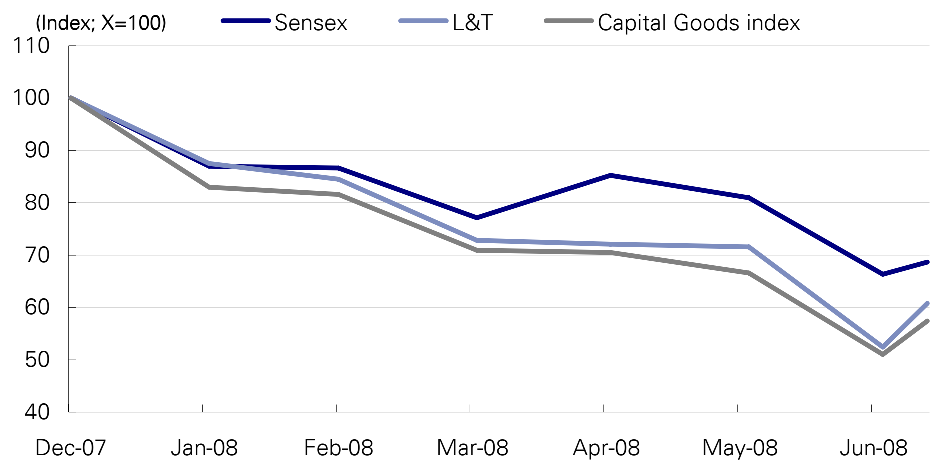
Source: Deutsche Bank, Company

Wait till it becomes a bit cheaper

Stock has underperformed markets

Over the last three months, L&T (along with the DB capital goods index) has underperformed the broader market

Figure 178: L&T has underperformed the Sensex

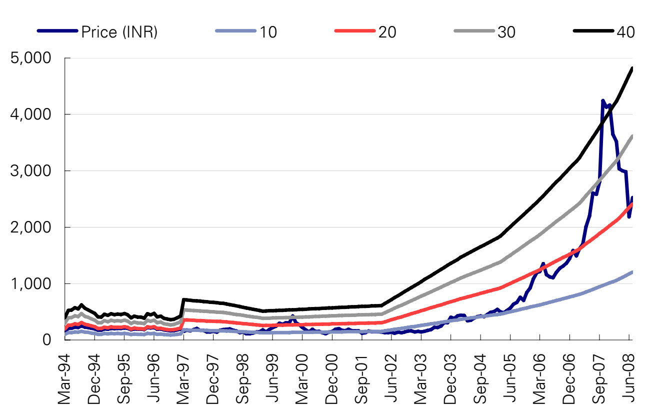


Source: Deutsche Bank, Bloomberg

Trading in the mid-range of trading bands

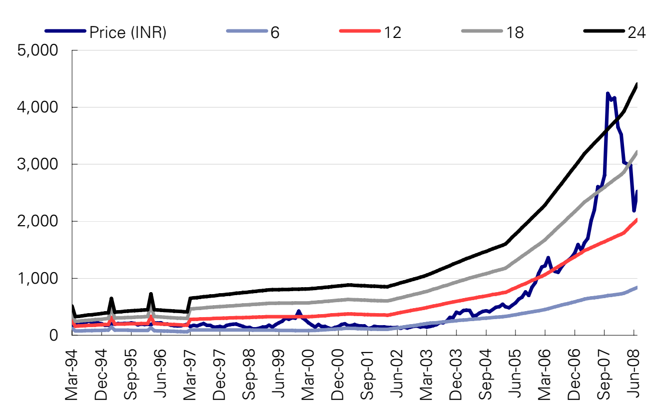
While we believe that most of the concern is behind us, we still believe that there could be some more downside. The stock is still trading at mid-cycle levels and, in our opinion, does not factor in the impending cyclical slowdown.

Figure 179: One-year forward PE band



Source: Deutsche Bank, Bloomberg

Figure 180: One-year forward EV/EBITDA band



Source: Deutsche Bank, Bloomberg

Our SOTP gives a target price of INR2000/sh downside

Based on our new forecast, we have revised our 12-month target price to INR2000/share (-18% potential downside from current levels). Our valuations are based on a SOTP and target PE multiple of consolidated earnings. The key drivers of valuation are:

1) We value L&T's long-cycle E&C business at a P/E of about 14.5x FY10e. This is at a 10% discount to BHEL. L&T has an inferior FCF yield and RoE to BHEL.

2) The short-cycle non-E&C engineering business is comparable to those of ABB India and Siemens India. However, L&T's return ratios are lower and its business is protected by fewer entry barriers than Siemens and ABB. Accordingly, we value this segment at roughly a 10% discount to ABB i.e. at a P/E of 16x FY10e earnings.

3) We value L&T IDPL's investments as the sum of L&T's effective share of NPVs at a 15% cost of equity.

4) We value the software division in line with its peers at a P/E of 14x FY10e earnings.

5) We value L&T Finance, along with L&T Infra Finance, at a P/BV of 1.5x FY10e.

This gives a SOTP valuation of INR2,000/sh, implying a consolidated P/E of 14x FY10e.

Figure 181: SOTP using cyclical multiples

Segments	FY10e PAT (INR bn)	BV (INR bn)	Valuation measure	Market cap (INR bn)	Value /sh (INR)	Remarks
Long cycle engineering business	21.5		14.5x PER FY10e	311	1069	10% discount to the target multiple for BHEL
Short cycle non-E&C business	13.7		16x PER FY10e	222	761	In line with the target multiple for ABB
Software company	3.3		At 14x PER for FY10e	46	157	Comparable to peers
Finance Company	2.7	25	At 1.5x P/B for FY10e	38	130	Comparable to peers
L&T IDPL	0.3		NPV	28	96	L&T's effective share of NPV
Add: Value of 11.5% stake in Ultratech			Stake in Ultratech	10	36	At target price of Ultratech
Equity value				**655**	**2249**	
Less Conglomerate Discount				10%	10%	
Target price of L&T (rounded off)				**589**	**2000**	.

Source: Deutsche Bank

Valuing each vertical individually and then using SOTP gives us a fair value of INR 1990/share.

Figure 182: SOTP using divisional multiples

Various business segments	FY10e EPS	FY10e BV/share	Valuation multiple	Per Share	Remarks
L&T _E&C	74		PER 14.5x FY10e	1069	At a 10% discount to BHEL
L&T-EBG	16		PER 16x FY10e	250	At a 10% discount to ABB India and Siemens India
L&T-Industrial machinery	15		PER 16x FY10e	241	At a 10% discount to ABB India and Siemens India
L&T-others	1		PER 16x FY10e	17	
L&T Service					
L&T-software	*11*		*PER 14x FY10e*	*157*	*In line with peers*
L&T-finance	*9*	*86*	*P/B 1.5x FY10e*	*130*	*In line with peers*
	20				
L&T-International	7		PER 10x FY10e	70	At a 30% discount to the core business as one of the main subsidiary is involved in only hedging activity
L&T-Power	1		PER 16x FY10e	8	At a 10% discount to ABB India and Siemens India
L&T-manufacturing	0		PER 16x FY10e	4	At a 10% discount to ABB India and Siemens India
L&T-associates (share of profits)	7		PER 18x FY10e	133	In line with ABB India and Siemens India as profitability is in line
L&T-IDPL	1		NPV	96	L&T's share of NPV at 15% CoE
Stake in Ultratech				36	At target price of Ultratech
Equity value				**2212**	
Less Conglomerate Discount				10%	
Target price of L&T				**1990**	

Source: Deutsche Bank

Can corporate restructuring drive up profits?

A well thought-out initiative

L&T is currently divided into five business segments: E&C, Financial Services, Electrical and Electronics, Machinery and Industrial products, and Information technology. We understand from press reports that the company proposes to realign the business segments into 13 verticals. Each vertical will be treated as an independent business unit and will compete for resources within L&T. For example, opportunities in roads and ports would be targeted by the vertical called "Heavy Civil" instead of involving both E&C and Financial Services. We regard this as a significant, positive strategic move that aims to tap into opportunities from the multifold growth we expect to see in infrastructure spending ensuring scalability we therefore believe that it makes sense to have a business structure aligned to these verticals.

As per the recent press reports, there are plans to split the E&C division into four companies, for which E&C will be the holding company. The functional restructuring came into effect on July 1 and the four divisions have begun to work independently.

Figure 183: Major revamp of the organization structure

		------------------------------ Existing organisation structure ----------------------------------						
		Engineering and construction			**Financial Services**	**Electrical & Electronic**	**MIP**	**IT**
	Sub segment	Construction	E&C Projects	Heavy Engineering				
	Currently headed by →	K.V. Rangaswami	K Venkatramanan	M. V. Kotwal	Y.M.Deosthalee	R. N. Mukhija	J.P.Nayak	V.K.Magapu
---------------Proposed Organization Structure ---------------	**Proposed Vertical ↓**							
	Building and Factories	☑						
	Hydrocarbon		☑	☑				
	Finance				☑			
	Shipbuilding			☑				
	Power	☑	☑					
	Heavy Civil	☑			☑			
	Construction and Industrial M/c						☑	
	Industrial Products						☑	
	Electrical and Electronics					☑		
	IT							☑
	Heavy Electrical	☑						
	Minerals and Metals	☑						
	Heavy Engineering			☑				
	----Any other vertical------------							

Source: Deutsche Bank, Press Reports

According to the company, it has appointed global consultants to suggest a path for creating such a structure. The obvious advantages of these changes would be:

- There would be more people responsible for P&L and customer focus. The reorganisation into 13 verticals from five business segments would create more P&L focus as each vertical would have internal targets and parameters to check efficiency levels. From a customer point of view, this would create more focused contact points and greater interaction, which would improve customer relations.

- If L&T has to grow its top line at 25%+ CAGR in next 3-5 years, it will face a serious talent crunch. As the biggest engineering player in India, L&T has suffered from the loss of skilled/fresh manpower to other emerging sector companies. We believe that the proposed restructuring would attract new talent, improve retention and encourage the development of existing human resources.
- We believe the company needs a change in actual functioning rather than simply a change in how financial information is reported. Only by undertaking such a move will the benefits of restructuring be fully realised. However, the implementation of this reorganisation in practice remains to be seen.

The key challenge in effecting this change is resource allocation – the cost of shared services such as HR, finance, etc. The impact on profits is difficult to predict, but costs would be significantly streamlined, ensuring a leaner and more focused organisation able to meet challenges in the business cycle.

Asia India
Industrials Manufacturing

18 July 2008

Siemens India Ltd

Reuters: **SIEM.BO**

Impact of slowdown yet to be felt

Holds a lot of promise; delivery model uncertain
The 55% stock price correction from the peak would imply that Siemens India's hardships are mostly behind us. However, we are not fully convinced that all the pain of poor earnings and cost overruns is over. Order inflows continue to lag compared with peers. The company continues to find the Indian market extremely price competitive, a problem not shared by its MNC peer group. Accordingly, a target of 25% revenue growth over FY08-10e may be a challenge. Based on our revised estimates, we cut TP to INR420/sh.

Portfolio of products to cater to down-cycle
Siemens India has a range of products in power and automation systems which match that of ABB. The issue with Siemens India has been its delivery model, which at times has suffered from cost overruns and inferior margins. The order book is down 13% since Dec-06 (while ABB's order book is up 66%).

Our expectations are lower than management's guidance
Based on revenue growth CAGR of 20%, we estimate a 26% EPS CAGR for FY07-09e. However the FCF yield is currently negative and we do not expect significant improvement in the forecast period either.

TP cut to INR420/share (11% downside); mega orders a key risk
Our revised TP of INR420/sh is based on an SOTP valuation. We value the core power and automation business at an exit (down-cycle) PE of 16x FY09e, which is at 10% discount to ABB India. The key upside risks are huge order inflows driven by mega-orders from railways and power utilities; in addition, capacity expansion can help drive up indigenisation levels which can help margins. Key downside risk is continued earnings volatility.

Forecasts and ratios

Year End Sep 30	2006A	2007A	2008E	2009E	2010E
Sales (INRm)	60,322.6	93,224.7	**107,809.2**	135,062.9	175,378.3
EBITDA (INRm)	6,153.2	7,601.6	**8,301.3**	10,969.6	15,498.3
Reported NPAT (INRm)	3,825.8	6,928.5	**5,346.0**	7,686.2	10,277.4
Reported EPS FD(INR)	11.35	20.55	**15.86**	22.80	30.48
DB EPS FD(INR)	11.35	16.41	**15.86**	22.80	30.48
OLD DB EPS FD(INR)	11.35	16.41	**18.52**	26.28	34.12
% Change	0.0%	0.0%	**-14.4%**	-13.3%	-10.7%
DB EPS growth (%)	23.7	44.6	**-3.4**	43.8	33.7
PER (x)	39.0	36.8	**29.8**	20.7	15.5
EV/EBITDA (x)	22.0	25.4	**18.8**	14.7	10.6

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

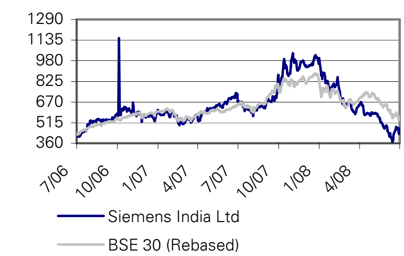
Sell

Price at 17 Jul 2008 (INR)	**472.00**
Price target - 12mth (INR)	**420.00**
52-week range (INR)	**1,035.68 - 369.90**
BSE 30	**13,112**

Key changes

Rating	Hold to Sell ↓	
Price target	580.00 to 420.00 ↓	**-27.6%**
Sales (FYE)	113,809 to 107,809 ↓	**-5.3%**
Op prof margin (FYE)	3.9 to 5.9 ↑	**52.5%**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-4.9*	*-27.4*	*-30.2*
BSE 30	*-16.5*	*-20.4*	*-14.2*

Stock data

Market cap (INRm)	**159,140**
Market cap (USDm)	**3,716**
Shares outstanding (m)	**337.2**
Major shareholders	**Siemens AG (55.18%)**
Free float (%)	**45**
Avg daily value traded (USDm)	**11.5**

Key indicators (FY1)

ROE (%)	**28.0**
Net debt/equity (%)	**-5.5**
Book value/share (INR)	**59.04**
Price/book (x)	**8.0**
Net interest cover (x)	**–**
Operating profit margin (%)	**5.9**

Infrastructure Research Team

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:10 July 2008

Running the numbers

Asia

India

Manufacturing

Siemens India Ltd

Reuters: SIEM.BO Bloomberg: SIEM IN

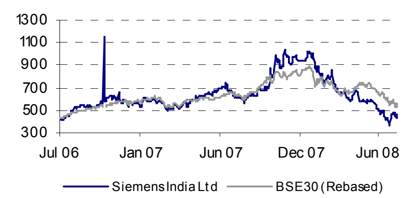
Sell

Price (17 Jul 08)	INR 472.00
Target price	INR 420.00
52-week Range	INR 369.90 - 1,035.68
Market Cap (m)	INRm 159,140 USDm 3,716

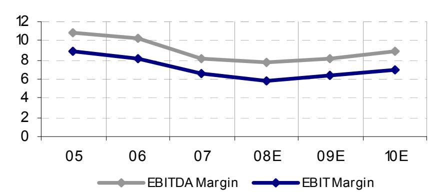
Company Profile

Siemens India Ltd is the Indian subsidiary of the Siemens group. It has a major portion of its standalone business in power and automation technology. The company also has a few subsidiaries catering to the medical electronics and information systems segments.

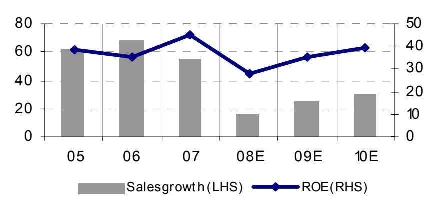
Price Performance



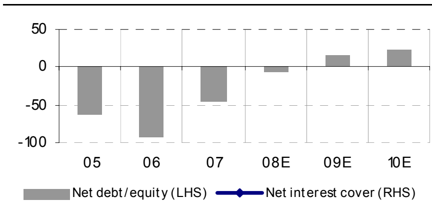
Margin Trends



Growth & Profitability



Solvency



Manish Saxena
+91 22 6658 4034 manish.saxena@db.com

Fiscal year end 30-Sep	2005	2006	2007	2008E	2009E	2010E
Financial Summary						
DB EPS (INR)	9.17	11.35	16.41	15.86	22.80	30.48
Reported EPS (INR)	9.17	11.35	20.55	15.86	22.80	30.48
DPS (INR)	1.43	1.90	2.40	10.00	12.00	12.00
BVPS (INR)	27.2	36.8	54.3	59.0	69.0	87.1
Weighted average shares (m)	337	337	337	337	337	337
Average market cap (INRm)	58,574	149,081	203,393	159,140	159,140	159,140
Enterprise value (INRm)	52,014	135,406	193,277	156,165	160,958	163,692
Valuation Metrics						
P/E (DB) (x)	18.9	39.0	36.8	29.8	20.7	15.5
P/E (Reported) (x)	18.9	39.0	29.4	29.8	20.7	15.5
P/BV (x)	9.64	14.59	12.45	8.00	6.84	5.42
FCF Yield (%)	1.2	5.2	nm	nm	nm	1.1
Dividend Yield (%)	0.8	0.4	0.4	2.1	2.5	2.5
EV/Sales (x)	1.4	2.2	2.1	1.4	1.2	0.9
EV/EBITDA (x)	13.4	22.0	25.4	18.8	14.7	10.6
EV/EBIT (x)	16.3	27.7	31.2	24.6	18.9	13.3
Income Statement (INRm)						
Sales revenue	**35,938**	**60,323**	**93,225**	**107,809**	**135,063**	**175,378**
Gross profit	**35,938**	**60,323**	**93,225**	**107,809**	**135,063**	**175,378**
EBITDA	**3,876**	**6,153**	**7,602**	**8,301**	**10,970**	**15,498**
Depreciation	684	1,259	1,403	1,941	2,431	3,157
Amortisation	0	0	0	0	0	0
EBIT	**3,191**	**4,894**	**6,198**	**6,361**	**8,539**	**12,341**
Net interest income(expense)	265	389	542	389	389	389
Associates/affiliates	22	40	78	49	84	0
Exceptionals/extraordinaries	0	0	2,083	0	0	0
Other pre-tax income/(expense)	1,050	461	1,046	1,448	2,047	2,084
Profit before tax	**4,506**	**5,744**	**7,786**	**8,197**	**10,975**	**14,814**
Income tax expense	1,428	1,955	3,007	2,816	3,259	4,395
Minorities	9	4	11	84	114	142
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	**3,092**	**3,826**	**6,929**	**5,346**	**7,686**	**10,277**
DB adjustments (including dilution)	0	0	-1,396	0	0	0
DB Net profit	**3,092**	**3,826**	**5,533**	**5,346**	**7,686**	**10,277**
Cash Flow (INRm)						
Cash flow from operations	**3,496**	**10,908**	**-954**	**418**	**4,635**	**4,722**
Net Capex	-2,767	-3,193	-3,375	-4,000	-5,000	-3,000
Free cash flow	**729**	**7,715**	**-4,329**	**-3,582**	**-365**	**1,722**
Equity raised/(bought back)	0	6	0	337	0	0
Dividends paid	-662	-895	-1,016	-3,742	-4,314	-4,314
Net inc/(dec) in borrowings	897	-906	1	923	4,002	2,000
Other investing/financing cash flows	-629	-1,048	217	-43	-29	-25
Net cash flow	**335**	**4,873**	**-5,127**	**-6,106**	**-706**	**-617**
Change in working capital	*0*	*0*	*0*	*0*	*0*	*0*
Balance Sheet (INRm)						
Cash and other liquid assets	6,745	11,618	8,570	2,064	1,271	537
Tangible fixed assets	4,743	6,677	8,649	10,708	13,277	13,120
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	847	2,138	1,943	1,943	1,943	1,943
Other assets	17,920	26,004	39,954	53,895	67,431	87,672
Total assets	**30,255**	**46,437**	**59,115**	**68,610**	**83,923**	**103,272**
Interest bearing debt	961	40	317	961	4,961	6,961
Other liabilities	20,044	33,963	40,417	47,673	55,613	66,881
Total liabilities	**21,005**	**34,003**	**40,734**	**48,634**	**60,573**	**73,841**
Shareholders' equity	9,179	12,393	18,301	19,905	23,277	29,358
Minorities	72	40	80	72	72	72
Total shareholders' equity	**9,251**	**12,433**	**18,381**	**19,977**	**23,349**	**29,431**
Net debt	*-5,785*	*-11,578*	*-8,253*	*-1,103*	*3,689*	*6,424*
Key Company Metrics						
Sales growth (%)	62.2	67.8	54.5	15.6	25.3	29.8
DB EPS growth (%)	82.5	23.7	44.6	-3.4	43.8	33.7
EBITDA Margin (%)	10.8	10.2	8.2	7.7	8.1	8.8
EBIT Margin (%)	8.9	8.1	6.6	5.9	6.3	7.0
Payout ratio (%)	15.5	16.7	11.7	63.1	52.6	39.4
ROE (%)	38.2	35.5	45.1	28.0	35.6	39.1
Capex/sales (%)	7.7	5.3	3.6	3.7	3.7	1.7
Capex/depreciation (x)	4.0	2.5	2.4	2.1	2.1	1.0
Net debt/equity (%)	-62.5	-93.1	-44.9	-5.5	15.8	21.8
Net interest cover (x)	nm	nm	nm	nm	nm	nm

Source: Company data, Deutsche Bank estimates

Investment thesis

Outlook

We rate Siemens India a Sell, with a revised TP of INR 420/share. Based on our revised sector outlook of a slowing investment pipeline in India, we have trimmed our order inflow expectations and earnings. We now forecast an EPS CAGR of 26% for FY07-09e. A flat order book for the past six quarters, coupled with volatility in both earnings and margins, raises questions over the company's strategy to rely on mega orders. Cost overruns in some of the orders were also visible in Q2FY08e, which necessitated taking losses on those orders. We expect the quality of earnings to deteriorate with rising debtor days, rising net working capital, and very low (or, in the worst case, negative) FCF yield. What is more intriguing is that the company continues to find the Indian market extremely competitive, a problem not shared by its peers.

Valuation

Siemens India derives 65-70% of earnings from engineering, and the remaining earnings from software-based applications. We have valued Siemens India's engineering business at a P/E of 16x FY09e earnings due to the following:

- A 10% discount to ABB's PE multiple as Siemens India's stock suffers from a much higher risk of volatility in quarterly earnings and lower predictability of margins. Siemens is unlikely to introduce high technology products in the automation and T&D sectors because they find Indian market price sensitive.
- Like China, India is seen as an important country for the company's future growth; it is likely that Siemens India may get an increasing share of new orders.

We value the software business at a P/E of 14x FY09e. The earnings of the software business are likely to grow at a 17% CAGR over the next two years. Based on our new estimates, SOTP value is INR420/share.

Risks

The key risk is huge order inflows due to the mega orders from railways and power utilities. In addition; capacity expansion can help drive indigenisation levels, which could help margins. Also, in hindsight, if contractual risks for new orders are low, the risk of earnings volatility is also lowered.

Assumptions and valuation

Earnings expectations lowered by 13%

Figure 184 summarises our change in assumptions. Based on our sector outlook, we have cut our order inflow estimates by 13-28%. Also, due to our outlook, and to factor in the slowdown in execution, we have lowered our revenue estimates by 5-8%. Our earnings estimates are lowered by 13-14%.

Figure 184: Key changes in our assumptions

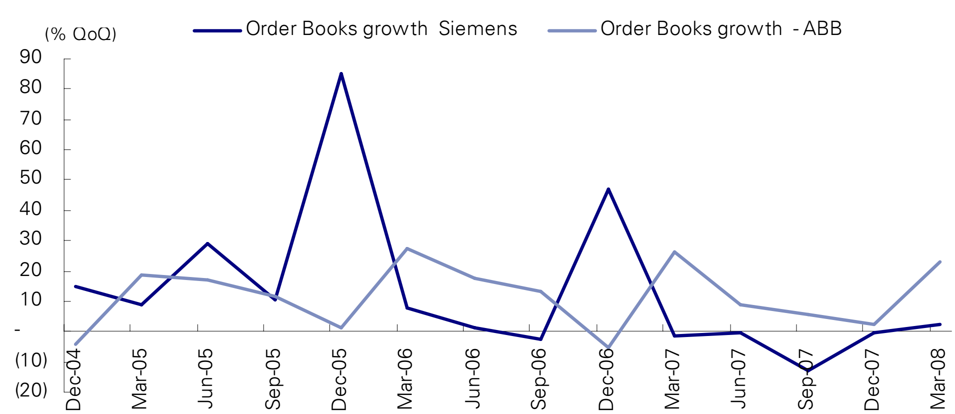
	Old Estimates	New Estimates	Chg(%) & Variance(bps)	Old Estimates	New Estimates	Chg(%) & Variance(bps)
Assumptions	**FY08E**	**FY08E**	**FY08E**	**FY09E**	**FY09E**	**FY09E**
Order Inflow	151,605	131,391	(13.3)	219,827	157,669	(28.3)
Order Backlog	146,503	132,729	(9.4)	237,542	174,478	(26.5)
RM/Sales	71.5%	71.5%	0	71.0%	72.1%	110
Forecast						
Sales (INR mn)	113,809	107,809	(5.3)	147,463	135,063	(8.4)
EBITDA	9,548	9,599	0.5	14,612	12,867	(11.9)
EBIT	7,151	7,658	7.1	11,506	10,436	(9.3)
PAT	6,243	5,346	(14.4)	8,862	7,686	(13.3)
EPS	18.5	15.9	(14.4)	26.3	22.8	(13.3)
ROE	32	28	-393bps	38	35	-280bps
ROCE	23	21	-229bps	27	26	-98bps

Source: Deutsche Bank

Mega orders and cost overruns make for volatile earnings

The order book for Siemens India has been virtually stagnant since Dec-06. Compare this with ABB India, which has registered ~65% growth in its order book over the same period. This can be partly explained by Siemens India's reliance on mega orders.

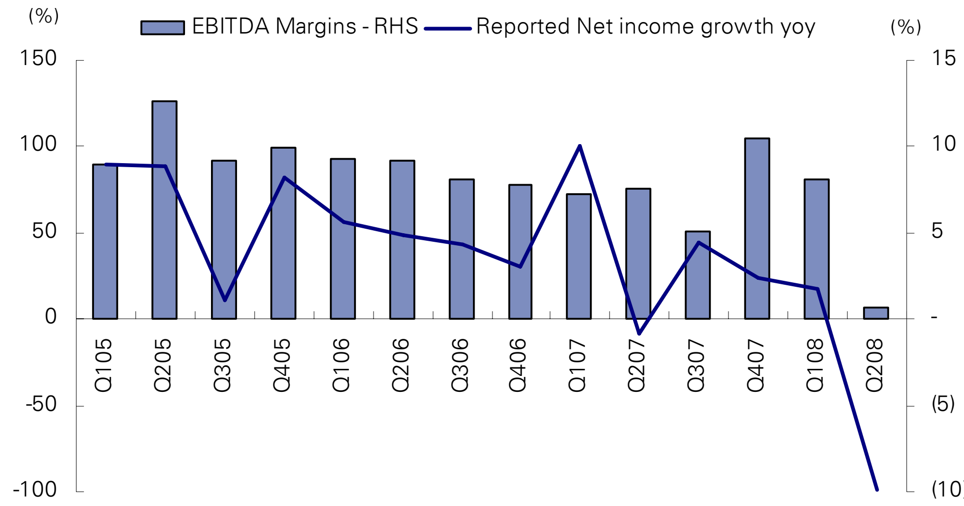
Figure 185: Flat order book



Source: Deutsche Bank

As a consequence of reliance on mega orders and cost overruns in some of the orders, Siemens India's quarterly earnings have been quite volatile, especially over the last two years.

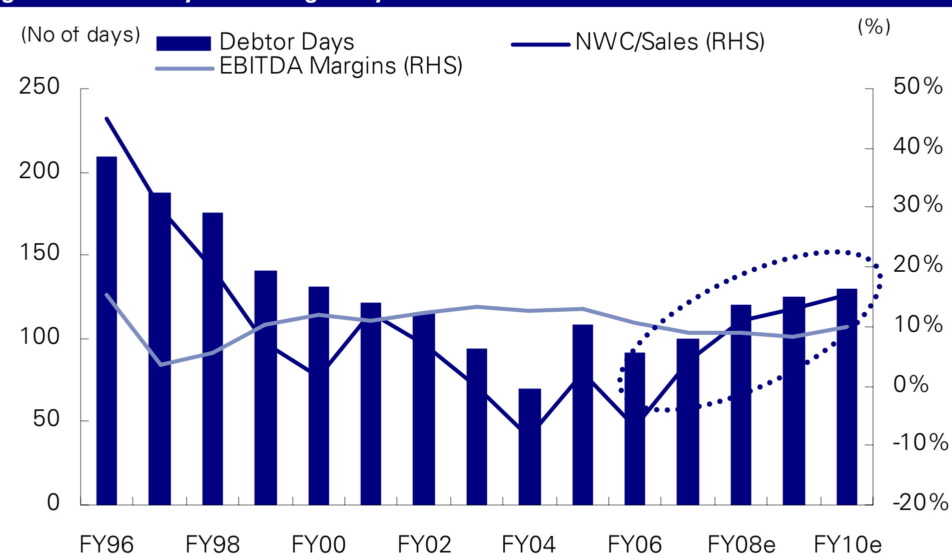
Figure 186: Volatile earnings and margins



Source: Deutsche Bank, Company

We believe that quality of earnings is more important than earnings growth (26% CAGR for FY07-09e in the case of Siemens India). We expect increases in debtor days and net working capital, though margins may not indicate much pressure. Note that the first signs of deterioration in earnings quality were visible in balance sheet for 2007 (year ending Sept). Debtor days increased by ~10 days, creditor days declined by 50 days, and FCF turned negative (even at the operating level). We prefer ABB India over Siemens India, as our stress test on FCF yield reveals that ABB India is better placed to withstand the economic down-cycle (see "Pair trade ideas" section of the sector note).

Figure 187: Quality of earnings may deteriorate



Source: Deutsche Bank, Company

Valuation

Siemens India derives 65-70% of earnings from engineering, while software-based business account for the rest. We have valued Siemens India's engineering business at a P/E of 16x FY09e earnings due to the following:

- This is roughly a 10% discount to ABB, as Siemens India's stock price suffers from a much higher risk of volatility in quarterly earnings and a lower predictability of margins. Siemens is unlikely to introduce high technology products in the automation and T&D sectors, as they find India's market quite price sensitive.
- Like China, India is seen as an important country for the company's future growth; it is likely that Siemens India may get an increasing share of new orders.

The software business has been valued at a P/E of 14x FY09e. The earnings of software business are likely to grow at a 17% CAGR over the next two years. Based on our new estimates, our sum-of-the-parts value is INR 420/share.

Figure 188: SOTP

Business	Benchmark	Equity value in INR mn	Value/share (INR)
Power and Automation business	Valued at 16xPER for FY09e(sep)	114,027	338
SISL	14x PER FY09e(Sep)	29,109	86
Other division	10x PER FY09e(Sep)	4,616	14
Sub-total		**147,751**	**438**
Conglomerate Discount		5%	5%
Potential value (Rounded off)		**140,364**	**420**

Source: Deutsche Bank

We have performed a sensitivity analysis on our earnings model with regards to changes in the revenue recognition cycle and profit margins.

- A 10% change in revenue would potentially impact the net income by 15% in FY09e.
- A 1% reduction in EBITDA margins vs. our estimate would lead to an increase of 18%.in net income for CY09e.
- A decrease in working capital cycle by 10 days leads to a 53bps increase in FCF yield.

Please note that in every negative sensitivity scenario, the FCF yield turns negative.

Figure 189: Sensitivity

	FY08e				FY09e			
	Sales	EBITDA	PAT	FCF Yield	Sales	EBITDA	PAT	FCF Yield
Base Case estimates (INR mn)	**107809**	**9599**	**5346**	**-2.4%**	**135063**	**12867**	**7686**	**-0.2%**
Sensitivity to Revenue								
10% higher than our estimates	118590	10559	6117	-1.7%	148569	14154	8852	0.3%
Change (%)-vis-à-vis base case estimate	10	10	14	74	10	10	15	53
10% lower than estimates	97028	8639	4575	-3.1%	121557	11580	6748	-0.7%
Change (%)-vis-à-vis base case estimate	(10)	(10)	(14)	(74)	(10)	(10)	(12)	(48)
Sensitivity to EBITDA margin								
100bps higher than our estimates	107809	10677	6431	-1.7%	135063	14218	9161	0.7%
Change (%)-vis-à-vis base case estimates	-	11	20	74	-	10	18	96
100bps lower than our estimates	107809	8521	4261	-3.1%	135063	11517	6439	-1.1%
Change (%)-vis-à-vis base case estimates	-	(11)	(20)	(74)	-	(10)	(18)	(91)
Working Capital cycle								
10 days lower than our estimates	107809	9599	5346	-0.4%	135063	12867	7686	0.3%
Change (%)-vis-à-vis base case estimates	-	-	-	200	-	-	-	53
10 days higher than our estimates	107,809	9,599	5,346	-4.4%	135063	12867	7686	-0.7%
Change (%)-vis-à-vis base case estimates	-	-	-	(200)	-	-	-	(48)

Source: Deutsche Bank

Asia India
Industrials Manufacturing

18 July 2008

Thermax Limited

Reuters: **THMX.BO**

Washed out from surge in coal price; downgrade to Sell

Demand erosion a serious risk; downgrade to Sell
This note marks the transfer of coverage to Deepak Agrawala. Our assessment of inquiries for new captive power plants shows there is a massive drop in demand as user industries (read buyers of Thermax products} adjust to the coal price shock. The stock has fallen 54% YTD, largely in line with other mid-cap capital goods companies. However, its valuation of 13.5x FY09e PER does not factor in the cyclical reversal and pain from high earnings volatility during a downcycle. Downgrade to Sell with TP INR270/sh (28% downside).

Thermax faces risk of demand destruction for new captive power plants
We believe the company faces a serious risk of declining new orders for coal-based captive power plants. At current level of coal prices (USD250/t CIF), the cost of generation from captive power plants is c. INR10.4/unit or 24 cents/unit. This cost of generation is about 50-70% higher than utility tariffs and therefore may not drive an investment decision unless the user industry is looking at a standby unit for power generation or has alternative fuel available at lower cost.

Possible downward risk to our estimates
Our estimates, already at the low-end of the street, are at risk from delays in execution. Considering its order book declined in Q4FY08 and the demand for key products is on a decline, it remains to be seen whether other divisions can offset weak demand in the power generation division.

Downgrade to Sell; sharp fall in coal price a key risk
Our TP is based on an exit P/E of 9x FY10e and DCF value. The PE multiple is broadly in line with comparative mid-cap capital goods peers. Also our DCF value assumes a COE of 15% and 3% terminal growth Key upside risk is fall in coal prices, and revival of demand for 500MW boilers when its capacity gets commissioned.

Forecasts and ratios

Year End Mar 31	2005A	2006A	**2007E**	2008E	2009E
Sales (INRm)	12,695.6	16,261.0	**23,266.4**	34,815.2	42,250.0
EBITDA (INRm)	1,048.0	1,767.5	**3,012.2**	4,266.7	5,217.9
Reported NPAT (INRm)	682.6	1,025.3	**2,060.6**	2,907.2	3,316.4
DB EPS FD(INR)	1.15	8.60	**17.29**	24.40	27.83
OLD DB EPS FD(INR)	1.15	8.60	**16.26**	25.61	33.03
% Change	0.0%	0.0%	**6.4%**	-4.7%	-15.7%
DB EPS growth (%)	-34.1	651.0	**101.0**	41.1	14.1
PER (x)	79.8	20.1	**21.7**	15.4	13.5
EV/EBITDA (x)	48.8	9.2	**12.7**	8.7	8.1

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

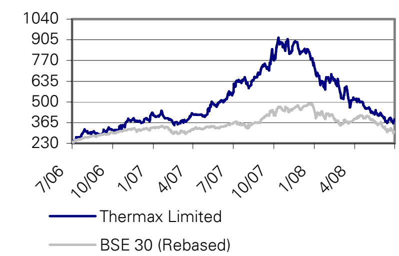
Sell

Price at 17 Jul 2008 (INR)	**375.60**
Price target - 12mth (INR)	**270.00**
52-week range (INR)	**918.30 - 359.90**
BSE 30	**13,112**

Key changes

Rating	Buy to Sell ↓	
Price target	1,080.00 to 270.00 ↓	**-75.0%**
Op prof margin (FYE)	11.6 to 12.1 ↑	**4.6%**
Net profit (FYE)	1,937.1 to 2,060.6 ↑	**6.4%**
Net profit (FYE)	3,052.1 to 2,886.2 ↓	**-5.4%**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-7.4*	*-25.5*	*-30.3*
BSE 30	*-15.0*	*-20.4*	*-14.3*

Stock data

Market cap (INRm)	**44,755**
Market cap (USDm)	**1,045**
Shares outstanding (m)	**119.2**
Major shareholders	**Promoters (61.98%)**
Free float (%)	**38**
Avg daily value traded (USDm)	**1.6**

Key indicators (FY1)

ROE (%)	**39.3**
Net debt/equity (%)	**-15.0**
Book value/share (INR)	**49.51**
Price/book (x)	**7.6**
Net interest cover (x)	**182.9**
Operating profit margin (%)	**12.1**

Infrastructure Research Team

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:10 July 2008

Running the numbers

Asia

India

Manufacturing

Thermax Limited

Reuters: THMX.BO Bloomberg: TMX IN

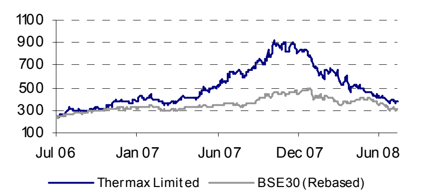
Sell

Price (17 Jul 08)	INR 375.60
Target price	INR 270.00
52-week Range	INR 359.90 - 918.30
Market Cap (m)	INRm 44,755 USDm 1,045

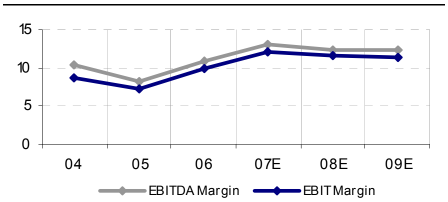
Company Profile

Thermax manufactures energy equipments and operates through various divisions manufacturing boilers, heat recovery generators, water treatment plants, air pollution equipment.

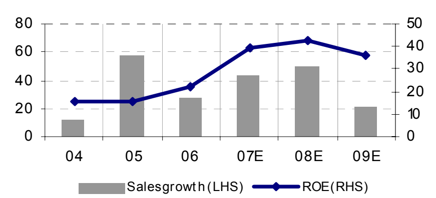
Price Performance



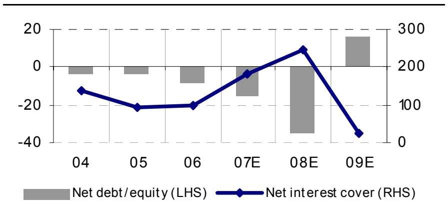
Margin Trends



Growth & Profitability



Solvency



Deepak Agrawala
+91 22 66584214 deepak-m.agrawala@db.com

Fiscal year end 31-Mar	2004	2005	2006	2007E	2008E	2009E
Financial Summary						
DB EPS (INR)	1.74	1.15	8.60	17.29	24.40	27.83
Reported EPS (INR)	1.74	1.15	8.60	17.29	24.40	27.83
DPS (INR)	2.40	2.40	3.40	6.00	8.00	3.00
BVPS (INR)	7.0	7.7	38.6	49.5	64.5	88.9
Weighted average shares (m)	357	596	119	119	119	119
Average market cap (INRm)	20,599	54,479	20,583	44,755	44,755	44,755
Enterprise value (INRm)	17,732	51,147	16,228	38,131	37,082	42,275
Valuation Metrics						
P/E (DB) (x)	33.1	79.8	20.1	21.7	15.4	13.5
P/E (Reported) (x)	33.1	79.8	20.1	21.7	15.4	13.5
P/BV (x)	10.68	15.50	8.08	7.59	5.82	4.23
FCF Yield (%)	3.2	1.6	10.4	6.8	4.9	nm
Dividend Yield (%)	4.2	2.6	2.0	1.6	2.1	0.8
EV/Sales (x)	2.2	4.0	1.0	1.6	1.1	1.0
EV/EBITDA (x)	21.4	48.8	9.2	12.7	8.7	8.1
EV/EBIT (x)	25.1	55.1	10.1	13.5	9.2	8.9
Income Statement (INRm)						
Sales revenue	**8,037**	**12,696**	**16,261**	**23,266**	**34,815**	**42,250**
Gross profit	**2,398**	**3,331**	**4,804**	**6,549**	**9,941**	**10,070**
EBITDA	**830**	**1,048**	**1,768**	**3,012**	**4,267**	**5,218**
Depreciation	123	119	160	195	232	448
Amortisation	0	0	0	0	0	0
EBIT	**707**	**929**	**1,608**	**2,817**	**4,035**	**4,770**
Net interest income(expense)	-5	-10	-16	-15	-17	-195
Associates/affiliates	0	0	0	0	0	0
Exceptionals/extraordinaries	-64	0	0	-55	21	0
Other pre-tax income/(expense)	249	118	137	360	439	219
Profit before tax	**887**	**1,037**	**1,728**	**3,107**	**4,478**	**4,794**
Income tax expense	232	365	703	1,046	1,571	1,477
Minorities	33	-11	0	0	0	0
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	**622**	**683**	**1,025**	**2,061**	**2,907**	**3,316**
DB adjustments (including dilution)	0	0	0	0	0	0
DB Net profit	**622**	**683**	**1,025**	**2,061**	**2,907**	**3,316**
Cash Flow (INRm)						
Cash flow from operations	**592**	**1,184**	**2,300**	**3,526**	**3,787**	**-275**
Net Capex	63	-315	-164	-461	-1,602	-4,500
Free cash flow	**654**	**869**	**2,135**	**3,065**	**2,185**	**-4,775**
Equity raised/(bought back)	0	0	0	0	0	0
Dividends paid	-1,464	-1,467	-530	-825	-1,115	-418
Net inc/(dec) in borrowings	80	-24	4	-48	-22	1,750
Other investing/financing cash flows	-443	-319	-785	-1,772	777	750
Net cash flow	**-1,173**	**-941**	**823**	**420**	**1,826**	**-2,693**
Change in working capital	*-34*	*368*	*1,090*	*1,313*	*627*	*-4,039*
Balance Sheet (INRm)						
Cash and other liquid assets	327	281	547	972	2,777	1,584
Tangible fixed assets	1,022	1,338	1,439	1,789	3,159	7,211
Goodwill/intangible assets	11	7	3	1	1	1
Associates/investments	2,865	3,184	3,970	5,741	4,964	4,214
Other assets	3,462	5,075	5,359	9,263	10,009	16,134
Total assets	**7,688**	**9,884**	**11,318**	**17,767**	**20,911**	**29,144**
Interest bearing debt	156	136	162	90	68	3,318
Other liabilities	3,207	5,187	6,562	11,778	13,151	15,236
Total liabilities	**3,363**	**5,323**	**6,724**	**11,868**	**13,219**	**18,554**
Shareholders' equity	4,156	4,565	4,594	5,900	7,691	10,590
Minorities	169	-3	0	0	0	0
Total shareholders' equity	**4,326**	**4,562**	**4,594**	**5,900**	**7,691**	**10,590**
Net debt	*-172*	*-145*	*-385*	*-883*	*-2,709*	*1,734*
Key Company Metrics						
Sales growth (%)	11.9	58.0	28.1	43.1	49.6	21.4
DB EPS growth (%)	-82.3	-34.1	651.0	101.0	41.1	14.1
EBITDA Margin (%)	10.3	8.3	10.9	12.9	12.3	12.3
EBIT Margin (%)	8.8	7.3	9.9	12.1	11.6	11.3
Payout ratio (%)	138.0	209.5	39.5	34.7	32.8	10.8
ROE (%)	15.5	15.7	22.4	39.3	42.8	36.3
Capex/sales (%)	0.0	2.5	1.0	2.0	4.6	10.7
Capex/depreciation (x)	0.0	2.6	1.0	2.4	6.9	10.0
Net debt/equity (%)	-4.0	-3.2	-8.4	-15.0	-35.2	16.4
Net interest cover (x)	135.9	95.8	99.9	182.9	244.5	24.5

Source: Company data, Deutsche Bank estimates

Investment thesis

Outlook

We downgrade Thermax to Sell with a TP of INR270/sh (-28% downside).

1. We are concerned about fresh order inflows for the boiler and captive power division, which accounts for 55-60% of the company's sales. This division is likely to experience a sharp slowdown due to a drop in demand for equipment as coal prices have hit a new high. At coal price of USD250/t, the cost of generation for captives is ~50-70% of grid tariff and many industries may prefer to switch to grid power to cut costs.
2. Thermax's environment division (20% of sales) can only partially offset the impact from drop in captive power orders. However, as we stated in our sector analysis[1], a slowdown in corporate capex could lead to trickle-down effect on the environment division.
3. We forecast an EPS CAGR of 11% over FY08-10e. These estimates are at the low-end of street and assume a top-line CAGR of 20% during FY08-10e. Working capital cycle would strain FCF yield, which we believe will turn negative 10% in FY09e from 3% in FY08e.
4. Our estimates indicate a significant fall in the RoE from 43% in FY08e to 22% in FY10e.
5. The company's venture into 500MW utility generation boiler is a good move in our view. However, by the time the unit is ready for manufacture, the demand in India for new boiler sets would have tapered off. This could result in higher overheads.
6. Thermax has traded in a PE band of 5-35x over the last 14 years. As we enter a downcycle with declining demand for captive power, we believe that valuations will have to be readjusted according to the downcycle multiples.

Valuation

Our target price of INR270/sh is based on a 1-yr forward P/E of 9x FY10e. We believe our multiple looks reasonable as we estimate earnings CAGR of 11% over FY08-10e implying a PEG of ~1 (Price-earnings to growth). Also, this multiple is in line with mid-cap industrial companies. A DCF methodology using cost of equity of 15% at a risk-free rate of 8.2% (in line with DB estimate), 4.7% risk premium (in line with DB estimate), beta of 1.4 (based on weekly stock prices from Bloomberg) and terminal free cash flow growth of 3% yields a value of INR270/sh.

Risks

Key upside risks are (1) Sharp drop in coal prices: If the landed price of coal goes below USD80/t, then the cost of generation from captives falls in line with the grid tariff. However, the real impact of higher orders from captives will only be felt in 2010, in our view. In such a scenario, if the revenue increases by 10% in FY10e vs our estimate, then EPS increase by 30% and free cash flow yield increases by ~100bps in FY10e. (2) On the utility side, the company is currently setting up facilities that will likely be operational in FY10e. If there is a reversal in cycle of investments in power generation equipment, there is a possibility of higher order inflows during 2HFY10e, which could drive up valuations. (3) Reduction in steel prices: Steel constitutes approximately 15% of the total raw material costs. If steel prices decline 10% from FY08e levels, then earnings could increase by 8% and free cash flow yield could increase by ~100bps in FY09e.

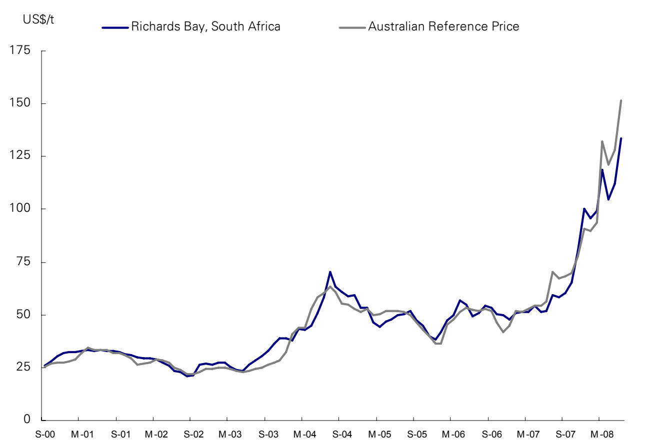
[1] As per our sector report titled "Don't wait till the music stops" dated Jul 18, 08

Coal price may dampen captive power demand

Coal prices have gone up significantly…

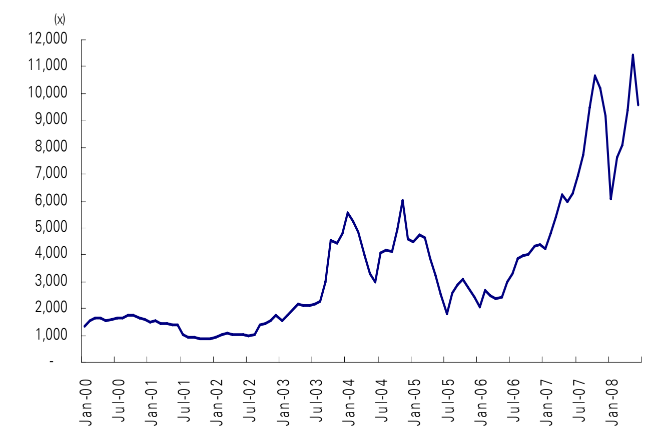
International coal prices continue to maintain upward momentum and are currently hovering around USD160/t. Even the Baltic Freight Index has shown a sharp reversal in trend since Jan08, when it retreated to the Nov04 levels (refer to Figure 190and Figure 191).

Figure 190: International coal prices are at historic highs



Source: Deutsche Bank, Bloomberg

Figure 191: Baltic Freight Index



Source: Deutsche Bank, Bloomberg

…raising the cost of generation from imported coal

A USD10/t rise in coal price can increase the cost of generation by ~30-35paise/unit (1 INR=100 paisa), assuming a capital cost of INR6m/MW, calorific value of coal at 5000kcal/kg and a station heat rate of 2800 kcal/kWh.

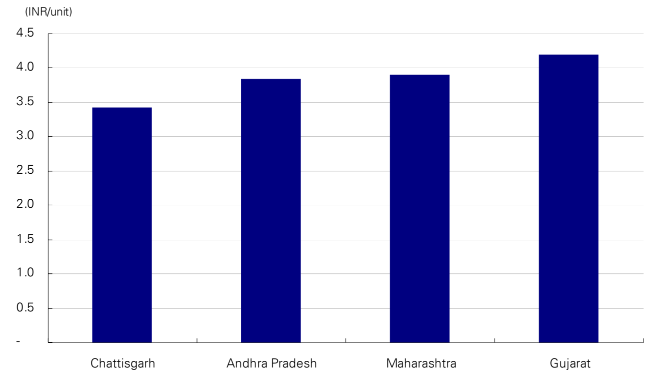
Figure 192: Impact of coal price on cost of generation

	FY06	FY07	FY08	FY09e (Scenario I)	FY09e (Scenario II)
FOB price of coal (USD/t)	45	50	80	160	185
Freight cost (USD/t)	30	40	80	80	100
Domestic handling (INR/t)	150	150	150	150	150
Coal Prices (INR/t)	**3,718**	**4,509**	**6,980**	**11,000**	**13,000**
Variable cost of generation (INR/unit)	2.7	3.3	5.8	8.5	10.0
Total cost of generation (INR/unit)	**4.5**	**5.1**	**7.6**	**10.4**	**11.9**

Source: Deutsche Bank

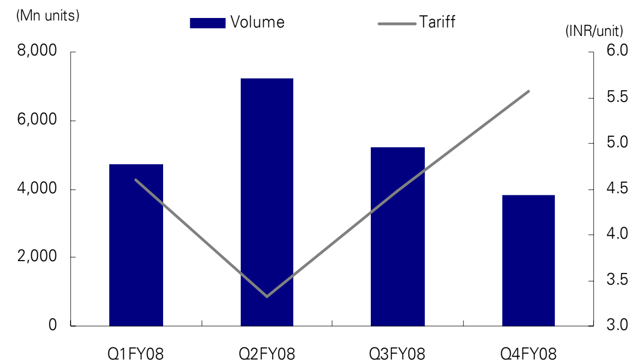
As shown in Figure 192, cost of generation from captive power plants using imported coal has increased to ~INR7.6/unit if we assume the landed cost of coal at USD175/t. Given the prevailing coal prices of USD160/t and freight at USD80/t (Scenario I in Figure 192), the cost of generation would rise to ~INR10.4/unit. This is ~50-70% of the prevailing industrial tariff in some of the industrialised states in the country. Even in the trading market, where part of the captive power is sold, the average merchant tariff is at a 40-50% discount to the captive power cost of generation at prevailing coal prices.

Figure 193: Industrial tariff in few states (FY08)



Source: Deutsche Bank, Tariff orders of individual states

Figure 194: Average trading tariff in last four quarters

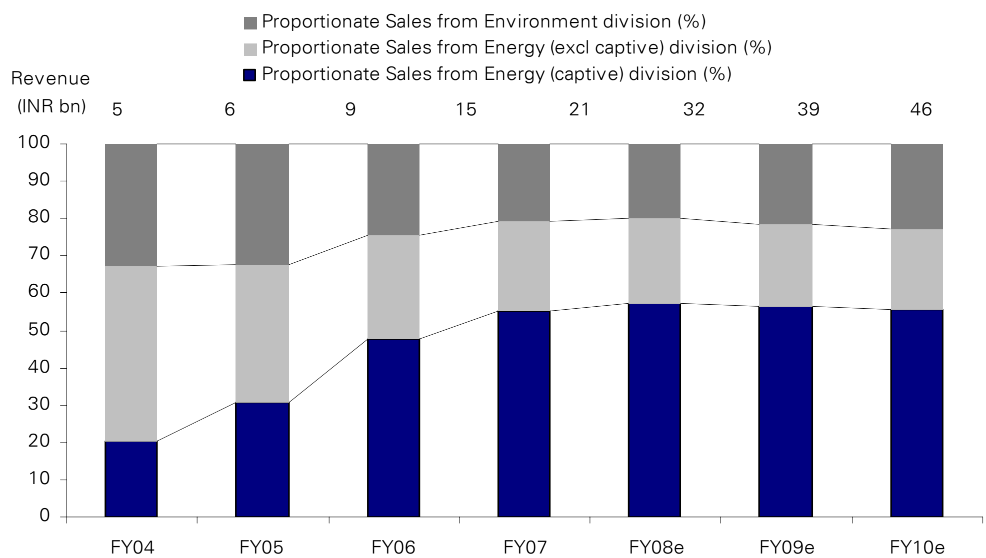


Source: Deutsche Bank, Central Electricity Regulatory Commission

…and would affect the captive power division of the company

The captive power plant division contributes ~60% to the overall revenue. Though the company caters to a diversified group of industries such as cement and steel, prevailing high coal prices have made captive power an expensive option vs the grid tariff. Hence, we expect a demand slowdown for new captive power plants. Thermax's environment division (20% of its sales) can only partially offset the drop in captive power orders. However, as we stated in our sectoral analysis[2], a slowdown in corporate capex could lead to trickle-down effect on this division also.

Figure 195: Captives form 60% of the business



Source: Deutsche Bank, Company data

[2] As per our sector report titled "Don't wait till the music stops" dated Jul 18, 08

Assumptions and forecast

Assumptions

Figure 196 shows the key assumptions made in our earnings model. We have assumed an order inflow CAGR of 17% over FY08-10e – much lower than the 43% CAGR that the company achieved during FY06-08. Based on this, we estimate revenue CAGR of 20% over FY08-10e (stand-alone) – a significant drop from 47% during FY06-08. On the cost side, we have assumed a 100bps increase in RM/sales in FY09e to factor in the higher raw material prices. Likewise, we assume employee expenses to increase by 25% in FY09e and FY10e. Based on these assumptions, we have estimated a flat EBITDA margin in FY09e and a marginal increase of ~40bps in FY10e.

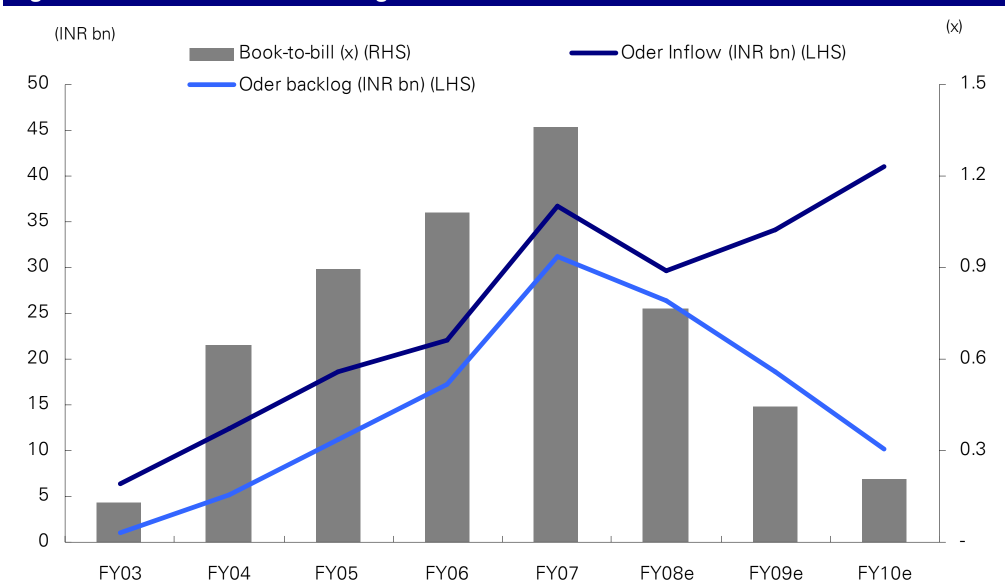
Figure 196: Key assumptions for the stand-alone business

	FY07	FY08e	FY09e	FY10e
Order Inflow (INR bn)	37	30	34	43
Order backlog (INR bn)	31	26	19	15
Revenue mix (Energy : Environment)	79 : 21	80 : 20	79 : 21	78 : 22
Revenue growth (% YoY)				
Energy	52	51	18	13
Environment	25	44	21	23
RM/sales (x)	66	68	69	67
Employees expenses (% YoY)	46	26	25	25
Other Operating expenses (% YoY)	27	40	25	26
Capital Expenditure (INR bn)	4	17	45	20
Debt : Equity (x)	NA	NA	0.3	0.5

Source: Deutsche Bank, Company data

Obviously, the book-to-bill ratio has taken a severe beating and is a lead indicator of the potential earnings downgrades.

Figure 197: Order inflow, backlog and book-to-bill



Source: Deutsche Bank, Company data

- We have assumed capex of INR45bn in FY09e and another INR20bn in FY10e towards the utility business that the company is entering into. We have assumed the cost of debt at 12%.

Financial forecast

At the stand-alone level, (see Figure 198) the income from operations is estimated to grow at 20% CAGR over FY08-10e. EBTIDA margin is estimated at 12.8% in FY09e (same as FY08) and 13.2% in FY10e. Accordingly, earnings are estimated to grow at 11% CAGR over FY08-10e.

Figure 198: Stand-alone financials

Year to March	FY07	FY08e	FY09e	FY10e
Income from operations	21,730	32,055	38,229	43,885
Raw materials	14,336	21,804	26,187	29,403
Employee expenses	1,911	2,411	3,020	3,783
Other manufacturing expenses	2,692	3,730	4,639	5,812
Total operating expenses	18,940	27,945	33,846	38,999
EBITDA	2,791	4,110	4,383	4,887
Depreciation and amortisation	188	218	415	640
EBIT	2,603	3,892	3,968	4,247
Interest expenses	13	13	13	45
Other income	370	405	246	289
Extraordinary items	55	(21)	-	-
Profit before tax	2,905	4,305	4,201	4,491
Net Income (reported)	1,878	2,809	2,741	2,930
Net Income (adjusted)	1,933	2,788	2,741	2,930
EPS (adjusted)	**16.2**	**23.4**	**23.0**	**24.6**
Key ratios				
RM/Sales (x)	66	68	69	67
EBITDA margin (%)	12.8	12.8	11.5	11.1
Net Income margin (%)	8.9	8.7	7.2	6.7
Working capital as % of Sales	(7.3)	(4.3)	(3.6)	2.2
Debtor days	76	67	87	107
Creditor days	145	130	130	130

Source: Deutsche Bank, Company data

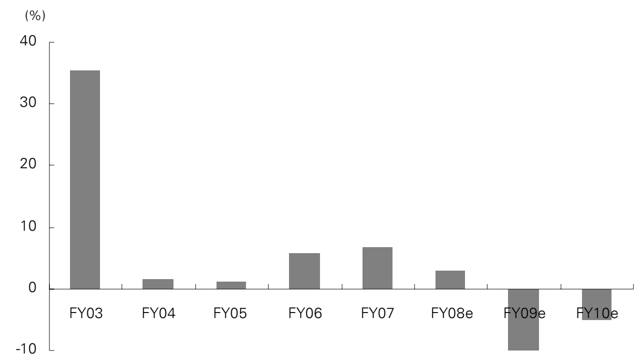
The subsidiaries contribute 8% to the top line and 5% to the bottom line. We have assumed a 32% increase in revenues in FY09e and a 13% increase in FY10e, based on different growth rates of various subsidiary companies.

Likewise, at the consolidated level, revenue is estimated to grow at 20% CAGR over FY08-10e. This would take the EBITDA margin to 12.3% in FY09e (same as FY08) and 12.7% in FY10e. Accordingly, earnings are estimated to grow at 11% CAGR over FY08-10e.

We estimate the free cash flow yield to turn negative from 3% in FY08e to -10% in FY09e but recovery to -5% in FY10e. This is due to higher capex in FY09e for utility capacity addition and a reversal in the working capital cycle.

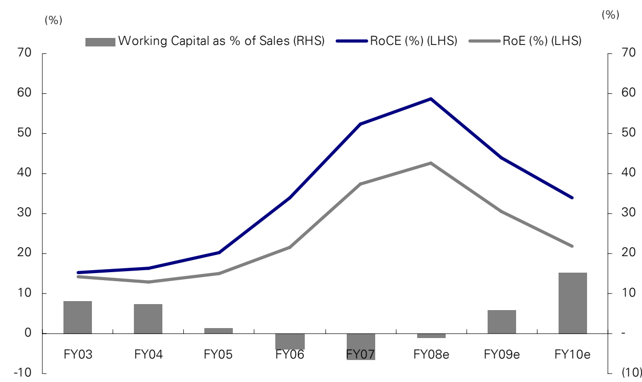
We believe both the RoEs and RoCEs have peaked out in FY08e. We estimate RoE to decline from 43% in FY08e to 22% in FY10e.

Figure 199: A sharp turnaround in FCF yields



Source: Deutsche Bank, Company data

Figure 200: ROE and RoCE seem to have peaked



Source: Deutsche Bank, Company data

DB versus Consensus

Our earnings estimates are the lowest on the street for FY10e

Our earnings estimates are in line with the consensus for FY09e but are the lowest on the street for FY10e.

Figure 201: Our estimates are below the consensus

	FY09e			FY10e		
	DB	Consensus	% Variance	DB	Consensus	% Variance
Revenue	42,250	41,680	1.4	49,908	52,622	(5.2)
EBITDA	5,218	5,174	0.8	6,335	6,604	(4.1)
EPS	27.8	28.5	(2.3)	30.3	36.4	(16.8)

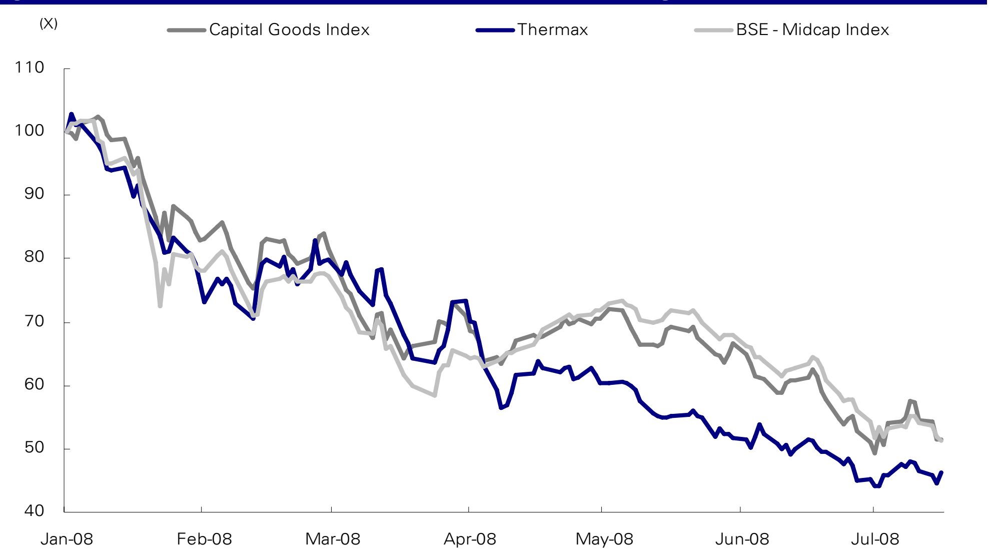
Source: Deutsche Bank, Bloomberg

Valuation and sensitivity

Stock performance

The stock has corrected 54% YTD largely in line with the other mid-cap capital goods companies. However, it has underperformed the capital goods index and BSE mid cap index.

Figure 202: YTD, Thermax has underperformed the capital goods index

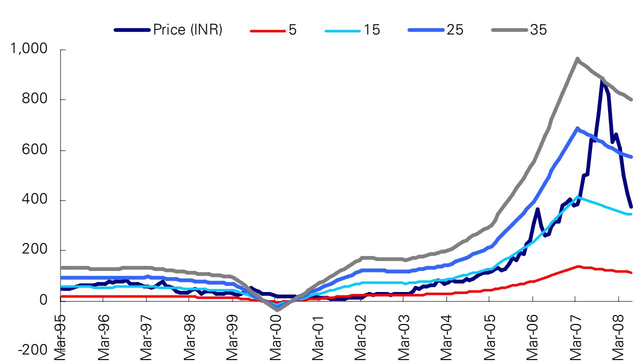


Source: Deutsche Bank, Bloomberg

Trading bands

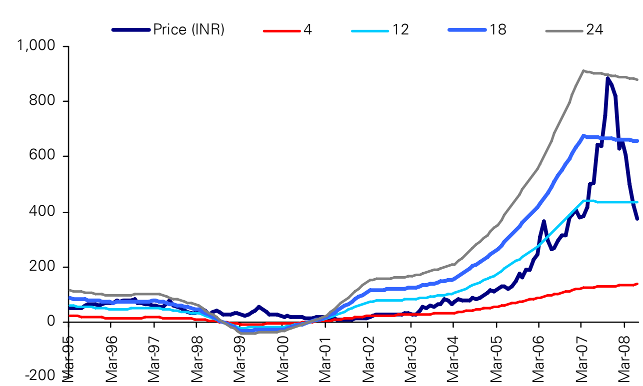
Following the correction in its share price, Thermax is currently trading in the lower quartile of its trading band. Its valuations appear rich despite the correction. We believe Thermax's share price still does not factor in demand slowdown from new captive power plants as coal price continues to rise.

Figure 203: 1-yr forward P/E multiple



Source: Deutsche Bank, Bloomberg, Annual reports of the company

Figure 204: 1-yr forward EV/EBITDA multiple



Source: Deutsche Bank, Bloomberg, Annual reports of the company

Valuation

Our target price of INR270/sh is based on a 1-yr forward P/E of 9x FY10e. We believe our multiple looks reasonable as we estimate earnings CAGR of 11% over FY08-10e implying a PEG of ~1 (Price-earnings to growth). Also, this multiple is in line with mid-cap industrial companies A DCF methodology using cost of equity of 15% at a risk-free rate of 8.2% (in line with DB estimate), 4.7% risk premium (in line with DB estimate), beta of 1.4 (based on weekly stock prices from Bloomberg) and terminal free cash flow growth of 3% yields a value of INR270/sh.

Sensitivity analysis

Figure 205 gives a snapshot of the sensitivity analysis on our earnings model.

- **Revenue realisation:** If the revenue realised by the company increases by 10% versus our estimate, then the EPS increase by 26% in FY09e and by 30% in FY10e while the free cash flow yield will increase by ~150bps in FY09e and by ~100 bps in FY10e.
- **Raw material expenses:** If raw material expenses, as percentage of sales, decrease by 100bps versus our estimate, earnings will increase by 8% in FY09e and by 9% in FY10e. However, the free cash flow yield will increase by <100bps during FY09e and FY10e.
- **Working capital cycle:** A 10-day reduction in the working capital cycle can lead to an increase of 1% in earnings during FY09e and FY10e. However, the free cash flow yield decreases by 200bps in FY09e and by 50 bps in FY10e.

Figure 205: Sensitivity analysis

Sensitivity	FY09e				FY10e			
	Sales	EBITDA margin	EPS	FCF yield	Sales	EBITDA margin	EPS	FCF yield
Base Case	42,250	12	28	(10)	49,908	13	30	(5)
Revenue:								
10% higher than our estimates	46,151	14	35	(8)	54,534	14	39	(4)
% change over Base Case	9	13	26	151	9	13	30	101
10% lower than our estimates	38,349	10	21	(11)	45,282	11	21	(6)
% change over Base Case	(9)	(16)	(26)	(151)	(9)	(16)	(30)	(101)
RM / Sales								
100 bps lower than our estimates	42,250	13	30	(9)	49,908	14	33	(4)
% change over Base Case	-	92	8	56	-	93	9	69
100 bps higher than our estimates	42,250	11	26	(10)	49,908	12	27	(6)
% change over Base Case	-	(92)	(8)	(56)	-	(93)	(9)	(69)
Working capital cycle								
10 days lower than our estimates	42,250	12	28	(8)	49,908	13	31	(4)
% change over Base Case	-	-	1	206	-	-	1	49
10 days higher than our estimates	42,250	12	28	(12)	49,908	13	30	(5)
% change over Base Case	-	-	(1)	(206)	-	-	(1)	(49)

Source: Deutsche Bank

Asia India
Mid & Small Caps

18 July 2008

Voltas

Reuters: **VOLT.BO** Bloomberg: **VOLT IN**

Pains from construction slowdown; Downgrade to Sell

Sector headwinds can cause pain; downgrade to Sell
This note marks a transfer of coverage to Deepak Agrawala. YTD, the stock has corrected by 51%, in line with other mid-cap capital goods companies. The stock trades at a P/E of 16x FY09e and 12x FY10e, which looks rich as a slowdown in retail and commercial construction could temper growth. The company's product sales have rarely exhibited counter-cyclical traits. Earnings from the Middle East's order completion could drive growth, but FCF yield is likely to drop ~400bps to ~3% by FY10e. Use of cash in the B/S is still not clear. Sell with TP of 100/sh.

Middle East exposure could be a saving grace
At a time of a slowdown in construction activity in both retail and commercial sectors, the geographic mix of a quarter of sales in the Middle East could be a silver lining. While the company is largely a project coordinator rather than a technology or patent-holder, one would have to see the benefits of this foray into lateral diversification from electrical/mechanical work in AC systems to the addition of plumbing work.

Management guidance looks optimistic
While management has set itself a target of a 33% CAGR for turnover growth over the next three years, the single biggest challenge will be raising employee strength incrementally by 3,500 during FY09e-11e. A 45% jump in productivity over the next three years is a challenge. Our assumptions factor in growth moderation from a cyclical turnaround and are marginally below consensus.

Downgrade to Sell; a turnaround in the real estate sector is a key risk
Our revised TP of INR 100/sh is based on an average target P/E multiple of 10x FY10e and a DCF(COE of 14%, terminal growth of 3%). Key upside risks include a turnaround in the real estate sector, pricing power in product segments, faster execution time and sharp rupee depreciation.

Forecasts and ratios

Year End Mar 31	2007A	2008A	2009E	2010E	2011E
Sales (INRm)	25,267.4	32,029.3	**44,554.9**	55,450.9	69,090.6
EBITDA (INRm)	1,279.6	2,530.5	**3,671.5**	4,777.9	5,673.0
Reported NPAT (INRm)	2,015.8	2,076.9	**2,563.9**	3,293.1	3,826.0
DB EPS FD(INR)	3.99	5.33	**7.75**	9.96	11.57
OLD DB EPS FD(INR)	3.99	6.51	**9.13**	11.92	–
% Change	0.0%	-18.2%	**-15.1%**	-16.4%	–
DB EPS growth (%)	1,221.0	33.5	**45.6**	28.4	16.2
PER (x)	23.9	30.4	**16.0**	12.5	10.7
DPS (net) (INR)	1.02	1.35	**1.50**	1.50	1.50

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

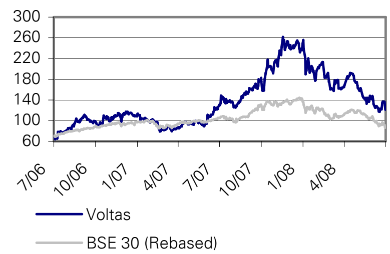
Sell

Price at 17 Jul 2008 (INR)	**124.00**
Price target - 12mth (INR)	**100.00**
52-week range (INR)	**261.85 - 116.80**
BSE 30	**12,576**

Key changes

Rating	Buy to Sell ↓	
Price target	230.00 to 100.00 ↓	**-56.5%**
Sales (FYE)	44,578 to 44,555 ↓	**-0.1%**
Op prof margin (FYE)	5.7 to 7.8 ↑	**37.3%**
Net profit (FYE)	3,018.6 to 2,563.9 ↓	**-15.1%**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-14.6*	*-26.6*	*-7.4*
BSE 30	*-18.3*	*-22.6*	*-17.9*

Stock data

Market cap (INRm)	**41,005**
Market cap (USDm)	**952**
Shares outstanding (m)	**330.7**
Major shareholders	–
Free float (%)	**73**
Avg daily value traded (USDm)	**7.3**

Key indicators (FY1)

ROE (%)	**37.7**
Net debt/equity (%)	**-67.6**
Book value/share (INR)	**23.70**
Price/book (x)	**5.2**
Net interest cover (x)	**40.9**
Operating profit margin (%)	**7.8**

Infrastructure Research Team

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:10 July 2008

Running the numbers

Asia

India

Mid & Small Caps

Voltas

Reuters: VOLT.BO Bloomberg: VOLT IN

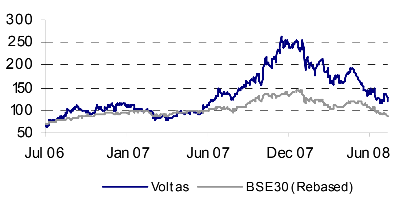
Sell

Price (17 Jul 08)	INR 124.00
Target price	INR 100.00
52-week Range	INR 116.80 - 261.85
Market Cap (m)	INRm 41,005 USDm 952

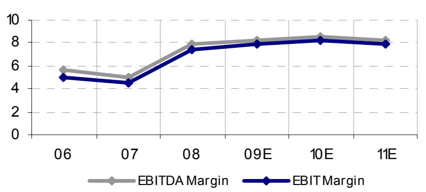
Company Profile

Voltas, a Tata group company, is a leading provider of engineering solutions for a wide spectrum of industries such as heating, ventilation and air conditioning (HVAC), refrigeration, electro-mechanical projects, textile machinery, machine tools, mining and construction equipment, materials handling, water management, building management systems, indoor air quality and chemicals.

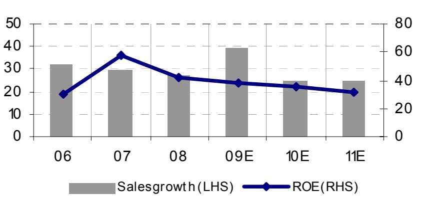
Price Performance



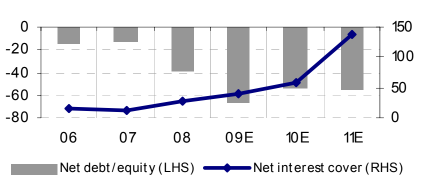
Margin Trends



Growth & Profitability



Solvency



Deepak Agrawala
+91 22 66584214 deepak-m.agrawala@db.com

Fiscal year end 31-Mar	2006	2007	2008	2009E	2010E	2011E
Financial Summary						
DB EPS (INR)	0.30	3.99	5.33	7.75	9.96	11.57
Reported EPS (INR)	0.22	6.10	6.28	7.75	9.96	11.57
DPS (INR)	0.06	1.02	1.35	1.50	1.50	1.50
BVPS (INR)	0.8	12.8	17.5	23.7	32.2	42.2
Weighted average shares (m)	3,306	331	331	331	331	331
Average market cap (INRm)	157,389	31,492	53,522	41,005	41,005	41,005
Enterprise value (INRm)	156,534	29,687	48,678	35,338	34,912	32,847
Valuation Metrics						
P/E (DB) (x)	157.6	23.9	30.4	16.0	12.5	10.7
P/E (Reported) (x)	213.7	15.6	25.8	16.0	12.5	10.7
P/BV (x)	122.42	6.62	10.19	5.23	3.86	2.94
FCF Yield (%)	0.3	8.3	7.4	3.5	2.6	6.6
Dividend Yield (%)	0.1	1.1	0.8	1.2	1.2	1.2
EV/Sales (x)	8.0	1.2	1.5	0.8	0.6	0.5
EV/EBITDA (x)	140.1	23.2	19.2	9.6	7.3	5.8
EV/EBIT (x)	160.3	26.4	20.6	10.1	7.6	6.0
Income Statement (INRm)						
Sales revenue	**19,544**	**25,267**	**32,029**	**44,555**	**55,451**	**69,091**
Gross profit	**2,983**	**3,809**	**5,326**	**7,232**	**9,042**	**10,984**
EBITDA	**1,118**	**1,280**	**2,531**	**3,671**	**4,778**	**5,673**
Depreciation	141	156	167	181	194	220
Amortisation	0	0	0	0	0	0
EBIT	**977**	**1,124**	**2,364**	**3,490**	**4,584**	**5,453**
Net interest income(expense)	-64	-99	-90	-85	-80	-39
Associates/affiliates	0	0	2	3	5	7
Exceptionals/extraordinaries	-262	696	316	0	0	0
Other pre-tax income/(expense)	310	703	483	342	288	140
Profit before tax	**1,222**	**1,728**	**2,757**	**3,747**	**4,792**	**5,554**
Income tax expense	224	407	997	1,185	1,502	1,733
Minorities	0	2	1	1	2	2
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	**737**	**2,016**	**2,077**	**2,564**	**3,293**	**3,826**
DB adjustments (including dilution)	262	-696	-316	0	0	0
DB Net profit	**998**	**1,319**	**1,761**	**2,564**	**3,293**	**3,826**
Cash Flow (INRm)						
Cash flow from operations	**821**	**2,304**	**4,348**	**1,938**	**1,849**	**3,510**
Net Capex	-342	297	-381	-503	-800	-800
Free cash flow	**480**	**2,601**	**3,968**	**1,435**	**1,049**	**2,710**
Equity raised/(bought back)	0	0	0	0	0	0
Dividends paid	-199	-336	-447	-496	-496	-497
Net inc/(dec) in borrowings	-364	215	-378	-74	-66	-66
Other investing/financing cash flows	-156	-786	-1,337	2,218	0	0
Net cash flow	**-238**	**1,693**	**1,805**	**3,084**	**487**	**2,146**
Change in working capital	*250*	*-584*	*1,707*	*-906*	*-1,763*	*0*
Balance Sheet (INRm)						
Cash and other liquid assets	1,298	1,677	3,002	5,969	6,328	8,334
Tangible fixed assets	1,635	1,601	1,898	2,220	2,826	3,406
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	461	1,248	2,585	367	367	367
Other assets	9,081	12,084	13,833	20,262	26,686	33,200
Total assets	**12,475**	**16,610**	**21,319**	**28,818**	**36,207**	**45,307**
Interest bearing debt	901	1,116	737	664	597	538
Other liabilities	8,858	11,252	14,788	20,311	24,972	30,807
Total liabilities	**9,758**	**12,368**	**15,526**	**20,974**	**25,570**	**31,345**
Shareholders' equity	2,714	4,237	5,772	7,838	10,632	13,956
Minorities	3	4	5	5	5	5
Total shareholders' equity	**2,716**	**4,242**	**5,778**	**7,844**	**10,638**	**13,962**
Net debt	*-397*	*-561*	*-2,264*	*-5,306*	*-5,731*	*-7,796*
Key Company Metrics						
Sales growth (%)	32.3	29.3	26.8	39.1	24.5	24.6
DB EPS growth (%)	112.0	1,221.0	33.5	45.6	28.4	16.2
EBITDA Margin (%)	5.7	5.1	7.9	8.2	8.6	8.2
EBIT Margin (%)	5.0	4.4	7.4	7.8	8.3	7.9
Payout ratio (%)	26.9	16.7	21.5	19.4	15.1	13.0
ROE (%)	30.0	58.0	41.5	37.7	35.7	31.1
Capex/sales (%)	1.7	0.0	1.2	1.1	1.4	1.2
Capex/depreciation (x)	2.4	0.0	2.3	2.8	4.1	3.6
Net debt/equity (%)	-14.6	-13.2	-39.2	-67.6	-53.9	-55.8
Net interest cover (x)	15.2	11.4	26.3	40.9	57.5	139.1

Source: Company data, Deutsche Bank estimates

Investment thesis

Outlook

We downgrade the stock to Sell with a target price of INR100/sh, based on:

- We view the medium-term business environment of Voltas as a major challenge. A slowdown in the pace of construction of both retail and commercial sectors would hurt the demand especially for AC products. Orders from the Middle East continue to provide a silver-lining. However, we remain concerned even about the Middle East, as there have been press reports suggesting a large default from contractors in the residential segment.
- Management looks extremely confident that it can weather the downturn through a combination of cost-cutting measures and gains in market share (both in domestic and international markets). Cost-cutting is envisaged through better project management and productivity improvement (our calculation says ~45% over the next three years). In our view, management's guidance of 33% CAGR over FY08-11e in sales is aggressive. At this juncture, we estimate revenue CAGR of 29% and have toned down margin guidance of 200 bps improvement to a flat level by FY11e. This is primarily due to our sector view[3] that the investment cycle has turned and we are now headed into a down-cycle.
- We forecast an EPS CAGR of 30% for FY08-11e. The key will be FCF and the working capital cycle. We estimate that RoE will drop by 500bps during FY09-10e.
- The stock has traded in a price band of 8x-32x over the past ten years. With the reversal of the cycle we believe that the valuation multiple must be reset to those in the down-cycle.

Valuation

We have used an average of value from PE and DCF to arrive at the TP. We have used a target exit P/E of 10x FY10e which gives a value at INR 100/sh. This seems reasonable as the stock has traded between 8x and 32x over the last 14 years. At 33% RoE in FY09e and 31% in FY10e implies one can argue that Voltas deserves a better P/E multiple. However, we are hesitant to give the company a higher exit P/E multiple as we are unclear about the acquisition strategy and the company's policy of dividend pay-out. Higher export turnover also stresses the working capital cycle, and we will wait and see management's performance in this regard. Also, our estimates of EPS CAGR of 30% over FY08-11e imply the target peg multiple is less than 0.3. Despite a high product share of 55% of the sales, the segment has low pricing power and is vulnerable to demand shocks from the slowdown in both retail and commercial construction. A DCF methodology using cost of equity of 14% at a risk-free rate of 8.2% (in line with DB's estimate), 4.7% risk premium (in line with DB's estimate), beta of 1.2 (based on weekly stock prices from Bloomberg) and terminal free cash flow growth of 3% (In line with sector terminal growth rate) yields a value of INR100/sh.

Risks

Key risks to our estimates. (a) A reversal in the real estate construction cycle. This could give macro impetus to management to achieve its targets. If +/-10% change in revenues vs our estimate then EPS changes by 28% in FY09e. (b) If management is able to deliver on its guidance for cost cutting, then EPS could rise by 14% over our base case. A 5% rupee depreciation / appreciation vs. the USD over our base case forecast of 1USD =INR 43 would impact earnings by +/- 4%. Note that roughly about quarter of sales come from exports.

[3] As per our sector report titled "Don't wait till the music stops" dated Jul 18, 08

Assumptions and forecasts

Assumptions

Figure 206 highlights the key assumptions for our earnings model. We have assumed a CAGR of 11% for the order inflows during FY08-10e. This is lower than the 40% CAGR achieved by the company during FY06-08. However, revenues from the turnkey project division are still estimated to show healthy growth at a 33% CAGR as a lot of orders are coming up for completion over the next two years. However, we have trimmed our sales forecast for ACs (unitary division) due to worries about an impending slowdown in both the retail and commercial construction sectors.

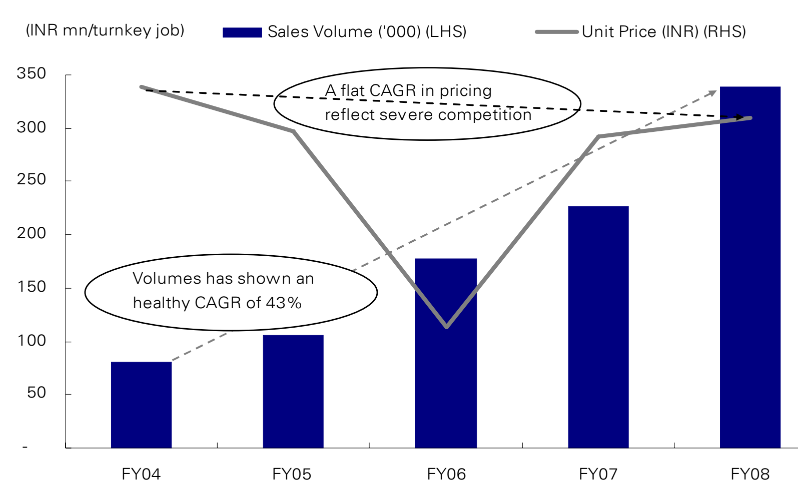
Figure 206: Key assumptions for standalone business

	FY07	FY08	FY09e	FY10e	FY11e
Order Inflow (INR bn)	15	37	28	29	32
Order backlog (INR bn)	22	43	50	65	83
Export : domestic mix	71 : 29	79 : 21	80 : 20	75 : 25	70 : 30
Revenue growth (% YoY) for					
…Turnkey projects (45% of sales in FY08)	16	21	44	27	28
…Unitary Sales (27% of sales in FY08)	30%	34%	26%	18%	20%
Unitary division (AC Products) (volume)	28	49	20	15	20
Unitary division (AC product) (price)	10	1	-	(2)	2
Engg services division (18% of sales in FY08)	30	34	26	18	20
Others (10% of sales in FY08)	34	10	53	28	28
RM/Sales	75	73	74	74	74
Number of Employees	5,848	7,378	8,878	10,378	10,878

Source: Deutsche Bank, Company's Annual report and FY08

Early data from ORG-MARG says that industry sales of room ACs have grown by a mere 12-14% in the first two months of the current year. This is a sharp slowdown vs. industry growth of 28% for room ACs in FY08. Note that we have assumed a dip in realizations of ACs (unitary division) as industry growth has tapered off and Voltas' management has at times shown its inclination towards strategy of greater m/s vs. price stability.

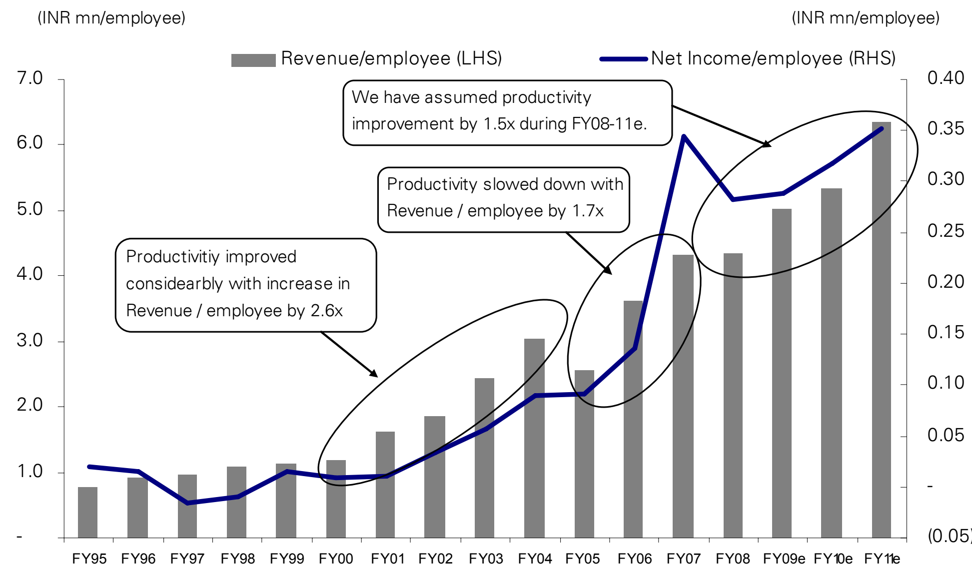
Figure 207: Strategy of favouring volumes vs. price



Source: Deutsche Bank, Company

In addition, we have assumed a manpower addition to the tune of ~3,500 employees during FY09-11e. This implies a productivity improvement of 45% over FY08 levels – a feat which at first glance looks like a challenge to achieve. But as seen in Figure 208, management has consistently delivered productivity enhancement over the years.

Figure 208: Productivity indicators



Source: Deutsche Bank, Company data

Forecasts

On a standalone basis, revenue is estimated to grow at a 30% CAGR for FY08-11e, while earnings are expected to grow at a 26% CAGR during the same period.

Figure 209: Standalone financial forecast

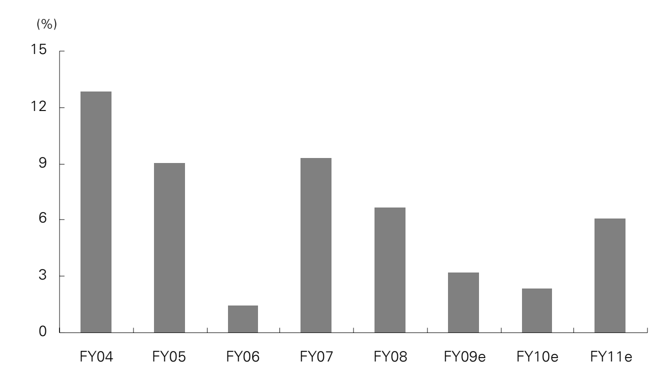
Year to March	FY07	FY08	FY09e	FY10e	FY11e
Income from operations	24,006	30,445	42,660	53,083	66,130
Direct costs	18,357	22,657	31,998	39,550	49,271
Employee costs	2,401	2,769	3,876	5,039	6,550
Other expenses	2,162	2,511	3,233	3,880	4,850
Total operating expenses	22,920	27,937	39,107	48,468	60,671
EBITDA	1,086	2,509	3,553	4,614	5,459
EBIT	963	2,373	3,391	4,429	5,248
Adjusted net income	1,177	1,752	2,424	3,073	3,546
Shares outstanding (mn)	331	331	331	331	331
EPS	**5.6**	**6.2**	**7.3**	**9.3**	**10.7**
EBITDA margin (%)	5	8	8	9	8.3
RM/Sales (x)	75	73	74	74	74
EV/EBITDA (x)	24.0	21.7	11.2	9.2	8.2

Source: Deutsche Bank, Annual report for FY07 and FY08

The financials of the subsidiary are by-and-large miniscule in the overall context of the company, which made a marginal profit of INR0.2mn in FY08. Based on revenue growth of 25% in FY09-11e, the earnings from the subsidiary are estimated to be INR9.8mn in FY09e and INR20mn by FY11e. Accordingly, on a consolidated basis, we estimate revenue growth at a 29% CAGR and earnings (recurring) growth at a 30% CAGR for FY08-11e.

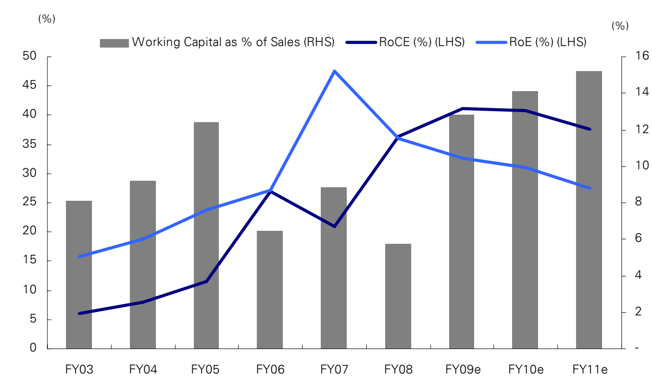
Based on our assumptions, we estimate that the FCF yield will drop from a level of ~7% in FY08 to ~3% by FY10e. This is primarily due to the greater requirement of cash for working capital. However, based on our assumptions of a turnaround in the construction sector in FY11e, the FCF yield jumps up in FY11e. While the RoE seems to have peaked in FY07, the RoCE is likely to peak in FY09e.

Figure 210: FCF yield (%) is declining sharply



Source: Deutsche Bank, Company data

Figure 211: Working capital cycle vs. RoE and RoCE



Source: Deutsche Bank, Company data

DB vs. consensus

Our earnings estimates are 5% below consensus for FY09e and FY10e.

Figure 212: Our estimates vs. consensus

	FY09e			FY10e		
	DB	Consensus	% Variance	DB	Consensus	% Variance
Revenue	44,555	42,566	4.7	55,451	51,937	6.8
EBITDA	3,671	3,338	10.0	4,778	4,466	7.0
EPS	7.8	8.2	(5.0)	10.0	10.4	(4.5)

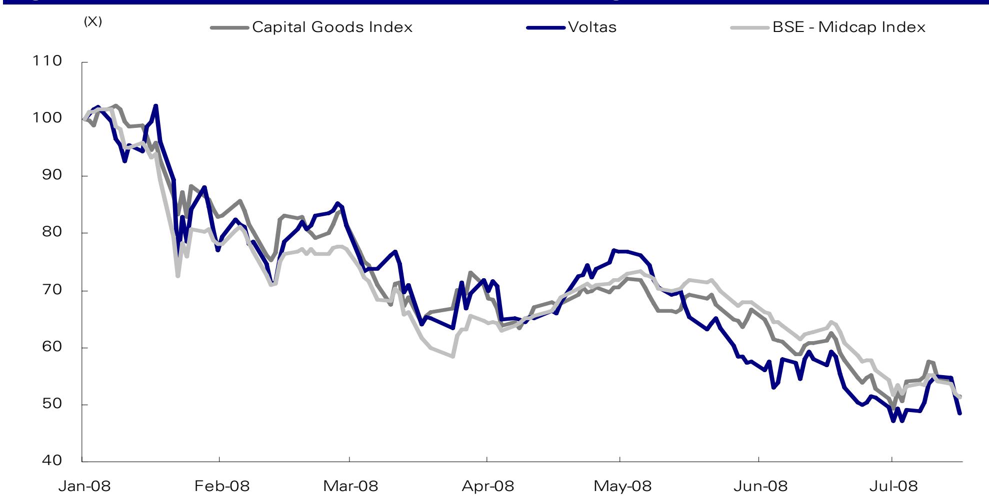
Source: Deutsche Bank, Bloomberg

Valuation and sensitivity

Stock performance

Voltas's stock has corrected by 50% YTD largely in line with the capital goods index and BSE mid-cap index.

Figure 213: Stock performance is in line with capital goods index and the Sensex

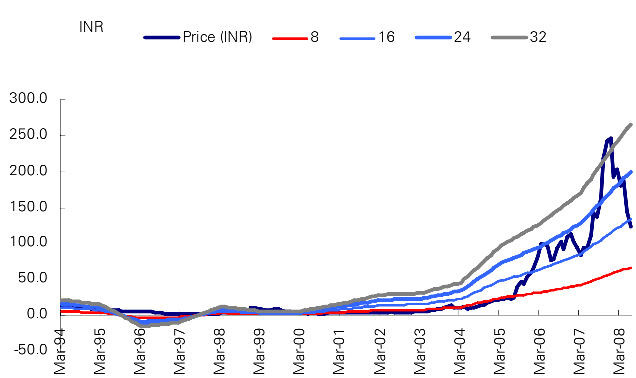


Source: Deutsche Bank, Bloomberg

Trading bands

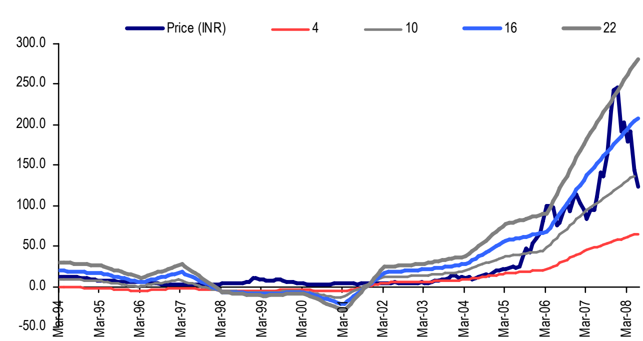
After the correction in the stock price, the stock is now trading in the lower quartile of the trading bands. Though this is a substantial correction, the valuations still do not factor in the change in the investment environment, which, in our view, has turned around.

Figure 214: 12-month forward P/E bands



Source: Deutsche Bank, Bloomberg, Annual reports of the company

Figure 215: 12-month forward EV/EBITDA bands



Source: Deutsche Bank, Bloomberg, Annual reports of the company

Valuation

We have used an average of value from PE and DCF to arrive at the TP. We have used a target exit P/E of 10x FY10e which gives a value at INR 100/sh. This seems reasonable as the stock has traded between 8x and 32x over the last 14 years. At 33% RoE in FY09e and 31% in FY10e, one could argue that Voltas deserves a better P/E multiple. We are hesitant, however, to give the company a higher exit P/E multiple, as we are unclear of the acquisition strategy and the company's policy of low dividend pay-out. Higher export turnover also stresses the working capital cycle and we will wait and see management's performance in this regard. Also, our estimates of 30% EPS CAGR over FY08-11e imply the target peg multiple is less than 0.3. Also, despite a high product share of 55% of the sales, the segment has low pricing power and is vulnerable to demand shocks from the slowdown in both retail and commercial construction.

A DCF methodology using cost of equity of 14% at a risk-free rate of 8.2% (in line with DB's estimate), 4.7% risk premium (in line with DB's estimate), beta of 1.2 (based on weekly stock prices from Bloomberg) and terminal free cash flow growth of 3% yields a value of INR100/sh.

Sensitivity analysis

Figure 216 gives a snapshot of the sensitivity analysis on our earnings model.

- **Revenue realization:** If the revenue realized by the company increases by 10% vs. our estimates, then EPS would increase by 28% in FY09e and FY10e while the FCF yield would increase by ~150 bps in FY09e and ~180 bps in FY10e.
- **Raw-material expenses:** If the raw-material expenses as a percentage of sales decrease by 100bps vs. our estimates, then earnings would increase by 11% in FY09e and FY10e. However, the FCF yield would increase by <100 bps during FY09e and FY10e.
- **Working capital cycle:** A 10-day reduction in the working capital cycle would lead to an increase of 1% in earnings during FY09e and FY10e.

Figure 216: Sensitivity analysis

	FY09e				FY10e				FY11e			
	Sales	EBITDA margin*	EPS	FCF/yield *	Sales	EBITDA margin	EPS	FCF/yield *	Sales	EBITDA margin	EPS	FCF/yield *
Base Case	44,555	8	7.8	3	55,451	9	10	2	69,091	8	12	6
Revenue												
10% higher than our estimates	48,821	10	10	5	60,759	10	13	4	75,704	10	15	9
% change over Base Case	10	18	28	148	10	17	29	181	10	18	31	262
10% lower than our estimates	40,289	6	6	2	50,143	7	7	1	62,478	6	8	3
% change over Base Case	(10)	(22)	(28)	(148)	(10)	(21)	(29)	(181)	(10)	(22)	(31)	(262)
RM/Sales												
100 bps lower than our estimates	44,555	9	8.6	3.9	55,451	10	11	3.2	69,091	9	13	7.2
% change over Base Case	-	96	11	68	-	96	11	86	-	96	12	110
100 bps higher than our estimates	44,555	7	6.9	2.5	55,451	8	9	1.5	69,091	7	10	5.0
% change over Base Case	-	(96)	(11)	(68)	-	(96)	(11)	(86)	-	(96)	(12)	(110)
Working Capital cycle												
10 days lower than our estimates	44,555	8	8	3	55,451	9	10	2	69,091	8	12	6
% change over Base Case	-	-	1	5	-	-	1	11	-	-	2	14
10 days higher than our estimates	44,555	8	8	3	55,451	9	10	2	69,091	8	11	6
% change over Base Case	-	-	(1)	(5)	-	-	(1)	(11)	-	-	(2)	(14)

*Source: Deutsche Bank, * Change is in bps*

Utilities

Asia India
Transportation Infrastructure

18 July 2008

IRB Infrastructure Dev.

Reuters: **IRBI.BO** Bloomberg: **IRB IN**

Impacted by slowdown; downgrade to Sell

Tough times; downgrade to Sell
We have increased interest costs for BOT road projects due to a rising interest rate scenario and increasing PLRs. In line with our sector view of a slowdown in investments, we are experiencing hiccups in road awards with many RFQs being postponed. Also, rising crude prices have a negative impact on traffic growth. We have cut earnings estimates by 9% in FY09e and 6% in FY10e. We factor in a higher cost of capital of 15% in line with rising equity risk premiums. Our revised TP of INR130 implies 9% downside. Downgrade to Sell.

Roads could see a slowdown in investments
Based on our sector view of a slowdown in order awards in India due to a variety of reasons, such as cash, structural issues, and contractor capacity, we have pruned our estimates for fresh road awards in 2009 to 2073km. Note that we have estimated that IRB could potentially win two awards of 250km each.

Revised earnings factor in higher debt cost
Despite the cut in our estimates, we forecast a 114% CAGR in EPS over FY08-10e. We now assume the cost of debt at 13%. However, the company continues to have a negative FCF yield.

TP revised to INR130/share; downgrade to Sell
Our revised TP of INR130/share is based on an average of SOTP and PE methodologies, assuming an exit PE multiple of 7x FY10e. Key upside risks are: a) the continuity in winning profitable projects; b) higher traffic vs. our estimates (1% higher-than-estimated traffic drives TP +4%); c) higher E&C margins (1% higher E&C margins drive TP +2%).

Forecasts and ratios

Year End Mar 31	2007A	2008E	2009E	2010E
Sales (INRm)	5,250.0	**7,327.1**	13,765.7	31,884.2
EBITDA (INRm)	2,810.0	**4,118.9**	5,975.3	12,433.4
Reported NPAT (INRm)	800.0	**1,139.3**	2,737.7	6,461.1
Reported EPS FD(INR)	4.13	**4.24**	8.24	19.44
DB EPS FD(INR)	4.13	**4.24**	8.24	19.44
OLD DB EPS FD(INR)	4.13	**4.24**	9.05	20.71
% Change	0.0%	**0.0%**	-9.0%	-6.2%
DB EPS growth (%)	–	**2.8**	94.2	136.0
PER (x)	–	**33.5**	17.2	7.3
EV/EBITDA (x)	–	**14.9**	10.6	6.5

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

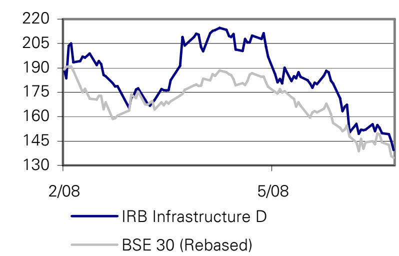
Sell

Price at 17 Jul 2008 (INR)	**142.00**
Price target - 12mth (INR)	**130.00**
52-week range (INR)	**214.60 - 139.60**
BSE 30	**12,576**

Key changes

Rating	Hold to Sell ↓	
Price target	180.00 to 130.00 ↓	**-27.8%**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-24.7*	*-33.2*	*–*
BSE 30	*-18.3*	*-22.6*	*-17.9*

Stock data

Market cap (INRm)	**47,195**
Market cap (USDm)	**1,096**
Shares outstanding (m)	**332.4**
Major shareholders	**Promoters (74.4%)**
Free float (%)	**15**
Avg daily value traded (USDm)	**3.3**

Key indicators (FY1)

ROE (%)	**13.4**
Net debt/equity (%)	**119.0**
Book value/share (INR)	**39.92**
Price/book (x)	**3.6**
Net interest cover (x)	**1.6**
Operating profit margin (%)	**42.3**

Infrastructure Research Team

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:11 July 2008

Running the numbers

Asia

India

Infrastructure

IRB Infrastructure Dev.

Reuters: IRBI.BO Bloomberg: IRB IN

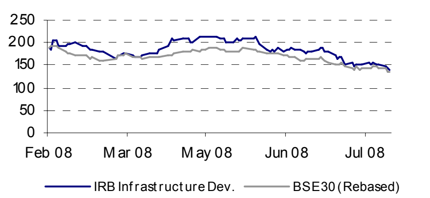
Sell

Price (17 Jul 08)	INR 142.00
Target price	INR 130.00
52-week Range	INR 139.60 - 214.60
Market Cap (m)	INRm 47,195 USDm 1,096

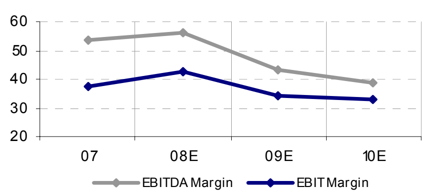
Company Profile

IRB Infrastructure Developers has businesses in the areas of roads, engineering and construction and real estate. IRB has a portfolio of 13 BOT projects and is one of the largest road developers in Western India in the road sector.

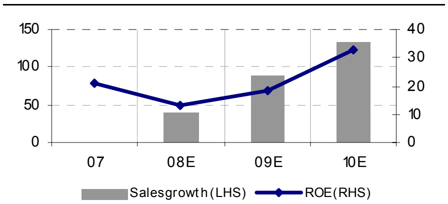
Price Performance



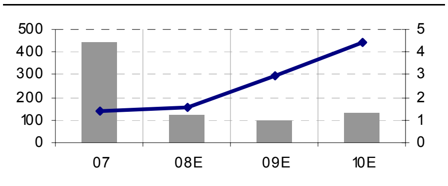
Margin Trends



Growth & Profitability



Solvency



Manish Saxena
+91 22 6658 4034 manish.saxena@db.com

Fiscal year end 31-Mar	2007	2008E	2009E	2010E
Financial Summary				
DB EPS (INR)	4.13	4.24	8.24	19.44
Reported EPS (INR)	4.13	4.24	8.24	19.44
DPS (INR)	0.00	0.00	0.00	0.00
BVPS (INR)	11.3	39.9	50.3	69.1
Weighted average shares (m)	236	332	332	332
Average market cap (INRm)	na	47,195	47,195	47,195
Enterprise value (INRm)	na	61,172	63,105	80,901
Valuation Metrics				
P/E (DB) (x)	na	33.5	17.2	7.3
P/E (Reported) (x)	na	33.5	17.2	7.3
P/BV (x)	0.00	3.56	2.82	2.05
FCF Yield (%)	na	nm	nm	nm
Dividend Yield (%)	na	0.0	0.0	0.0
EV/Sales (x)	nm	8.3	4.6	2.5
EV/EBITDA (x)	nm	14.9	10.6	6.5
EV/EBIT (x)	nm	19.7	13.5	7.7
Income Statement (INRm)				
Sales revenue	**5,250**	**7,327**	**13,766**	**31,884**
Gross profit	**2,810**	**4,119**	**5,975**	**12,433**
EBITDA	**2,810**	**4,119**	**5,975**	**12,433**
Depreciation	150	90	150	165
Amortisation	710	926	1,139	1,804
EBIT	**1,950**	**3,103**	**4,686**	**10,464**
Net interest income(expense)	-1,400	-1,958	-1,579	-2,365
Associates/affiliates	0	0	0	0
Exceptionals/extraordinaries	280	0	0	0
Other pre-tax income/(expense)	230	520	470	360
Profit before tax	**1,060**	**1,666**	**3,577**	**8,459**
Income tax expense	260	400	736	1,527
Minorities	0	126	104	471
Other post-tax income/(expense)	0	0	0	0
Net profit	**800**	**1,139**	**2,738**	**6,461**
DB adjustments (including dilution)	0	0	0	0
DB Net profit	**800**	**1,139**	**2,738**	**6,461**
Cash Flow (INRm)				
Cash flow from operations	**2,337**	**602**	**3,968**	**8,812**
Net Capex	-8,409	-634	-6,472	-25,899
Free cash flow	**-6,072**	**-32**	**-2,504**	**-17,087**
Equity raised/(bought back)	585	8,759	0	0
Dividends paid	0	0	0	0
Net inc/(dec) in borrowings	8,901	-3,235	5,123	6,668
Other investing/financing cash flows	550	-2,966	561	764
Net cash flow	**3,964**	**2,526**	**3,180**	**-9,656**
Change in working capital	*0*	*0*	*0*	*0*
Balance Sheet (INRm)				
Cash and other liquid assets	3,703	5,830	9,685	792
Tangible fixed assets	917	3,031	9,353	21,997
Goodwill/intangible assets	23,501	21,005	19,866	31,152
Associates/investments	413	2,417	1,917	917
Other assets	3,856	5,928	7,973	12,855
Total assets	**32,391**	**38,210**	**48,793**	**67,712**
Interest bearing debt	25,180	21,945	27,068	33,736
Other liabilities	2,326	2,718	4,602	9,393
Total liabilities	**27,506**	**24,663**	**31,669**	**43,129**
Shareholders' equity	3,770	13,268	16,713	22,969
Minorities	1,115	279	444	1,679
Total shareholders' equity	**4,885**	**13,547**	**17,157**	**24,647**
Net debt	*21,476*	*16,115*	*17,383*	*32,944*
Key Company Metrics				
Sales growth (%)	nm	39.6	87.9	131.6
DB EPS growth (%)	na	2.8	94.2	136.0
EBITDA Margin (%)	53.5	56.2	43.4	39.0
EBIT Margin (%)	37.1	42.3	34.0	32.8
Payout ratio (%)	0.0	0.0	0.0	0.0
ROE (%)	21.2	13.4	18.3	32.6
Capex/sales (%)	160.2	8.7	47.0	81.2
Capex/depreciation (x)	9.8	0.6	5.0	13.2
Net debt/equity (%)	439.6	119.0	101.3	133.7
Net interest cover (x)	1.4	1.6	3.0	4.4

Source: Company data, Deutsche Bank estimates

Investment thesis

Outlook

We downgrade IRB Infrastructure to Sell as: (1) our revised target price of INR130/share implies 9% downside; (2) the rising interest rate scenario implies an increased cost of financing. Note that the road BOT projects are highly leveraged and generally have a three--year reset clause; (3) rising crude oil prices and freight costs may slow down traffic growth; (4) the prime driver of earnings growth in the forecast period is revenue from toll collections at the new Surat-Dahisar project. Note that in these new road projects, depreciation and interest are charged only after completion of the project. Thus unless the company wins additional projects with similar concession agreements, earnings would decline 7% in FY2011e. Our assumptions factor in 250km of awards p.a. vs. 1900km of potential awards, which could mean peak earnings for IRB in FY2011e in this round of investments.

Valuation

We have used an average of sum-of-the-parts (SOTP) and exit PE multiple methodologies.

- IRB's SOTP valuation has three components: (i) The BOT toll road business by discounting cash flows from toll operations. Our model uses a cost of equity of 15% based on a risk-free rate of 8.2% (in line with DB estimates), risk premium of 4.7% (in line with DB estimates) and beta of 1.4 (as the stock's trading history is not long enough, we have taken the beta for the utility index). (ii) The engineering and construction business at 5x FY09e EV/EBITDA, based on comparable multiples of Indian construction peers. Our 5x assumption reflects IRB's above-average margins. (iii) The Real Estate business has been valued at cost of investments. This methodology gives a consolidated value of INR120/share.
- In addition, we also have an exit PE multiple of 7x FY10e (20% discount to Asian peers as 3 major road projects are yet to become operational), which gives a value of INR136/share.

  The average target price based on the above two methodologies is INR130/share.

Risks

Company-specific risks: (i) the timely execution of projects; (ii) the ability to raise a high amount of long-term debt on a non-recourse basis; and (iii) the failure to expand beyond the Western region. A 1ppt rise in traffic growth can impact our valuation by +4% and vice versa. A 1ppt lower-than-expected margin in the Engineering and Construction business could affect FY09e earnings by 6%. Industry-wide risks: (i) a delay in the implementation of the NHDP programme by NHAI and various state government entities; and (ii) spiraling wages and a shortage of skilled manpower.

Assumptions and forecasts

Key assumptions

We have factored in a few changes to our key assumptions:

- We have increased interest cost from 10.5% to 13% to factor in a rise in the prime lending rate (PLR) by various banks. Banks have increased their PLR from 10.25-11% to 12.75-15% over the last two years.
- We have increased the COE from 14% to 15% to factor in the increasing equity risk premium.

Based on our new set of assumptions, we have revised our FY09e and FY10e estimates.

Figure 217: Snapshot of financials (INR m)

	FY09e			FY10e		
	Old estimates	New estimates	Change (%)	Old estimates	New estimates	Change (%)
Interest	1,275	1,579	24	1,910	2,365	24
PAT (Post minority)	3,008	2,738	(9)	6,885	6,461	(6)

Source: Deutsche Bank

Valuation

We have used an average of sum-of-the-parts (SOTP) and exit PE multiple methodologies. The SOTP calculation is the total value of the three segments of the company, i.e. BOT, E&C and Real Estate as shown in Figure 218:

Figure 218: SOTP valuation

Sub-Total	INR m	Remark
BOT project NPV	28,654	Sum of NPVs of BOT (@15% CoE vs. 14% earlier)
E&C	6,837	at 5x FY09e EBITDA less debt of E&C
Real Estate	545	IRB's share of book value
Cash in hold Co	3,719	Excluding cash generated by SPVs
Total	39,756	
No. of shares post issue	332	
Price	120	

Source: Deutsche Bank

- The BOT toll road business: We discount the cash flows from toll operations. Our model uses a cost of equity of 15% based on a risk-free rate of 8.2% (in line with DB estimates), a risk premium of 4.7% (in line with DB estimates), and beta of 1.4 (as the stock's trading history is not long enough, we have taken the beta for the utility index).
- The Engineering and Construction business: We use 5x EV/EBITDA FY09e (residual net value of developers business), based on comparable multiples of Indian construction peers.
- The Real Estate business: We value it at the cost of investments.

This methodology gives a consolidated value of INR120/share.

In addition, we have an exit PE multiple of 7x FY10e (a 20% discount to Asian peers), which gives a value of INR136/share. This leads us to our target price of INR130/share – the average of the above two methodologies.

Figure 219: Comparative valuation

	16-Jul-08			--------------PE(x)--------------			-----------EV/EBITDA (x)--------			-----------ROE (%)--------		
	Price	Currency	Mkt cap (mn)	FY 08	FY 09e	FY 10e	FY 08	FY 09e	FY 10e	FY 08	FY 09e	FY 10e
Bangkok Expressway	15.7	THB	12,089	13.0	8.0	7.2	7.9	6.4	5.7	8.9	9.3	7.2
Plus Expressway	2.7	MYR	13,650	12.6	11.0	10.3	10.6	9.4	9.1	26.7	25.2	10.3
Zhejiang Expressway	6.0	CNY	22,940	14.7	10.0	9.3	8.2	5.5	4.7	19.2	16.9	9.3
Shenzhen Expressway	4.4	CNY	16,757	20.8	12.2	11.0	22.2	23.5	16.0	9.7	9.3	11.0
Jiangsu Expressway	6.5	CNY	28,778	21.7	15.8	13.4	11.7	9.4	8.3	11.7	12.6	13.4
Average				16.6	11.4	10.2	12.1	10.8	8.8	15.3	14.6	10.2

Source: Deutsche Bank

Sensitivity

We have assumed traffic growth of 6% p.a. If there is a 1% variance in actual traffic growth from our assumptions, the value could change by 9%. Accordingly, the impact of variance in traffic growth contributes to ~6% of the value of the company as a whole.

Figure 220: Sensitivity of the BOT project value to cost of equity and traffic growth

	13%	14%	15%	16%	17%	18%
2% lower	76	69	63	57	52	48
1% lower	91	83	76	69	64	59
Base case	102	94	86	79	73	68
1% higher	112	103	95	88	81	76
2% higher	121	112	103	96	89	83

Source: Deutsche Bank

Similarly, the impact of a 1% rise in interest impacts the value of the company by ~+/-5%.

Figure 221: Sensitivity of the BOT project value to cost of interest and traffic growth

	13%	14%	15%	16%	17%	18%
2% lower	71	67	63	59	55	50
1% lower	84	80	76	72	67	63
Base case	94	90	86	82	78	74
1% higher	103	99	95	91	87	83
2% higher	112	107	103	99	95	91

Source: Deutsche Bank

Asia India
Conglomerates

18 July 2008

Lanco

Reuters: **LAIN.BO**

Guidance seems optimistic; Initiate with Sell

Hurt by credit tightness; Initiate with Sell
Although the headline valuations may appear cheap after a 68% YTD fall in stock price, we see significant downside risks to earnings, FCF from rising commodity prices and hardening interest rates. In a worst case scenario, the company's earnings could be 10-50% lower than our estimates. Either way, despite the seemingly low valuations, the high risk to earnings and likely negative newsflow primarily flowing due to our view of slowdown in capex cycle prevents us from taking a positive view. Initiate with Sell TP of INR205/sh (-32%).

Can Lanco earn super-normal returns from competitively bid projects?
Lanco Infratech Ltd (LIL) has won 2500MW of power projects under competitive bids. In addition, the company has committed to a port, real estate, and toll road build up by FY11-15e. In the event the company is able to sustain extremely low capex, without time over-runs-there is a low probability of the company getting 20% ROEs in regulated return projects.

More than EPS- it is the balance sheet's strength that is important
While our estimates are below consensus, we view the strength of the balance sheet as a more important variable. Our stress test on the FCF generation suggests that a risk of dilution for constructing ongoing projects of INR18bn. Based on our sectoral view on downcycle, we see greater risk of escalations in project cost, execution delays hurting returns as well as cash flows.

TP of INR205/sh; key risks are easy credit and completion w/o cost overruns
Our TP of INR205/sh is based on a SOTP valuation of (1) the E&C division at INR107/sh, (2) the exiting operational power assets at INR29/sh, (3) investments at INR55/sh, (4) the trading division at INR11/sh, and (5) toll roads at INR3/sh. Key upside risks are easy credit availability, the completion of projects without cost overruns, and the benefits (if any) from regulatory framework.

Forecasts and ratios

Year End Mar 31	2006A	2007A	2008E	2009E	2010E
Sales (INRm)	1,471.0	16,057.7	**32,412.6**	57,034.4	81,809.7
EBITDA (INRm)	167.2	4,198.0	**6,905.2**	11,193.8	15,969.5
Reported NPAT (INRm)	91.5	1,869.5	**3,541.7**	4,675.7	6,460.1
Reported EPS FD (INR)	5.95	14.92	**16.11**	21.27	29.39
DB EPS FD (INR)	5.95	14.92	**16.11**	21.27	29.39
DB EPS growth (%)	–	151.0	**8.0**	32.0	38.2
PER (x)	–	14.8	**18.7**	14.1	10.2
EV/EBITDA (x)	–	10.6	**22.4**	17.0	15.0

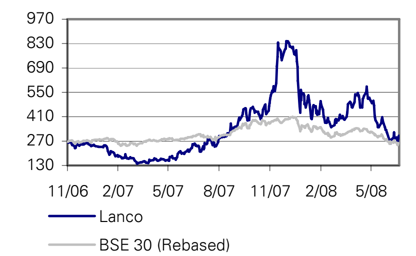
Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

Sell

Price at 18 Jul 2008 (INR)	**300.75**
Price target - 12mth (INR)	**205.00**
52-week range (INR)	**844.45 - 209.30**
BSE 30	**13,112**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-26.1*	*-37.5*	*23.8*
BSE 30	*-15.0*	*-20.4*	*-14.3*

Stock data

Market cap (INRm)	**66,103**
Market cap (USDm)	**1,544**
Shares outstanding (m)	**219.8**
Major shareholders	**Promoters (73.61%)**
Free float (%)	**25**
Avg daily value traded (USDm)	**21.2**

Key indicators (FY1)

ROE (%)	**19.8**
Net debt/equity (%)	**369.4**
Book value/share (INR)	**94.35**
Price/book (x)	**3.2**
Net interest cover (x)	**7.4**
Operating profit margin (%)	**18.9**

Infrastructure Research Team

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:11 July 2008

Running the numbers

Asia

India

Conglomerates

Lanco

Reuters: LAIN.BO Bloomberg: LANCI IN

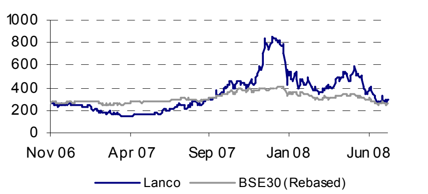
Sell

Price (18 Jul 08)	INR 300.75
Target price	INR 205.00
52-week Range	INR 209.30 - 844.45
Market Cap (m)	INRm 66,103 USDm 1,544

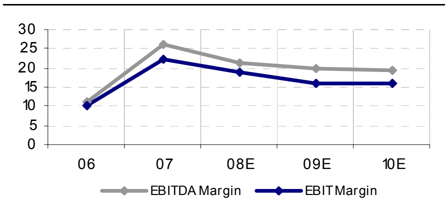
Company Profile

Lanco group is a leading infrastructure group in India having engineering and construction business along with the development and operation of power plants, roads and real estate. Lanco has earlier won the 1000MW Anpara C project under international competitive bidding. Lanco group is currently developing 20 mn sqft of residential and commercial property in Hyderabad.

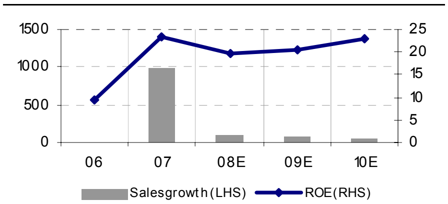
Price Performance



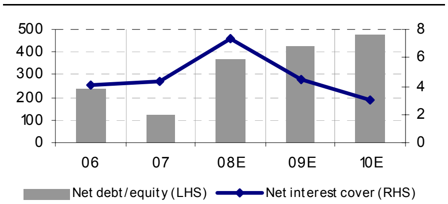
Margin Trends



Growth & Profitability



Solvency



Deepak Agrawala

+91 22 66584214 deepak-m.agrawala@db.com

Fiscal year end 31-Mar	2006	2007	2008E	2009E	2010E
Financial Summary					
DB EPS (INR)	5.95	14.92	16.11	21.27	29.39
Reported EPS (INR)	5.95	14.92	16.11	21.27	29.39
DPS (INR)	0.00	0.00	1.00	1.00	1.00
BVPS (INR)	31.0	68.7	94.4	114.5	142.7
Weighted average shares (m)	15	125	220	220	220
Average market cap (INRm)	na	27,593	66,103	66,103	66,103
Enterprise value (INRm)	na	44,293	154,332	189,802	239,157
Valuation Metrics					
P/E (DB) (x)	na	14.8	18.7	14.1	10.2
P/E (Reported) (x)	na	14.8	18.7	14.1	10.2
P/BV (x)	0.00	2.30	3.19	2.63	2.11
FCF Yield (%)	na	nm	nm	nm	nm
Dividend Yield (%)	na	0.0	0.3	0.3	0.3
EV/Sales (x)	nm	2.8	4.8	3.3	2.9
EV/EBITDA (x)	nm	10.6	22.4	17.0	15.0
EV/EBIT (x)	nm	12.5	25.2	20.7	18.4
Income Statement (INRm)					
Sales revenue	**1,471**	**16,058**	**32,413**	**57,034**	**81,810**
Gross profit	**184**	**4,599**	**7,822**	**12,252**	**17,341**
EBITDA	**167**	**4,198**	**6,905**	**11,194**	**15,969**
Depreciation	19	656	776	2,010	2,976
Amortisation	0	0	0	0	0
EBIT	**148**	**3,542**	**6,129**	**9,184**	**12,993**
Net interest income(expense)	-36	-829	-832	-2,067	-4,255
Associates/affiliates	0	0	-75	0	0
Exceptionals/extraordinaries	0	0	0	67	81
Other pre-tax income/(expense)	13	416	953	522	798
Profit before tax	**125**	**3,130**	**6,250**	**7,706**	**9,618**
Income tax expense	33	472	1,405	2,019	2,442
Minorities	0	788	1,229	1,011	716
Other post-tax income/(expense)	0	0	0	0	0
Net profit	**91**	**1,870**	**3,542**	**4,676**	**6,460**
DB adjustments (including dilution)	0	0	0	0	0
DB Net profit	**91**	**1,870**	**3,542**	**4,676**	**6,460**
Cash Flow (INRm)					
Cash flow from operations	**-544**	**3,377**	**2,515**	**1,861**	**13,689**
Net Capex	-428	-24,637	-69,170	-29,279	-49,856
Free cash flow	**-972**	**-21,260**	**-66,655**	**-27,418**	**-36,167**
Equity raised/(bought back)	308	1,890	0	0	0
Dividends paid	0	0	-257	-257	-257
Net inc/(dec) in borrowings	1,398	15,701	59,201	50,112	50,863
Other investing/financing cash flows	-877	-2,177	1,500	500	1,000
Net cash flow	**-143**	**-5,846**	**-6,212**	**22,937**	**15,439**
Change in working capital	*0*	*0*	*0*	*0*	*0*
Balance Sheet (INRm)					
Cash and other liquid assets	414	5,050	1,283	24,364	39,948
Tangible fixed assets	409	24,390	92,785	120,053	166,932
Goodwill/intangible assets	0	0	0	0	0
Associates/investments	2,732	10,441	11,814	13,996	13,235
Other assets	546	7,602	16,465	29,229	38,052
Total assets	**4,101**	**47,483**	**122,346**	**187,641**	**258,167**
Interest bearing debt	2,977	28,429	96,334	156,056	219,518
Other liabilities	32	187	282	427	572
Total liabilities	**3,009**	**28,616**	**96,617**	**156,482**	**220,089**
Shareholders' equity	954	15,105	20,738	25,156	31,359
Minorities	138	3,763	4,992	6,003	6,719
Total shareholders' equity	**1,092**	**18,868**	**25,729**	**31,159**	**38,078**
Net debt	*2,563*	*23,379*	*95,051*	*131,692*	*179,570*
Key Company Metrics					
Sales growth (%)	nm	991.6	101.9	76.0	43.4
DB EPS growth (%)	na	151.0	8.0	32.0	38.2
EBITDA Margin (%)	11.4	26.1	21.3	19.6	19.5
EBIT Margin (%)	10.1	22.1	18.9	16.1	15.9
Payout ratio (%)	0.0	0.0	6.2	4.7	3.4
ROE (%)	9.6	23.3	19.8	20.4	22.9
Capex/sales (%)	29.1	153.4	213.4	51.3	60.9
Capex/depreciation (x)	22.6	37.6	89.2	14.6	16.7
Net debt/equity (%)	234.7	123.9	369.4	422.6	471.6
Net interest cover (x)	4.1	4.3	7.4	4.4	3.1

Source: Company data, Deutsche Bank estimates

Investment thesis

Outlook

We believe that the capex cycle has turned and there are downside risks in the immediate term from execution risk and rising commodity prices. In this environment, we believe that there could be risk to the consensus estimates. Accordingly we initiate coverage of Lanco Infratech with a Sell. Other key challenges for the company are (1) Lanco Infratech has been pursuing aggressive growth plans despite a weak balance sheet. The company has about 3550MW of power capacities under construction. The company has won further projects worth 2500MW under competitive bidding. It remains to be seen whether this capex would require equity dilution. Further rising cost of debt would also impair project returns (2) There is a risk of rising capex cost at time of tight supply scenario. This could also reduce project IRRs. (3) Company E&C margins at 20% - one of the best in India could be at risk from rising commodity prices and tightness in execution. Our assumptions factor in 300 bps decline in E&C margins till FY10e. (4) Our estimates are below consensus. However as stated earlier, we view the strength of the balance sheet as a more important variable in economic downturn. Our stress test on FCF generation suggests a risk of dilution of INR18bn for constructing ongoing projects.

Valuation

We have valued Lanco on a SOTP basis to estimate our 12-month TP of INR205/sh. There are five broad primary divisions in SOTP:

- The E&C division is valued at a P/E of 6x FY10e giving a value of INR107/sh. This multiple is in-line with other mid-cap construction companies and represents the lowest level of the trading band for construction companies.
- The company has operating power assets of 514 MW. We have valued these assets on a NPV basis at a CoE of 15% (risk free rate of 8.2%, risk premium of 4.7%, and beta of 1.5), giving a value of INR29/sh.
- Investments in real estate, new power projects (1705MW), and others are valued at the cost of investment. This gives a value of INR55/sh.
- The trading division is valued at INR11/sh, based on a P/E of 20x FY10e, in-line with comparable peers such as Tata Power Trading and Power Trading Corporation.
- The road projects are valued at INR3/sh on a NPV basis at a CoE 15%.

Risks

The key upside risk for the company is essentially on the balance sheet side. If the company can infuse equity in the balance sheet at attractive valuations, there is a possibility of a jump in valuation for the stock. Even the availability of easy credit could accelerate the pace of the execution of company's projects. Since the company has bid for a lot of projects under competitive bids, any process that allows a pass through for variation in capital cost could benefit existing shareholders.

Aggressive play in the sector

Capacity addition by 22x to 11.6GW

Lanco Infratech Ltd. (LIL) has set itself an ambitious plan: to reach capacity of ~11.6GW over the next seven years. This will be achieved through aggressive competitive bidding, acquisitions, greenfield/brownfield expansions, etc.

Competitive player in competitive bidding

Since the release of the competitive bidding scenario in India in 2005, LIL has emerged as one of the fiercest bidders. Figure 222 indicates the projects won by the company. An interesting point to note: the company's bids have been lower than the next lowest bidder by 12-19%.

Figure 222: Results of competitive bidding

	Project Size (MW)	Lanco's bid (won)	% lower than L2 bidder	% lower than L3 bidder
Anpara C	1000	1.91	12	32
Sikkim hydro project	500	2.32	NA	NA
Case I bidding for MP	600	2.34	13	21
Case I bidding for Haryana	400	2.35	19	25

Source: Deutsche Bank, Company, Electricity Regulatory Commission

Pursuit of acquisitions and brownfield expansions

Unlike its peers, the company has grown inorganically, as it acquired a 74% stake in the 1015MW Nagarjuna project. This gave the company a significant headstart in terms of the readiness of the project, as it is currently under construction. In addition, LIL has pursued brownfield expansions that offered scalability and hastened the execution process. These include the Amarkantak expansion of 600MW and the Kondapalli expansion of 400MW.

However, given the environment of rising losses at distribution companies and spiralling capital cost, we believe that some of the projects under development might face cost overruns. Accordingly, we have considered only half of the capacities (i.e. 7.2GW) as additions by FY15e.

Diversified power sale arrangements

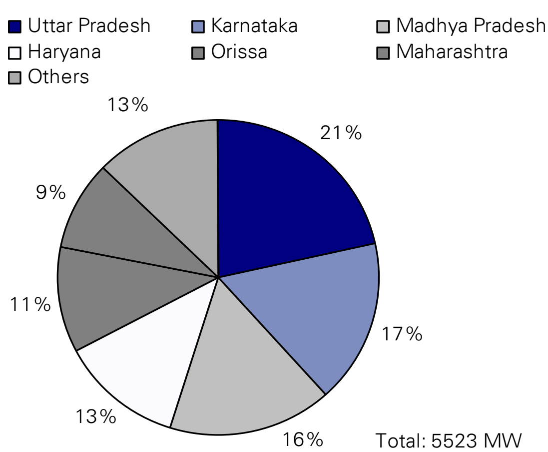
Currently, all revenue is realized from the operating plants in Karnataka and Andhra Pradesh. However, in the future, the largest exposure will be to the Uttar Pradesh State Electricity Board (SEB), followed by the Karnataka SEB, and the Madhya Pradesh SEB.

Figure 223: Exposure to various state-level distribution companies for power sales

State-level distribution companies	Quantum of sale proposed to distribution company in States	Ratings (2006)
Uttar Pradesh	1,200	18
Karnataka	917	4
Madhya Pradesh	900	20
Haryana	700	19
Orissa	600	21
Maharashtra	500	8
Others	707	
Andhra Pradesh	386	1
Tamil Nadu	129	10
Punjab	122	13
PTC (w/o back-to-back)	70	
Total	**5,523**	

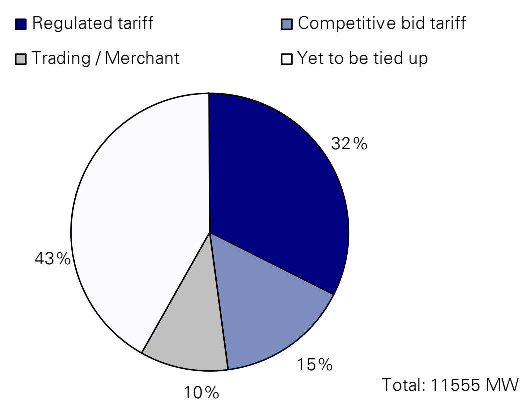
*Source: Deutsche Bank, *Performance rating assigned by CRISIL and ICRA and submitted to Ministry of Power*

Figure 224: State-wise mix of power sales



Source: Deutsche Bank, Company

Figure 225: Power sale arrangement



Source: Deutsche Bank, Company

About 32% of the capacity is based on a regulated two-part tariff structure, with a RoE of 14%. We need to see whether the company can deliver higher returns over the regulated levels. The company has yet to tie a balance of 43% of the power sale arrangement.

How strong is the balance sheet?

Stress test on the balance sheet

While at the current juncture, we believe that the only realistic expansion plan is for projects at the commissioning stage. A look at various scenarios suggests that the balance sheet is quite stressed by the rise in capital cost and the insistence of higher equity requirements by financial institutions. As seen in Figure 226, our stress test on FCF generation suggests a risk of dilution of INR18bn for ongoing projects under construction projects if there is a 10% cost escalation and 70:30 debt-to-equity funding.

Figure 226: Stress test on the balance sheet

Events	Financing mix	Additional equity financing required
Delayed projects Projects getting delayed resulting in		
-------Revenue from E&C division reduction by 10%	NA	6
-------EBITDA from E&C division reduction by 200 bps	NA	1.1
-------Working capital cycle from E&C division increases by 10 days	NA	1.1
Capital cost increases by		
--------0% (Base case)	80 : 20	NIL
--------0%	70 : 30	14
--------5%	80 : 20	1.4
--------5%	70 : 30	15.9
-------10%	80 : 20	2.8
-------10%	70 : 30	18.0

Source: Deutsche Bank

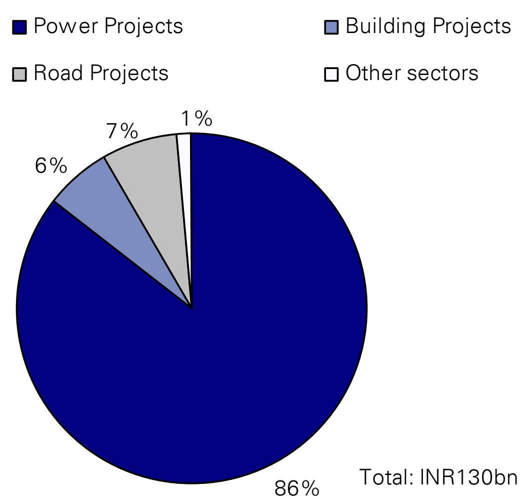
Assumptions and forecasts

Assumptions

E&C business

Lanco's E&C division has an order book of USD3.2bn, consisting primarily of internal power projects (86%) that have execution times of 1-5 years. The company is only engaged in the E&C business for power, and the main plant order has been placed to Dongfang Electric, China for most of the power projects. The balance of orders comes from buildings and road projects that will have an execution time of six months to three years. Accordingly, we have assumed a revenue CAGR of ~61% (standalone) for FY08-10e, a significant drop from a CAGR of 222% for FY06-08.

Figure 227: Order book as of March 31, 2008



Source: Deutsche Bank, Company

Figure 228: Standalone assumptions

	FY07	FY08e	FY09e	FY10e
Revenue (% yoy growth)	251	196	100	30
RM/Sales (x)	75	73	75	76
Employee expenses (% yoy growth)	218	342	100	30
As % of Sales	2.6	3.9	3.9	3.9

Source: Deutsche Bank, Company

The recent wins in competitive bids, brownfield expansion projects, and progress in achieving financial closure could lead to a potential order inflow of INR117bn over the next 1-2 years.

Figure 229: Potential internal orders

Additional Projects	Sector	Order size (INR mn)
Amarkantak expansion	Power	19,680
Uttaranchal hydro project	Power	8,208
Orissa project	Power	88,704
Total		**116,592**

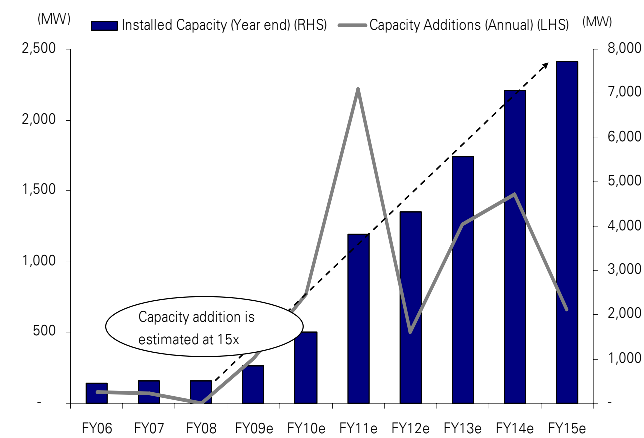
Source: Deutsche Bank

Power

The following are our key assumptions for the company's power division:

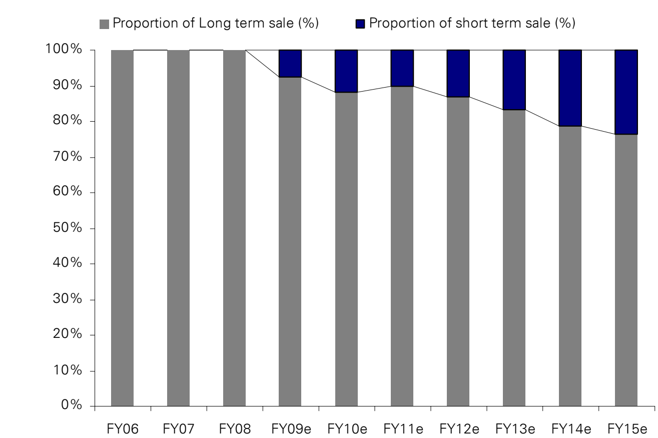
- Capacity addition: We have assumed those projects under construction (1200MW Amarkantak, 1015MW Nagarjuna and hydel projects aggregating 742MW) and those projects having power-sale arrangement tied up (400MW Kondapalli expansion project and 2640MW Orissa project).
- Sales mix: Unlike its peers, the company has the bulk of its capacity operating or developing on a regulated business model with a 14% RoE. Based on the sales mix of each of the projects, we estimate that ~ 1/4th of the sales will be through merchant route by FY15e.

Figure 230: Annual capacity addition and installed capacity



Source: Deutsche Bank, Company

Figure 231: Sales mix



Source: Deutsche Bank, Company

Figure 232: Key assumptions for Power projects

		FY06	FY07	FY08e	FY09e	FY10e
Installed Capacity		445	518	518	838	1,208
Capacity Additions	MW	77	73	-	320	770
Generation	bn units	2.7	2.7	3.3	5.1	9.0
Electricity sales	bn units	2.6	2.6	3.1	4.8	8.3
Proportion of Long term sale	%	100	100	100	92	88
Proportion of short term sale	%	-	-	-	8	12
Average Tariff	INR/unit	2.64	3.11	3.52	3.04	2.83
Regulated/Competitive bidding	INR/unit	2.64	3.11	3.52	3.08	2.86
Merchant/Short term	INR/unit	-	-	-	2.60	2.65

Source: Deutsche Bank, Company

The assumptions related to the timeline for commercial operations, capital cost, fuel cost, etc., for each of the projects are shown in Figure 233.

Figure 233: Project-specific assumptions

Projects	Size (MW)	Commercial Operation of Plant	Capital Cost (INR mn/MW)	PLF (%)	Landed Fuel Cost (INR/t)	Station Heat Rate (kcal/kWh)	O&M expenses (INR mn/MW)
Amarkantak Project (Ph I)	300	Jul-08	41	82	925	2,450	1.3
Amarkantak Project (Ph II)	300	Apr-09	41	82	925	2,450	1.3
Amarkantak Project (expansion)	600	Apr-12	41	82	925	2,450	1.3
Anpara Project	1200	Oct-10	41	82	925	2,450	1.3
Nagarjuna project	1015	Sep-10	43	82	2,697	2,400	1.3
Orissa Project	2640	Apr-14	48	82	970	2,450	1.3
Sikkim hydel project	500	Oct-11	66	55	NA	NA	0.6
Vamshi hydro projects	20	Jul-08	53	55	NA	NA	0.6
Lanco Green	70	Apr-09	53	55	NA	NA	0.6
Uttaranchal hydel project	152	Apr-13	66	55	NA	NA	0.6
Kondapalli project (expansion)	400	Aug-10	35	75	5*	1,800	2.9

Source: Deutsche Bank

The projects are assumed to be funded in the debt-to-equity ratio of 80:20 for all the projects, except the Orissa project (70:30) and the Kondapalli expansion (100:0). The cost of debt is assumed at 12%, and the repayment tenure is assumed to be 12 years for thermal projects and 15 years for hydro projects. This is in-line with the terms usually offered by Indian lenders to various infrastructure projects, and factors into the rising interest rate environment.

Road projects

The company is currently developing two road projects comprising 163 kms in Karnataka. Figure 234 highlights the key assumptions for the two road projects that the company is developing on a BOT basis.

Figure 234: Key assumptions for road projects

		NHAI stretch	
Parameters	**Units**	**Bangalore - Mudbagal**	**Neelmangla - Devihalli**
Base year traffic	PCUs	27,350	23,500
Yoy growth in traffic	%	6	6
Base year toll charge	INR/PCU	47	47
Annual Escalation in toll rate	%	5	5
Capital cost	INR mn	7360	6120
Debt:Equity:Grant	x	2: 1:1	2: 1:1
O&M expenses	% of capital cost	1	1
Annual Escalation in toll rates	%	2	2
Commencement Date		Oct-10	Oct-10
Interest rate	%	12	12
Repayment period for Debt	years	10	10

Source: Deutsche Bank

Financial forecasts

On a standalone basis, revenue is estimated to grow at a ~60% CAGR for FY08-10e. The EBITDA margin is estimated to drop by 300 bps while earnings growth is estimated to grow at a ~40% CAGR.

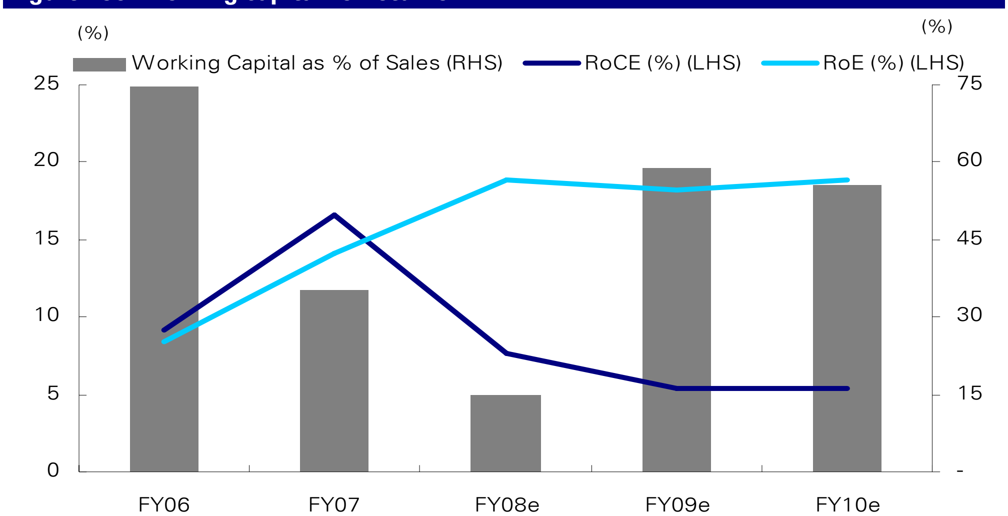
Figure 235: Financial forecasts (INR bn)

	FY06	FY07	FY08e	FY09e	FY10e
Standalone					
Revenue	1.5	5.3	15.7	31.5	40.9
EBITDA	0.2	1.0	3.1	5.7	6.9
EBITDA margin (%)	12	20	20	18	17
Depreciation	0.04	0.04	0.1	0.3	0.6
Interest	0.02	0.2	0.3	0.7	1.2
Tax	0.0	0.3	1.0	1.7	2.0
Net Income	0.1	0.7	2.0	3.4	3.9
Consolidated					
Revenue	1.5	16.1	32.4	57.0	81.8
EBITDA	0.2	4.2	6.9	11.2	16.0
EBITDA margin (%)	11	26	21	20	20
Depreciation	0.02	0.7	0.8	2.0	3.0
Interest	0.04	0.8	0.8	2.1	4.3
Tax	0.03	0.5	1.4	2.0	2.4
Net Income (after minority interest)	0.2	1.9	3.5	4.7	6.5

Source: Deutsche Bank, Company

All the power and road businesses are through individual SPVs. We have consolidated the financials of all the SPVs with the standalone businesses on a subsidiary accounting method. At the consolidated level, the revenue is estimated to grow at a ~59% CAGR during FY08-10e driving earnings to grow at an estimated CAGR of ~35%. Our earnings model indicates a flat ROE while RoCE seems to have peaked in FY07.

Figure 236: Working capital vs. returns



Source: Deutsche Bank, Company

Our earnings estimates are below consensus by 28% in FY09e and 34% in FY10e.

Figure 237: Our estimates are in the Street's lowest quartile

	FY09e			FY10e		
	DB	Consensus	% Variance	DB	Consensus	% Variance
Revenue (INR bn)	57	67	(15)	82	99	(17)
EBITDA (INR bn)	11	16	(29)	16	25	(35)
EPS (INR/sh)	21	30	(28)	29	44	(34)

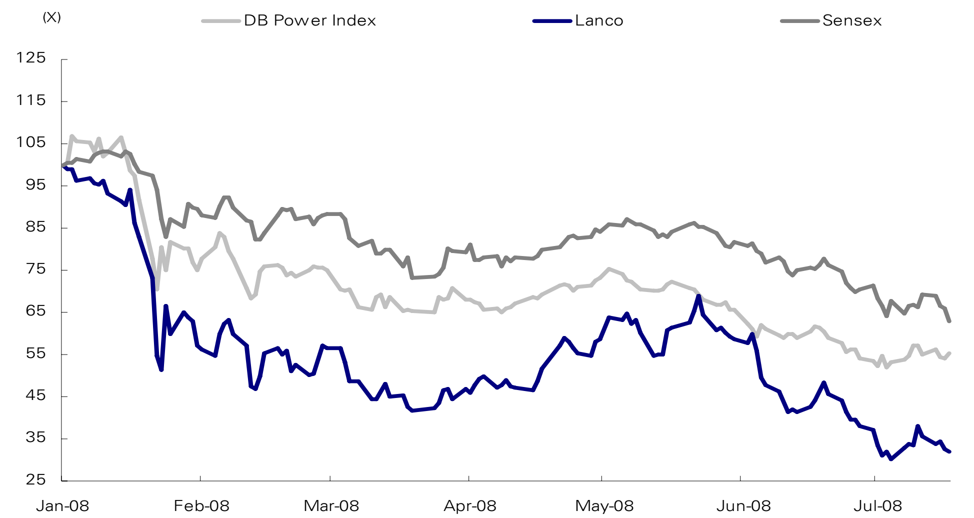
Source: Deutsche Bank, Bloomberg

Valuation and sensitivity analysis

Stock performance

Lanco's stock price is down 68% YTD, a significant underperformance across DB's coverage in utilities. It has under-performed the DB power index by 23% and 31% vs. the Sensex.

Figure 238: Lanco has underperformed both the DB power index and the Sensex

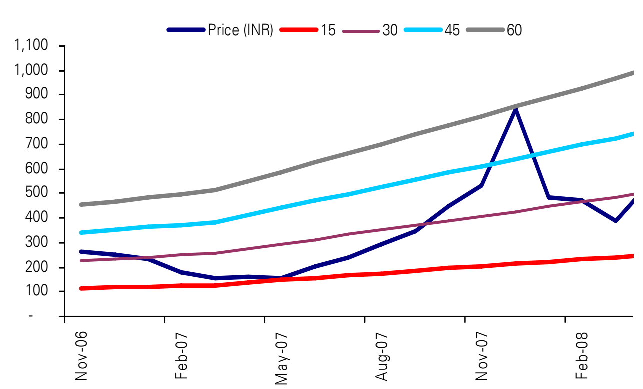


Source: Deutsche Bank, Bloomberg

Trading bands

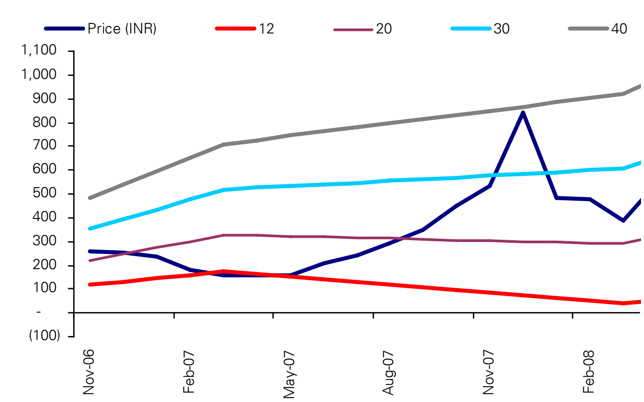
Lanco Infratech has a relatively short historical period (<2 years). The valuations, in our view, still do not factor the down-cycle into the execution of projects.

Figure 239: 1-year forward P/E band



Source: Deutsche Bank, Bloomberg

Figure 240: 1-year forward EV/EBITDA band



Source: Deutsche Bank, Bloomberg

SOTP methodology gives a value of INR205/sh

We have used a SOTP methodology to estimate the value of the company.

- The standalone E&C business is valued at a P/E of 6x FY10e, giving a value of INR107/sh (52% of total value). This multiple is in-line with other mid-cap construction companies and represents the lowest level of trading band for construction companies.
- Operating power assets of 514 MW are valued on a NPV basis at a cost of equity of 15%, giving a value of INR29/sh (14% of total value). The cost of equity of 15% is based on a risk-free rate of 8.2% (in-line with DB's estimates), a risk premium of 4.7% (in line with DB's estimate) and a beta of 1.5 (based on Bloomberg's weekly stock prices since listing in Nov 2006).
- Investments in real estate, new power projects (1705MW total: 300MW each for Amarkantak I and II, 1015MW for the Nagarjuna project and 90MW for the hydro project), and others are valued at the cost of investments. This gives a value of INR55/sh.
- The trading division is valued at INR11/sh based on a P/E of 20x FY10e, in-line with comparable peers such as Tata Power Trading and Power Trading Corporation.
- Both the road projects are valued on a NPV basis at a cost of equity of 15%, giving a value of INR3/sh.

Based on the above methodology, the SOTP value is estimated at INR205/sh.

Figure 241: SOTP methodology

Businesses	Description	Equity Value (INR mn)	Value (INR/share)	Remarks
Standalone business	Engineering + Construction	23,579	107	P/E 6x FY10e in line with peers
Operating power generation assets	Kondapalli (368 MW) + Aban (120 MW) other	6,289	29	NPV at CoE of 15%
Trading	Power Trading	2,414	11	P/E 20 FY10e in line with PTC-comparable peer
Sub-Total		**32,282**	**147**	
Investments				
Investments		982	4	As per Annual report FY07
Power generation				
Amarkantak project (600 MW)		3,767	17	P/BV of 1x
Hydro project (90 MW)		742	3	P/BV of 1x
Nagarjuna project (1015 MW)		5,047	23	P/BV of 1x
Sub-Total		**9,556**	**43**	
Real Estate – Lanco Hills	Property (20 mn sq ft)	1,571	7	At value of investments as per Capital employed indicated in FY08 results
Sub-Total		**12,108**	**55**	
Roads (2 BOT projects aggregating 163 km)	Bangalore - Hoskote - Mudbagal (80 kms) + Neelmangla - Devihalli (82 kms)	595	3	NPV at CoE of 15%
Total	**Total**	**44,986**	**205**	

Source: Deutsche Bank

Sensitivity analysis

Figure 242 indicates the sensitivity to our earnings model.

- If revenue for the standalone E&C division increases by 10%, then earnings increase by 15% in FY09e and 33% in FY10e.
- Likewise, if RM/sales reduces by 100 bps for the standalone E&C division, then earnings increase by 6% for FY09e and 14% for FY10e.

Figure 242: Sensitivity analysis for the standalone business (E&C division)

Sensitivity	FY09e			FY10e		
	Sales	EBITDA margin (%)	EPS	Sales	EBITDA margin (%)	EPS
Base Case	31,491	18	15	40,938	17	18
Revenue:						
10% higher than our estimates	34,640	19	18	49,535	18	24
% change over Base Case	10	66	15	21	125	33
10% lower than our estimates	28,342	17	13	33,160	15	13
% change over Base Case	(10)	(80)	(15)	(19)	(169)	(30)
RM/Sales						
100 bps lower than our estimates	31,491	17	14	40,938	15	15
% change over Base Case	-	(100)	(6)	-	(200)	(14)
100 bps higher than our estimates	31,491	19	16	40,938	19	20
% change over Base Case	-	100	6	-	200	14

Source: Deutsche Bank

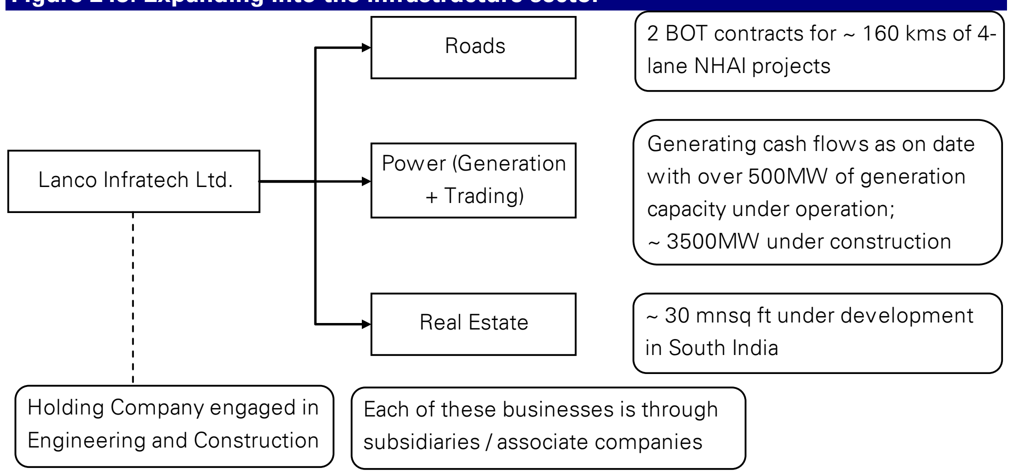
The other upside risk for the company is essentially on the balance sheet side. If the company can infuse equity into the balance sheet at attractive valuations, there is a possibility of a jump in valuation for the stock. Even the availability of easy credit could accelerate the pace of the execution of company's projects. Since the company bid for a lot of projects under competitive bids, any process that allows a pass through for variations in capital cost could benefit existing share-holders.

Appendix A: company background

Transition from a construction contractor to a developer

Over the last decade, the company has transitioned from a pure construction contractor to an infrastructure developer. Today, the company has over 500MW of power projects in operation across various locations and employing a variety of fuels. The company undertakes engineering and construction in-house for all its power / road projects.

Figure 243: Expanding into the infrastructure sector



Source: Deutsche Bank, Compan

The company is already engaged in the construction of power plants amounting to 3500MW. In addition, the company won two BOT road projects from NHAI in the state of Karnataka. The company has also ventured into the real estate business with three projects - two in Hyderabad and one in Chennai.

In the past, the company has executed several projects in the areas of power, roads, building, etc., as shown in Figure 244.

Figure 244: Executed orders over INR20bn

Project	Order Size (INR mn)	Sector	Remarks
Veeranam water supply pipeline, Tamil Nadu	2930	Pipelines	Pipeline network of 114 km
Balance of Plant for Kondapalli project	2560	Power	Internal projects
Balance of Plant for Aban project	NA	Power	Internal projects
Aswini Hospital	NA	Building Projects	--
4-laning of NH-31in West Bengal	NA	Roads	--

Source: Deutsche Bank

Projects portfolio

Power

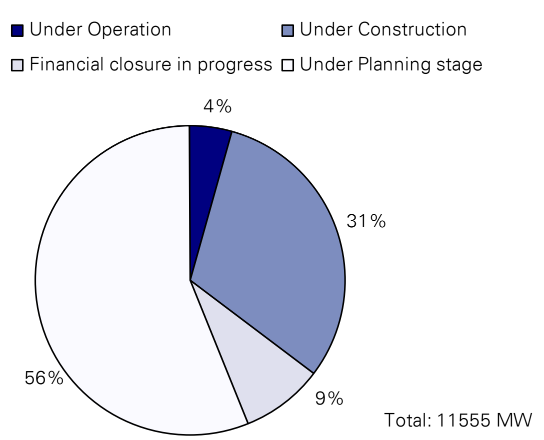
The company is on the verge of increasing its installed power generation capacity by ~21x over the next decade

Figure 245: Projects portfolio

Project	Subsidiary	% Ownership	Capacity (MW)	Fuel (Fuel Source)
Operating assets				
Kondapalli	Lanco Kondapalli Power Private Limited	59	368	Gas (Gas Authority of India)
Aban	Aban Power Company Limited.	51	120	Gas (Gas Authority of India)
Clarion	Clarion Power Corporation Limited.	97	12	Biomass
Rithwik	Rithwik Energy Systems Limited.	89	6	Biomass
Chitradurga			3	Wind
TN wind power		100	9	Wind
Sub-total			**518**	
Under Construction				
Amarkantak I & II	Lanco Amarkantak Power Pvt Ltd.	76	600	Domestic Coal - Linkage
Nagarjuna	Nagarjuna Power Corporation Ltd.	74	1,015	Imported Coal
Anpara C, Uttar Pradesh	--	100	1,200	Domestic Coal - Linkage
Vamshi, Himachal Pradesh	Lanco Hydro Power Ventures Pvt. Ltd.	91	20	Hydro
Budhil, Himachal Pradesh	Lanco Green Power Pvt Ltd.	90	70	Hydro
Teesta VI, Sikkim	Lanco Energy Pvt Ltd. (LEPL)	74	500	Hydro
Phata-Byung	Lanco Uttaranchal	90	152	Hydro
Sub-total			**3,557**	
Under development				
Amarkantak Expansion	Lanco Amarkantak Power Pvt Ltd.	76	600	Domestic Coal - Linkage
Kondapalli Expansion	Lanco Kondapalli Power Private Limited	59	400	Gas
Orissa thermal project			2640	Domestic Coal - Linkage + Captive Coal (Rampia block)
Madhya Pradesh thermal project			1200	Domestic Coal
Jharkhand thermal project			2640	Domestic Coal
Sub-total			**7,480**	-
Grand Total			**11,555**	-

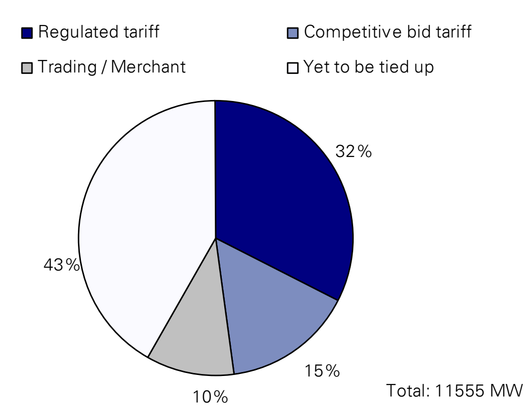
Source: Deutsche Bank,Company

Figure 246: Development stage of power projects



Source: Deutsche Bank, Company

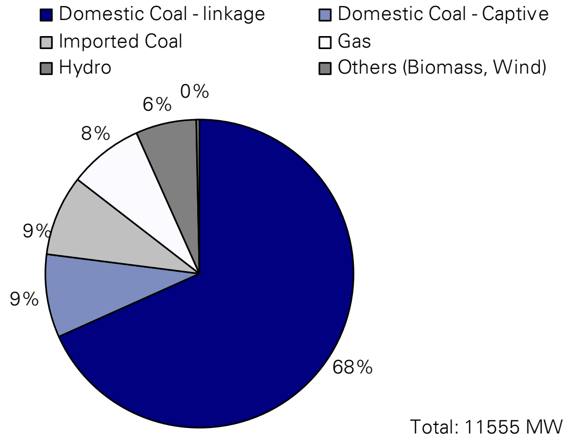
Figure 247: Power sale arrangement



Source: Deutsche Bank, Company

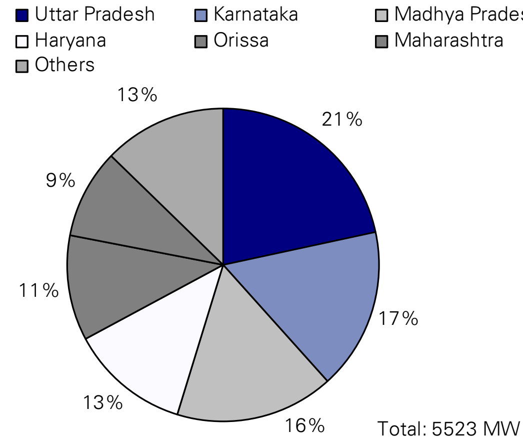
About 77% of the projects planned are for domestic coal. However, of the 3500MW under construction, 50% of the projects are for domestic coal with firm linkages, which most of the private sector gencos in the country are struggling to obtain.

Figure 248: Fuel-wise mix of power projects



Source: Deutsche Bank, Company

Figure 249: State-wise sales mix



Source: Deutsche Bank, Company

Roads

The company is developing two road projects in Karnakata on a BOT basis involving the 4-laning of the existing National Highway and are currently under construction.

Figure 250: Road projects

Stretch	Ownership	Cost (INR mn)	Length (km)	Concession period (years)
Bangalore - Hoskote - Mudbagal Highway	100%	7360	81	20
Neelmangla - Devihalli	100%	6120	82	25

Source: Deutsche Bank, Company

Real estate

The company has planned three real estate projects, as highlighted in Figure 251 with Lanco Hills (located in Hyderabad) – being its largest realty venture.

Figure 251: Real estate projects are concentrated in South India

Project	Land (acres)	Developed area (mn sq ft)	Usage
Lanco Hills, Hyderabad	108	20	IT SEZ, Commercial, Residential, Retail, Hotel
Integrated Township, Chennai	80	8	Residential
Hyderabad	21.8	NA	Residential

Source: Deutsche Bank, Company

Shareholding pattern

The shareholding pattern indicates a continual increase in FII holdings over the last year.

Figure 252: Continual increase in FII holdings

% Shareholding	Q3FY07	Q4FY07	Q1FY08	Q2FY08	Q3FY08	Q4FY08	Remarks
Promoter & promoter group	75	75	75	75	75	74	Marginal decline
Mutual Funds	2	1	3	2	2	1	Fluctuating
Banks / FIs	2	3	3	2	2	2	Fluctuating
FIIs	**8**	**9**	**7**	**11**	**13**	**13**	**Continual increase**
Public	12	12	12	9	9	10	Step reduction during H1FY08
Total	**100**	**100**	**100**	**100**	**100**	**100**	
Total No. of Shares	222	222	222	222	222	222	No change

Source: Deutsche Bank, BSE

Management

Lanco's top executives and directors include the following:

Figure 253: Senior executives at Lanco group

Sr. No.	Name of Personnel	Designation	Sr. No.	Name of Personnel	Designation
1	Mr. L M Rao	Chairman	8	Mr. K Raja Gopal	Director and CEO, Lanco Amarkantak
2	Mr. G B Rao	Exec Vice Chairman	9	Mr. Pradeep Laenka	CEO - Thermal
3	Mr. L Sridhar	Vice Chairman	10	Mr. Govind Sachdeva	CEO
4	Mr. G Venkatesh Babu	Managing Director	11	Mr. P Shenigarapu	CEO, Lanco Hills
5	Mr. DV Rao	Joint Managing Director	12	Mr. N Kandimalla	Director and CEO, Lanco Renewable
6	Mr. J Suresh Kumar	CFO	13	Mr. S Veluri	Director
7	Mr. P Rao	Director and CEO, Lanco Kondapalli	14	Mr. MN Ravi Shankar	Director

Source: Deutsche Bank

The number of employees in the engineering and construction division has grown significantly to, from 1200 people last year to ~2000 this year.

Asia India
Utilities Utilities

18 July 2008

NTPC Limited

Reuters: **NTPC.BO**

Still some pain left; downgrade to Sell

Valuations remain rich; downgrade to Sell
The stock has corrected 34% YTD, but it is still vulnerable to further correction. We believe that NTPC will face hurdles in coal mining and implementing thermal projects. It also runs the risk of having its gas projects shelved. Rising distribution losses act as a reminder of the risk of receivables - the previous cycle was 200+ days vs. 45 days currently. NTPC is a cost leader in India, and we estimate the valuations are a trifle expensive. Downgrade to Sell with a TP of INR135/sh (-18% downside).

Moderating growth expectations in the near-to-medium term
We estimate NTPC will add ~14.2 GW during FY09-12e, which is 32% lower than management's guidance. Likewise, the downside of coal from the captive mines may be delayed by a couple of years. In addition, the Empowered Group of Ministers' allocation of gas formula places risk on NTPC's gas-based capacities.

Generating higher RoE, but this may be at risk
NTPC's business RoE of +20% could be at regulatory risk. There is also risk on the long-term investment programme of the company. Our estimate, at the bottom of the Street, factors in some of these negatives.

Revised TP of INR135/sh; downgrade to Sell
We estimate the value of the company at INR135/sh based on the average of (a) DCF value of INR115/sh at a CoE of 14%, (b) a SOTP approach of INR155/sh using a P/BV of 1.5x for FY12e (discounted at 15% to FY10e) for the operating power assets, a P/BV of 1x for CWIP, investments, and cash, plus the valuation of the coal assets by NPV method (page 176). The key risks remain faster execution, a fall in distribution losses, and an improvement in global liquidity (page 177).

Forecasts and ratios

Year End Mar 31	2006A	2007A	2008E	2009E	2010E
Sales (INRm)	275,777.0	338,757.0	**370,501.0**	377,478.5	408,567.4
EBITDA (INRm)	81,561.0	101,731.0	**112,239.0**	108,382.3	116,546.9
Reported NPAT (INRm)	58,408.0	68,983.0	**75,688.0**	72,114.8	78,912.5
DB EPS FD (INR)	7.08	8.37	**9.18**	8.75	9.57
OLD DB EPS FD (INR)	7.08	8.37	**9.08**	9.29	10.56
% Change	0.0%	0.0%	**1.1%**	-5.9%	-9.4%
DB EPS growth (%)	0.2	18.1	**9.7**	-4.7	9.4
PER (x)	14.4	15.5	**18.0**	18.9	17.2
EV/EBITDA (x)	9.8	10.4	**12.8**	13.9	13.8
DPS (net) (INR)	2.81	3.21	**3.21**	3.22	3.52

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

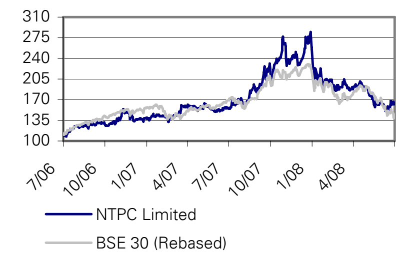
Sell

Price at 17 Jul 2008 (INR)	**165.00**
Price target - 12mth (INR)	**135.00**
52-week range (INR)	**284.95 - 151.05**
BSE 30	**13,112**

Key changes

Rating	Buy to Sell ↓	
Price target	220.00 to 135.00 ↓	**-38.6%**
Sales (FYE)	369,294 to 370,501 ↑	**0.3%**
Op prof margin (FYE)	24.4 to 24.5 ↑	**0.4%**
Net profit (FYE)	74,840.0 to 75,688.0 ↑	**1.1%**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-2.1*	*-13.1*	*6.2*
BSE 30	*-16.5*	*-20.4*	*-14.2*

Stock data

Market cap (INRm)	**1,360,501**
Market cap (USDm)	**31,773**
Shares outstanding (m)	**8,245.5**
Major shareholders	**President of India (89.5%)**
Free float (%)	**10.5**
Avg daily value traded (USDm)	**42.2**

Key indicators (FY1)

ROE (%)	**14.8**
Net debt/equity (%)	**40.3**
Book value/share (INR)	**64.56**
Price/book (x)	**2.6**
Net interest cover (x)	**5.1**
Operating profit margin (%)	**24.5**

Infrastructure Research Team

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:08 July 2008

Running the numbers

Asia

India

Utilities

NTPC Limited

Reuters: NTPC.BO Bloomberg: NATP IN

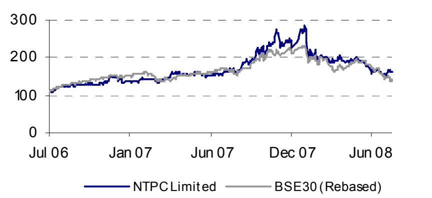
Sell

Price (17 Jul 08)	INR 165.00
Target price	INR 135.00
52-week Range	INR 151.05 - 284.95
Market Cap (m)	INRm 1,360,501 USDm 31,773

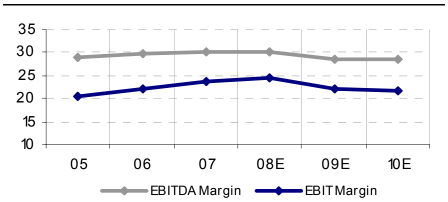
Company Profile

NTPC Limited (PSU incorporated in 1975) is the largest thermal-power generating company of India. It is the largest power utility of the country. The installed capacity of NTPC as on July 31, 2007 is 27,904 MW through its 15 coal based (22,895 MW), 7 gas/liquid fuel based (3,955 MW) and 4 joint-venture of which 3 coal based projects (314 MW) and 1 gas based project (740 MW). NTPC is aggressively adding up capacity through green field projects, expansion of existing stations, JV's, takeover of SEB`s stations, significant addition of hydro-capacity, and forays into non-conventional and nuclear power generation.

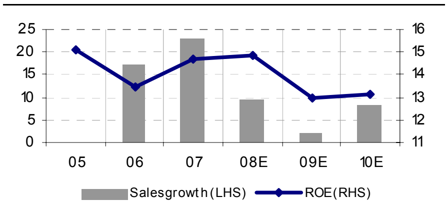
Price Performance



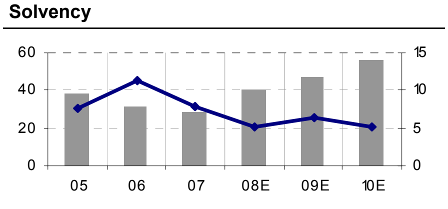
Margin Trends



Growth & Profitability



Solvency



Fiscal year end 31-Mar	2005	2006	2007	2008E	2009E	2010E
Financial Summary						
DB EPS (INR)	7.07	7.08	8.37	9.18	8.75	9.57
Reported EPS (INR)	7.07	7.08	8.37	9.18	8.75	9.57
DPS (INR)	2.40	2.81	3.21	3.21	3.22	3.52
BVPS (INR)	50.7	54.6	59.1	64.6	70.0	75.9
Weighted average shares (m)	8,245	8,245	8,245	8,245	8,245	8,245
Average market cap (INRm)	699,432	842,338	1,071,402	1,360,501	1,360,501	1,360,501
Enterprise value (INRm)	652,624	798,745	1,057,961	1,438,286	1,510,555	1,605,152
Valuation Metrics						
P/E (DB) (x)	12.0	14.4	15.5	18.0	18.9	17.2
P/E (Reported) (x)	12.0	14.4	15.5	18.0	18.9	17.2
P/BV (x)	1.69	2.46	2.53	2.56	2.36	2.17
FCF Yield (%)	10.0	nm	0.2	nm	nm	nm
Dividend Yield (%)	2.8	2.8	2.5	1.9	2.0	2.1
EV/Sales (x)	2.8	2.9	3.1	3.9	4.0	3.9
EV/EBITDA (x)	9.6	9.8	10.4	12.8	13.9	13.8
EV/EBIT (x)	13.5	13.1	13.1	15.8	18.3	18.3
Income Statement (INRm)						
Sales revenue	**235,161**	**275,777**	**338,757**	**370,501**	**377,478**	**408,567**
Gross profit	**80,612**	**94,709**	**117,789**	**131,339**	**118,171**	**128,019**
EBITDA	**68,081**	**81,561**	**101,731**	**112,239**	**108,382**	**116,547**
Depreciation	19,824	20,710	20,998	21,385	25,629	28,611
Amortisation	0	0	0	0	0	0
EBIT	**48,257**	**60,851**	**80,733**	**90,854**	**82,753**	**87,936**
Net interest income(expense)	-6,425	-5,427	-10,290	-17,981	-12,960	-16,644
Associates/affiliates	0	0	0	0	0	0
Exceptionals/extraordinaries	6,263	-2,846	34	1,540	3,102	3,565
Other pre-tax income/(expense)	12,980	13,829	19,137	29,676	20,361	27,170
Profit before tax	**54,812**	**69,253**	**89,580**	**102,549**	**90,154**	**98,462**
Income tax expense	2,789	7,999	20,631	28,401	21,142	23,114
Minorities	0	0	0	0	0	0
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	**58,286**	**58,408**	**68,983**	**75,688**	**72,115**	**78,912**
DB adjustments (including dilution)	0	0	0	0	0	0
DB Net profit	**58,286**	**58,408**	**68,983**	**75,688**	**72,115**	**78,912**
Cash Flow (INRm)						
Cash flow from operations	**124,649**	**81,729**	**88,448**	**95,546**	**123,279**	**138,709**
Net Capex	-54,759	-94,875	-86,048	-148,991	-167,714	-202,177
Free cash flow	**69,890**	**-13,146**	**2,400**	**-53,445**	**-44,436**	**-63,468**
Equity raised/(bought back)	4,330	0	0	0	0	0
Dividends paid	-23,397	-37,718	-30,383	-30,994	-31,084	-33,985
Net inc/(dec) in borrowings	16,350	53,919	45,398	97,939	125,478	150,134
Other investing/financing cash flows	-12,168	21,924	33,491	14,776	14,776	14,776
Net cash flow	**55,005**	**24,979**	**50,906**	**28,277**	**64,734**	**67,457**
Change in working capital	*38,768*	*13,144*	*-3,653*	*-18,095*	*7,055*	*9,666*
Balance Sheet (INRm)						
Cash and other liquid assets	61,096	86,075	136,981	165,258	233,785	305,322
Tangible fixed assets	322,433	396,598	461,648	589,254	731,339	904,905
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	207,977	185,922	151,428	136,652	121,876	107,099
Other assets	79,896	74,230	91,243	117,506	124,164	132,206
Total assets	**671,402**	**742,825**	**841,300**	**1,008,669**	**1,211,164**	**1,449,531**
Interest bearing debt	222,265	228,404	274,968	379,695	505,715	657,072
Other liabilities	31,061	64,415	78,729	96,677	128,328	166,332
Total liabilities	**253,326**	**292,819**	**353,697**	**476,372**	**634,043**	**823,404**
Shareholders' equity	418,076	450,006	487,603	532,297	577,121	626,127
Minorities	0	0	0	0	0	0
Total shareholders' equity	**418,076**	**450,006**	**487,603**	**532,297**	**577,121**	**626,127**
Net debt	*161,169*	*142,329*	*137,987*	*214,437*	*271,930*	*351,750*
Key Company Metrics						
Sales growth (%)	nm	17.3	22.8	9.4	1.9	8.2
DB EPS growth (%)	na	0.2	18.1	9.7	-4.7	9.4
EBITDA Margin (%)	29.0	29.6	30.0	30.3	28.7	28.5
EBIT Margin (%)	20.5	22.1	23.8	24.5	21.9	21.5
Payout ratio (%)	34.0	39.7	38.4	35.0	36.8	36.8
ROE (%)	15.1	13.5	14.7	14.8	13.0	13.1
Capex/sales (%)	23.3	34.4	25.4	40.2	44.4	49.5
Capex/depreciation (x)	2.8	4.6	4.1	7.0	6.5	7.1
Net debt/equity (%)	38.6	31.6	28.3	40.3	47.1	56.2
Net interest cover (x)	7.5	11.2	7.8	5.1	6.4	5.3

Source: Company data, Deutsche Bank estimates

Manish Saxena
+91 22 6658 4034 manish.saxena@db.com

Investment thesis

We downgrade from Buy to Sell

We downgrade NTPC to Sell based on: (a) our revised target price of INR135/sh which implies a potential downside of 18%. (b) a downward revision to our capacity addition target and higher capital costs. We cut earnings CAGR for FY08-10e to 2% (from 8%) and for FY08-12e to 12% (from 16%). Business RoE is likely to remain at 20% by FY12e, driving up headline RoE to 16% by FY12e (a 160 bps improvement over FY08-12e). (c) We acknowledge NTPC is better positioned vis-à-vis its peers due to its proven execution ability, and it has over 16GW under construction. As per our sector analysis [4], the company could face implementation hurdles for the commissioning of projects. Even the coal mining project may be delayed and there is a risk of gas-based capacities being shelved. We revise our capacity addition target to 14.2GW for FY09-12e (32% less than management guidance). (d) NTPC's ROIC is 20-26%, one of the highest in the world, due to operational excellence, not tariffs. However, this is at risk from the tightened regulatory environment framework.

We take an average of SOTP and DCF valuations

We use the average of a sum-of–the-parts and a DCF valuation to estimate the value of the company at INR135/sh.

- The DCF approach (see Figure 270 and Figure 271) is based on a three-stage forecast of cash flows. Stage 1 covers explicit forecast from FY08-17e. Stage 2 assumes a semi-explicit period of FY18-22e with a free cash flow CAGR of 3%. Stage 3 is the terminal growth phase, with a terminal growth rate of free cash flow assumed at 2%. Our cost of equity is 14% (raised from 11.8% in order to factor in the rise in risk premium). Our terminal growth rate of 2% looks reasonable, as it is lower than the long-term GDP forecast of 6-7% for India. This yields a value of INR115/sh.
- The sum-of-the-parts valuation methodology gives a value of INR155/sh (see Figure 272). This is based on the equity invested in operating assets (termed as True book) at 1.5x, which appears reasonable in the context of RoE for operating assets at +20%. We have assumed the value of investments and cash, as well as the book value of assets under construction, at a price/book of 1x. Meanwhile mining assets have been valued on a NPV basis with coal price assumptions of USD35/t and a CoE of 15%.

Company risks include lack of efficiency norms tightening

The key upside risks include faster-than-estimated capacity additions, a lack of efficiency norms tightening by the regulator in the new tariff norms, and a decline in the distribution losses of state electricity boards. If blending different grades of coal leads to an increase in calorific value by 100kcal/kg, earnings will increase significantly by 4.8% and vice-versa. A 1% rise in the utilization levels over our base case could cause earnings to increase by 0.2%. If O&M expenses reduce by 10% vs. our estimates, then earnings increase by 3%. Industry-related risks include faster capacity additions by the public and private sectors, leading to a possible power surplus scenario in the country; curbs on lending; the faster implementation of inter-regional transmission capacity to facilitate a smoother flow of power across the country; a slowdown in project implementation, resulting in missed capacity addition targets; a reduction in utilization levels; the faster development of coal assets; losses in the SEB being passed down; and tariff norms not being tightened.

[4] As per our sector report titled "Don't wait till the music stops" dated Jul 18, 08

Implementation challenges and steps by management

Delays from equipment suppliers remain the key reason for project delays

Large projects are facing significant delays

NTPC is facing significant delays in some of its key projects, due primarily to supply bottlenecks from the equipment suppliers.

Figure 254: Critical issues delaying the implementation of new capacity

Projects	Critical Issues in the development of large projects	Remarks
Power Projects		
Sipat I project (3 * 660 = 1980 MW)	(a) Delay in Turbine-generator supplied by Power Machines, Russia (b) Delay in equipment supplied by Doosan, Korea	A series of claims and counter claims by equipment suppliers and NTPC
Barh project (3 * 660 = 1980 MW)	(a) Delay in equipment supplied by Power Machines and Technopromexport, Russia (b) Equipment suppliers demanded INR6bn as an additional cost due to a rise in input prices	Govt of India has formed Empowered Group of Ministers to address the rise in input materials and resolve this issue
Coal blocks		
Pakri-Barwadih coal block	(a) Significant delays in acquiring land though public hearing is completed in identified villages (b) Not much progress on the construction of the railway link for the evacuation of coal. Expected to be completed at earliest by 2010 (c) Selection of mine development-cum-operator is still on	Intervention by the Ministry of Power and Railways should expedite the situation. However, we expect coal mining to move forward by a couple of years.
Chatti-Bariatu and Kerendari coal blocks	(a) Railway link will not be ready before 2010 (b) Mining plan is approved, however, clarification is sought from Ministry of Coal for mining lease	Intervention by the Ministry of Power and Railways to expedite. However, we expect coal mining to move forward by couple of years]

Source: Deutsche Bank, Central Electricity Authority

Some of the key reasons for the delay in new capacities are:

- Rise in input prices
- Scarcity in supply of critical materials like forgings and castings
- Delay in the supply of bought-out items from balance-of-parts suppliers and construction delays due to a limited number of civil contractors
- Some of the projects are facing problems with respect to the availability of manpower, construction equipment, and spare parts

Excluding the Dabhol project, the company has commissioned only 1000MW of projects in FY08. Of this, the Sipat plant of 500MW commenced generation only in May 08-- a year after its commissioning-- due to unavailability of water.

How management is tackling the situation

Management's JVs expected to be beneficial only in medium-to-long term

In order to mitigate the execution risks (especially on the equipment supply side) the company has entered into several joint-venture agreements over the last year. However, we expect the benefits from these JVs, if there are any, to accrue only in the medium- to long run.

Figure 255: Joint ventures entered into by NTPC

Alliances entered into	Purpose	Progress till date	Remarks
JV with BHEL (50:50)	a) To execute power project on EPC basis and take up infrastructure projects. b) To manufacture power generating equipment	a) MOU signed on 7 Sep 07 b) First board meeting held on 2 June 08 c)Management team has been identified	
JV with Bharat Forge (49:51)	a) Manufacture of castings, forgings, fittings, and high pressure piping b) Balance of Plant (BOP) equipments	MOU signed on 8 Feb 08 Finalizing BOP equipment to be manufactured	Total Investment of INR30bn
JV with CIL (50:50)	Development, Operation, and Maintenance of Coal blocks and Integrated power projects	MOU signed 7 Mar 08	Coal production target of about 14 mtpa by 2012 and 56 mtpa by 2017.
MOU signed with PFC	Financing of INR100bn for NTPC's ongoing capacity over the next 4-5 years	Interest rate ~11.25% during construction period and 11% during operation period. Reset clause every three years. Tenure of 16yrs (Moratorium of four years and repayment over 12 years in quarterly instalments)	Terms could be favourable in a rising interest rate scenario

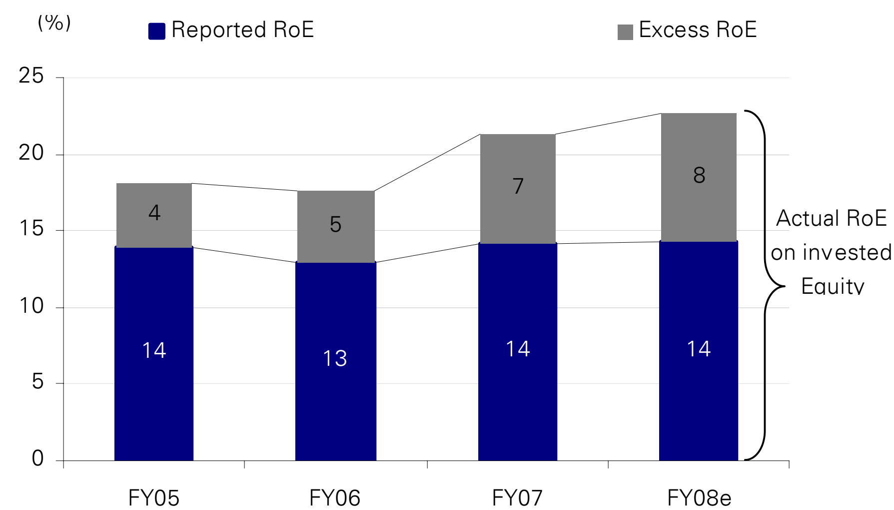
Source: Deutsche Bank, NTPC, CEA

Beating the norms

Return on equity is much higher than the 14% perceived

Our assessment of NTPC's financials show that against the perceived RoE of 14%, NTPC earned about 18-21% on its invested equity during FY05-07e.

Figure 256: Actual RoE well above reported RoE



Source: Deutsche Bank, Company

Risk of regulator norms tightening

The newly appointed CERC chairman has hinted at the tightening the efficiency norms.

According to an interview given by the newly appointed Chairman of CERC, there is a possibility that efficiency hurdle rates for tariff determination will be tightened. This could happen in CY09 when tariff norms are due for revision. Any attempt to cut returns for central utilities could hurt their earnings and, as a consequence, cash for investments. The possibility of benchmarking the various components of the capital cost to induce efficiency in the management of capital costs cannot be ruled out. A lower return at a time of rising interest rates depresses the quality of earnings. Over the last fifteen years, the regulator has continued to increase the threshold for returns, and the norms for earning higher returns have accordingly become tougher. Figure 257 presents an overview of some of the regulator's activities. The proportion of equity in overall financing has decreased. The station heat rates have also been cut, and developers will now have to run the plant even more efficiently. The RoE has also been cut from 16% to 14% for an operating plant at 80% utilization.

Figure 257: Tightening the belt

Parameters	FY92 - FY01	FY01 - FY04	FY05 - FY09*
Debt : Equity (x)	1 : 1	1 : 1	2.33 : 1
Station Heat Rate (kcal/kWh)	2500	2500	2450
O&M expenses (Rs mn/MW)	2.5% of Capital Cost	0.75 - 0.8^	0.9
Escalation on O&M expenses (%)	10	6	4
Return on Equity (%)	12 (uptown FY98); 16(thereafter)	16	14

*Source: Deutsche Bank, *for 500 MW series, ^for Ramagundam and Korba plants*

We have performed a sensitivity analysis on the possible parameters that can be tightened by the regulator.

- If the pant availability is increased to 85% (from current level of 80%), the FCF yield drops by 15-17 bps during FY09-10e.
- Likewise, if the normative return on equity is dropped to 13% (from the current level of 14%), the FCF yield drops by 15-18 bps during FY09-10e.
- If the working capital cycle is tightened by 10 days (currently fuel expenses and receivables of 60 days are allowed), the FCF yield drops by 9-10 bps during FY09-10e.
- If the station heat rate is tightened to 100 kcal/kWh lower than our estimates (and 200 kcal/kWh below the normative level), the FCF yield reduces by 9 bps during the same period.

Figure 258: The impact of tightened norms

	FY09e			FY10e		
	Sales	**PAT**	**FCF yield**	**Sales**	**PAT**	**FCF yield**
Availability for incentives						
500bps higher than our estimates	375	74	(2)	406	81	(4)
Change(%) vis-à-vis base case estimates	(0.7)	(2.9)	(15)	(0.7)	(2.7)	(17)
Return on Equity						
100 bps lower than our estimates	374.6	73.5	(3)	405.5	80.5	(4)
Change(%) vis-à-vis base case estimates	(0.8)	(3.1)	(15)	(0.8)	(3.0)	(18)
Working capital norms						
10 days lower than our estimates	376	75	(2)	407	82	(4)
Change(%) vis-à-vis base case estimates	(0.4)	(1.6)	(9)	(0.4)	(1.6)	(10)
Station Heat Rate						
100 kcal/kWh lower than our estimates	359.7	74.7	(2)	397.6	82.7	(4)
Change(%) vis-à-vis base case estimates	(4.7)	(1.5)	9	(2.7)	(0.4)	(9)

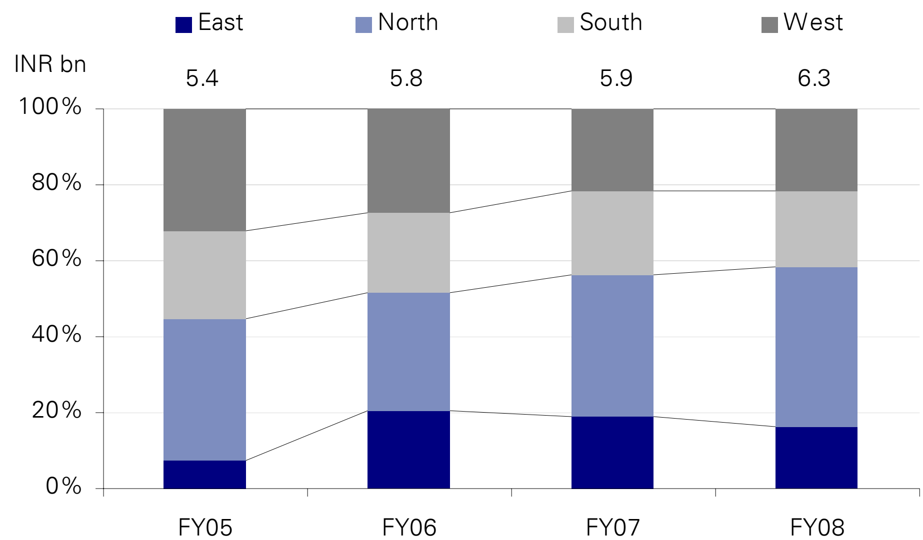
Source: Deutsche Bank

Even UI income may come under pressure

NTPC has earned about INR6.3bn (6% of net income) from UI charges in FY08.

The regulator introduced the availability-based tariff regime, where any company, including gencos or discoms, could be penalized if it does not adhere to the system of grid management. NTPC was quite vocal in opposing such moves, going so far as to say that under the new tariff regime it may lose up to INR10bn toINR15bn in profits. Our analysis of NTPC's earnings under the availability-based regime suggests that NTPC earned about INR6.3bn (6% of net income) in FY08, at a 7% CAGR. Several states in the country have raised objections to paying the UI charges. However, the new Chairman of CERC has also emphasized the need for ensuring grid discipline and has imposed penalties in the past for the same.

Figure 259: Income from UI charges



Source: Deutsche Bank, Load Dispatch Centres

Assumptions and financials

We have lowered our capacity target to ~14.2GW for FY09-12e - 32% less than management's guidance.

Key changes in our assumption

We have revised our assumptions on the following critical parameters:

- We have lowered the annual capacity addition target to 3-12%. In other words, we have assumed a capacity addition of only 14180 MW during FY09-12e, which is 32% less than management's guidance of ~20.7GW for FY08-12e. Figure 260 indicates our assumption for the revised commissioning schedule for various projects.

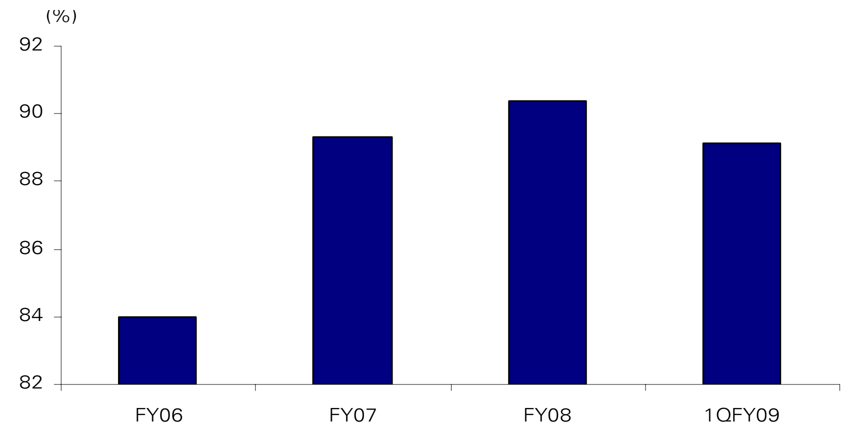
Figure 260: Capacity commissioning schedule for the next four years for projects under construction

Project	Fuel Type	Total Capacity (MW)	Expected commissioning schedule of various units of the projects (MW)			
			FY09e	FY10e	FY11e	FY12e
Kahalgaon-II Phase II	Coal	500	500			
Sipat-II Unit V	Coal	500	500			
Sipat-I	Coal	1,980		660	660	660
Barh	Coal	1,980			660	660
Korba-III	Coal	500		500		
Farakka- III	Coal	500				500
NCTPP-II, Dadri	Coal	980			490	490
Simhadri Stage III	Coal	1,000				500
Bhilai power expansion (JV)	Coal	500	500			
Ennore- JV with TNEB (JV)	Coal	1,000			500	500
Aravali Jhajjar with HPGCL (JV)	Coal	1,500		1000	500	
Bongaigaon, Assam	Coal	750				750
Mauda, Maharashtra	Coal	1,000				500
Barh-II	Coal	1,320				660
Koldam HEPP	Hydel	800			400	400
Loharinag pala HEPP	Hydel	600				600
Tapovan Vishnugad HEPP	Hydel	520				130
Total		**16,930**	**1,500**	**2,160**	**3,210**	**6,350**

Source: Deutsche Bank, Central Electricity Authority, NTPC

- The company has witnessed a marginal decline in PLF in Q1FY09, after three continuous years of growth. Accordingly, we have assumed a drop of 100 bps in PLF for FY09e. Due to the decline in the sales volume, the average tariff has declined by 1-4%.

Figure 261: Plant load factor for coal-based stations



Source: Deutsche Bank, CEA, NTPC

- We have assumed a 10% increase in the capital costs of the projects in order to factor in the rise of input materials.
- We have assumed a 2-year delay in the mining operations due to problems faced by the company in land acquisition and rail links. Figure 262 gives a snapshot of the changes in the key assumptions of our earnings model.

Figure 262: Key changes in assumptions

	FY08e	FY09e	FY10e	FY11e	FY12e	FY17e
Capacity Addition (MW)						
Revised	27,717	28,967	30,627	34,087	39,737	56,738
Earlier	27,842	29,787	32,307	36,287	41,337	64,788
% Change	(0)	(3)	(5)	(6)	(4)	(12)
Sales Volume (bn units)						
Revised	189	197	208	233	266	379
Earlier	190	203	222	244	278	428
% Change	(1)	(3)	(6)	(5)	(4)	(12)
Tariff (INR/kWh)						
Revised	2.0	2.1	2.6	2.7	2.8	2.9
Earlier	2.0	2.1	2.6	2.8	2.9	3.1
% Change	(1)	0	(3)	(3)	(3)	(4)
Coal Price (INR/t)						
Revised	1,348	1,402	1,472	1,546	1,623	2,072
Earlier	1,388	1,388	1,388	1,388	1,388	1,388
% Change	(3)	1	6	11	17	49
Mining - Volume (mtpa)						
Revised	-	-	-	5	8	35
Earlier	-	4	6	8	12	50
% Change	-	(100)	(100)	(38)	(33)	(31)
Working Capital – Receivables days						
Revised	36	40	42	45	46	44
Earlier	31	31	32	33	33	31
% Change	18	27	34	37	39	40

Source: Deutsche Bank

Financial forecasts

Our earnings model gives an earnings CAGR of 2% for FY09-10e.

Based on these assumptions, our earnings CAGR is estimated at 2% during FY09-10e.

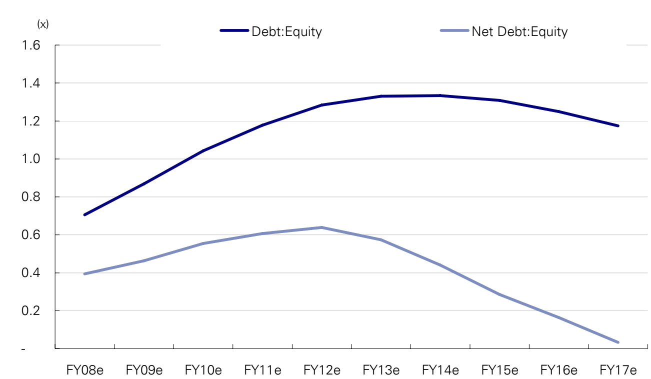
Figure 263: Summary forecast

	FY08e	FY09e	FY10e
Revenues (INR bn)			
Revised	371	377	409
Earlier	369	404	454
% Change	0	(7)	(10)
EBITDA (INR bn)			
Revised	112	108	117
Earlier	114	117	134
% Change	(1)	(8)	(13)
EPS (INR/sh)			
Revised	9.2	8.8	9.7
Earlier	9.1	9.3	10.6
% Change	1	(5)	(8)

Source: Deutsche Bank

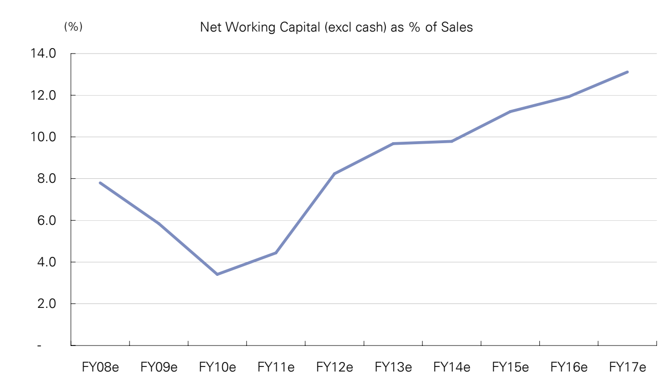
Despite aggressive capacity addition plans, NTPC is expected to have one of the lowest debts: equity ratios of the utility companies in India. With the distribution losses showing an upward trend, we expect an increase in debtor days in the future.

Figure 264: One of the lowest debt: equity ratios



Source: Deutsche Bank

Figure 265: NWC (ex-cash) as a percentage of sales



Source: Deutsche Bank

Our estimates are at the bottom of the street.

Our estimates are the lowest in the street

As shown in Figure 266, our estimates are 12% below consensus for FY09-10e.

Figure 266: Our estimates are the lowest in the street

	FY09e			FY10e		
	DB	Consensus	% Variance	DB	Consensus	% Variance
Revenue	397,840	410,768	(3.1)	435,737	458,239	(4.9)
EBITDA	128,743	123,343	4.4	143,717	138,468	3.8
EPS	8.7	9.9	(11.5)	9.6	10.9	(12.3)

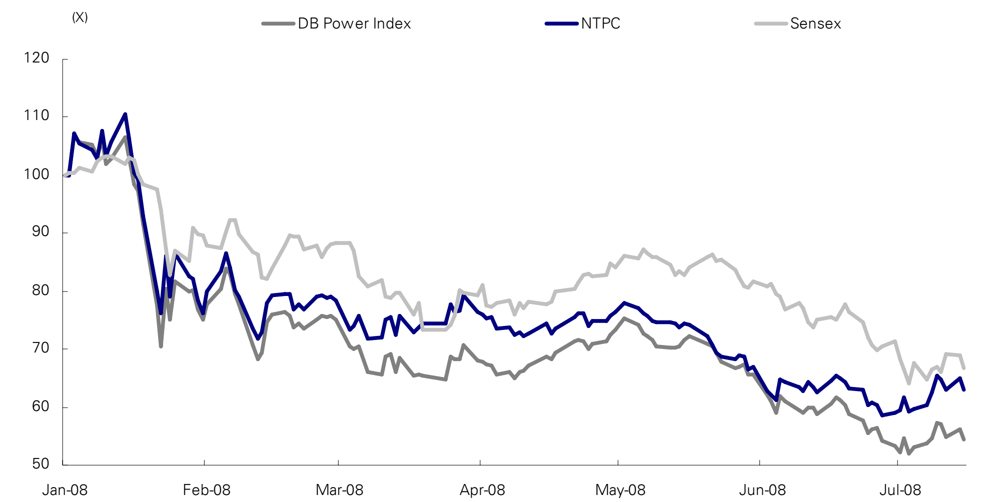
Source: Deutsche Bank, Bloomberg

Valuation and sensitivity analysis

Stock performance

NTPC's stock price has corrected by 34% YTD and has marginally underperformed the broader BSE Sensex, but is in line with the DB utility index for the same period.

Figure 267: NTPC's stock has underperformed the BSE Sensex

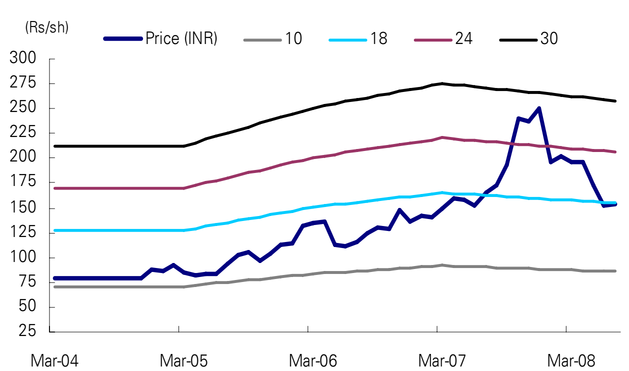


Source: Deutsche Bank, Bloomberg

Trading bands

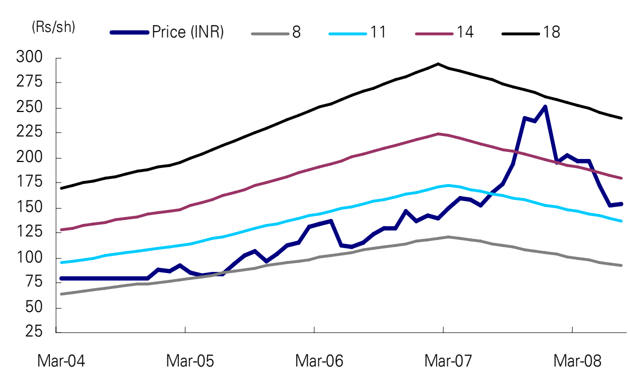
The stock is currently trading in the bottom quartile of historical P/E bands.

Figure 268: 12-month forward P/E



Source: Deutsche Bank, Bloomberg

Figure 269: 12-month forward EV/EBITDA



Source: Deutsche Bank, Bloomberg

DCF and price/book ratio is used to estimate the value

Our target price of INR135/sh is based on the average of (a) discounted cash flow methodology which gives a value of INR115/sh, and (b) a SOTP approach based on price/book value and giving a value of INR155/sh.

Discounted cash flow valuation

We believe that a DCF is one of the best tools to estimate the value of NTPC because the company has (1) a well laid-out plan with an approximately threefold jump in capacity, (2) relatively lower risk of returns as the bulk of sales is through the regulated environment, and (3) a higher predictability of free cash flows. Our model follows a three–stage forecast of cash flows. The semi-explicit period is assumed to cover FY17-22e; thereafter we have assumed a terminal growth rate of 2%. Our model uses a cost of equity of 14% (previously 11.8%) to factor in the rise in risk premiums. Our terminal growth rate assumption of 2% looks reasonable as FCF growth is assumed to be lower than long-term GDP growth in India.

Figure 270: Changes in free cash flow (INR bn)

	0	1	2	3	4	5	6	7	8	9	10	11	12	13
	FY09e	FY10e	FY11e	FY12e	FY13e	FY14e	FY15e	FY16e	FY17e	FY18e	FY19e	FY20e	FY21e	FY22e
Revised	(57)	(75)	(61)	(50)	22	86	124	190	233	268	256	258	261	275
Earlier	(52)	(47)	(25)	18	43	(11)	22	189	314	369	369	379	401	423
% Change	10	60	140	(384)	(48)	(896)	460	0	(26)	(27)	(31)	(32)	(35)	(35)

Source: Deutsche Bank

Figure 271: NTPC's discounted cash flow (in INR bn unless stated otherwise)

Terminal Growth Rate	2%	2.5%	3.0%	3.5%	4.0%
NPV of FCF	514	514	514	514	514
TV	2,674	2,822	2,986	3,168	3,371
NPV of Terminal Value	580	612	648	687	731
Enterprise Value	1,094	1,126	1,161	1,201	1,245
Less: Net Debt	(150)	(150)	(150)	(150)	(150)
Equity Value	944	976	1,012	1,051	1,095
Per Share (INR/Share)	**115**	**118**	**123**	**127**	**133**

Source: Deutsche Bank

SOTP approach

In addition, we have estimated the value of the company through a SOTP valuation. In this methodology, we have assumed an exit P/BV of 1.5x FY12e (discounted at 15% to FY10e) for the operating power assets, a P/BV of 1x for the power assets under implementation, and a P/BV of 1x for investments and cash. We have valued the coal assets by a NPV method. This methodology gives us a value of INR 155/sh.

Figure 272: SOTP valuation

	Valuation multiple	Value (INR bn)	Value (INR/sh)	Remarks
Operating assets as on FY12e	1.5x FY12e True book	564	68	Based on global peers
CWIP	1x equity portion of FY12e CWIP	99	12	On value of investment
Investments	1x FY12e	78	9	On value of investment
Cash	1x FY12e	477	58	On value of investment
Total equity value as on FY11e		1,217	148	
Discounted at Cost of equity to FY09e		**937**	**114**	**Based on DB estimates for risk free rate and market risk rate**
Add value of mining assets as on FY09e		344	42	NPV of mining assets (CoE at 15%)
Equity Value		**1,281**	**155**	

Source: Deutsche Bank, Company

Sensitivity and risk analysis

Amongst all the parameters, we have performed the sensitivity analysis of the following key parameters on the earnings of the company:

Calorific value of the coal impacting the fuel cost

NTPC's coal requirements are partly met through imported coal, and will be met in the future through captive mines, which will lead to higher calorific value when the coal from captive mines is blended with coal received from the various coalfields of Coal India Ltd. If blending different grades of coal leads to an increase in calorific value by 100kcal/kg, earnings will increase significantly by 4.8%, and vice-versa.

Figure 273: Sensitivity analysis

	FY09e			FY10e		
	Sales	EBITDA	PAT	Sales	EBITDA	PAT
Base Case estimates (INR bn)	377	112	76	409	121	83
Sensitivity to Utilization levels						
100bps higher than our estimates	380	112	76	411	121	83
Change (%)-vis-à-vis base case estimates	0.6	0.2	0.2	0.6	0.2	0.2
100bps lower than our estimates	375	112	76	406	120	83
Change (%)-vis-à-vis base case estimates	(0.6)	(0.2)	(0.2)	(0.6)	(0.2)	(0.2)
Sensitivity to Calorific Value of Coal						
100 kcal higher than our estimates	377	117	80	409	125	87
Change (%)-vis-à-vis base case estimates	-	4.1	4.8	-	4.0	4.6
100 kcal lower than our estimates	377	107	72	409	115	79
Change (%)-vis-à-vis base case estimates	-	(4.3)	(5.0)	-	(4.3)	(4.8)
Sensitivity to O&M expenses						
10% lower than our estimates	377	115	78	409	124	86
Change (%)-vis-à-vis base case estimates	(0.0)	2.8	3.2	(0.0)	2.8	3.2
10% higher than our estimates	377	109	73	409	117	80
Change (%)-vis-à-vis base case estimates	0.0	(2.8)	(3.2)	0.0	(2.8)	(3.2)
Sensitivity to Capital cost						
10% lower than our estimates	376	111	76	407	119	83
Change (%)-vis-à-vis base case estimates	(0.3)	(1.0)	(0.2)	(0.5)	(1.8)	(0.2)
10% higher than our estimates	379	113	76	411	123	83
Change (%)-vis-à-vis base case estimates	0.3	1.0	0.2	0.5	1.8	0.2

Source: Deutsche Bank

O&M expenses

A 10% reduction in O&M expenses will result in an estimated ~3% increase in earnings and vice versa.

Capital cost

Since NTPC operates primarily in the regulated environment, the rise in the capital cost can be recovered through higher tariffs. A 10% change in the capital cost will result in an estimated ~1% change in the earnings.

A lower/higher utilization rate than our estimates

A 1% increase in plant utilization rates can raise earnings by 0.2%, while a 1% drop in utilization levels over our base case could decrease earnings by 0.2%.

Asia India
Utilities Utilities

18 July 2008

Reliance Power

Reuters: **RPOL.BO** Bloomberg: **RPWR IN**

Challenging environment ahead; downgrade to Sell

Rising execution challenges; downgrade to Sell
The Indian government's policy proposals put gas-based projects, currently under implementation by RPL, at risk. Coupled with a rising cost of capital and press reports on the risk of the company being denied cheap coal linkage to an additional 4000MW MP power plant, this could increase the risk perception of the stock. We have extended the commissioning of 14280MW of power plants by 6m-1yr and raised our cost of capital. We now estimate a TP of INR120/sh (-6%). Downgrade to Sell.

EGoM's gas allocation plan gives priority to fertilizers
The recent announcement by the Empowered Group of Ministers (EGoM) regarding the utilization of gas from new fields gives higher priority to fertilisers, city gas and existing power assets. This framework is slated for the next five years. Note that the court decision on the arbitration of the gas supply between RIL and RNRL is still pending.

Our assumptions reflect expansion in the execution cycle
We have extended the commissioning of gas-based capacities by a year and the MP power plant by six months to factor in the recent uncertainty. However, our assumptions factor in a full commissioning of 28200MW by FY17e.

We revise our TP to INR120/sh; downgrade to Sell
Based on our revised commissioning schedule, we now estimate a TP of INR120/sh. We have estimated the value using a combination of DCF (CoE at 15%, previously 13%) and PE of 8x FY17e discounted to FY10e at CoE of 15%. Key upside triggers are, higher-than-estimated tariffs for 70% of its projects, a quick resolution of the gas supply and rupee appreciation.

Forecasts and ratios

Year End Mar 31	2007A	2008E	2009E	2010E
Sales (INRm)	22.5	**1,328.9**	1,872.0	771.3
EBITDA (INRm)	13.6	**979.1**	1,487.2	300.0
Reported NPAT (INRm)	12.7	**853.8**	939.9	174.0
Reported EPS FD(INR)	0.06	**0.38**	0.39	0.07
DB EPS FD (INR)	0.06	**0.38**	0.39	0.07
OLD DB EPS FD (INR)	0.06	**0.38**	0.42	0.08
% Change	0.0%	**0.0%**	-5.7%	-8.6%
DB EPS growth (%)	–	**495.0**	3.8	-81.5
PER (x)	–	**348.7**	336.0	–
EV/EBITDA (x)	–	**175.3**	171.7	–

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

Sell

Price at 17 Jul 2008 (INR)	**131.75**
Price target - 12mth (INR)	**120.00**
52-week range (INR)	**450.40 - 127.35**
BSE 30	**13,112**

Key changes

Rating	Hold to Sell ↓	
Price target	254.00 to 120.00 ↓	**-52.8%**

Price/price relative

Performance (%)	1m	3m	12m
Absolute	*-29.2*	*-65.5*	–
BSE 30	*-15.0*	*-20.4*	*-14.3*

Stock data

Market cap (INRm)	**297,755**
Market cap (USDm)	**6,954**
Shares outstanding (m)	**2,260.0**
Major shareholders	**Promoter Group (84.78%)**
Free float (%)	**15.2**
Avg daily value traded (USDm)	**62.3**

Key indicators (FY1)

ROE (%)	**1.2**
Net debt/equity (%)	**-79.4**
Book value/share (INR)	**61.02**
Price/book (x)	**2.2**
Net interest cover (x)	**17.0**
Operating profit margin (%)	**73.7**

Infrastructure Research Team

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:11 July 2008

Running the numbers

Asia

India

Utilities

Reliance Power

Reuters: RPOL.BO Bloomberg: RPWR IN

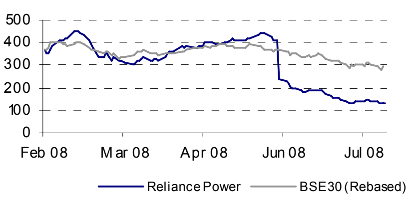
Sell

Price (17 Jul 08)	INR 131.75
Target price	INR 120.00
52-week Range	INR 127.35 - 450.40
Market Cap (m)	INRm 297,755 USDm 6,954

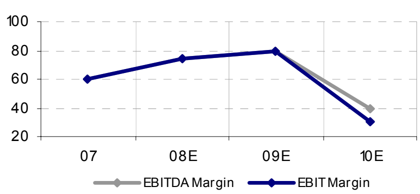
Company Profile

Reliance Power has ambitious plans to set up 28,200MW of greenfield power generation projects. These include 14,620MW of coal-based projects, 10,280MW of gas-based projects and 3,300Mw of hydro-power projects. Reliance Power has also emerged as the lowest bidder for two ultra mega power projects: Sasan (based on captive coal) and Krishnapatnam (based on imported coal) each of size ~ 4000 MW. It is also setting up a 7480 MW gas-based plant that would be the world's largest single location project at Dadri, Uttar Pradesh.

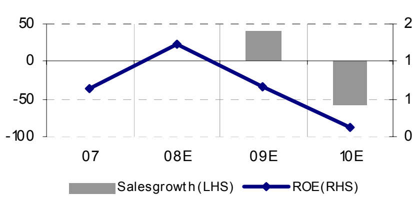
Price Performance



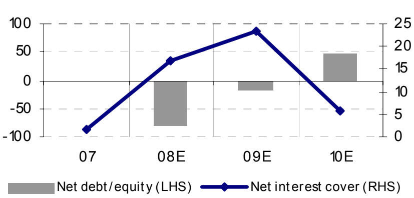
Margin Trends



Growth & Profitability



Solvency



Manish Saxena
+91 22 6658 4034 manish.saxena@db.com

Fiscal year end 31-Mar	2007	2008E	2009E	2010E
Financial Summary				
DB EPS (INR)	0.06	0.38	0.39	0.07
Reported EPS (INR)	0.06	0.38	0.39	0.07
DPS (INR)	0.00	0.00	0.00	0.00
BVPS (INR)	10.1	61.0	58.5	58.6
Weighted average shares (m)	200	2,260	2,397	2,397
Average market cap (INRm)	na	297,755	297,755	297,755
Enterprise value (INRm)	na	171,630	255,373	345,711
Valuation Metrics				
P/E (DB) (x)	na	348.7	336.0	nm
P/E (Reported) (x)	na	348.7	336.0	nm
P/BV (x)	0.00	2.16	2.25	2.25
FCF Yield (%)	na	nm	nm	nm
Dividend Yield (%)	na	0.0	0.0	0.0
EV/Sales (x)	nm	129.1	136.4	448.2
EV/EBITDA (x)	nm	175.3	171.7	nm
EV/EBIT (x)	nm	175.3	171.7	nm
Income Statement (INRm)				
Sales revenue	**23**	**1,329**	**1,872**	**771**
Gross profit	**14**	**979**	**1,487**	**300**
EBITDA	**14**	**979**	**1,487**	**300**
Depreciation	0	0	0	63
Amortisation	0	0	0	0
EBIT	**14**	**979**	**1,487**	**237**
Net interest income(expense)	-8	-58	-63	-40
Associates/affiliates	0	0	0	0
Exceptionals/extraordinaries	17	0	0	0
Other pre-tax income/(expense)	0	0	0	0
Profit before tax	**22**	**921**	**1,424**	**196**
Income tax expense	10	68	484	22
Minorities	0	0	0	0
Other post-tax income/(expense)	0	0	0	0
Net profit	**13**	**854**	**940**	**174**
DB adjustments (including dilution)	0	0	0	0
DB Net profit	**13**	**854**	**940**	**174**
Cash Flow (INRm)				
Cash flow from operations	**22**	**-246**	**776**	**-257**
Net Capex	0	-8,778	-59,573	-164,050
Free cash flow	**22**	**-9,024**	**-58,797**	**-164,307**
Equity raised/(bought back)	0	20,600	1,368	0
Dividends paid	0	0	0	0
Net inc/(dec) in borrowings	0	7,150	49,661	162,167
Other investing/financing cash flows	0	-16,255	-2	-23
Net cash flow	**22**	**2,470**	**-7,770**	**-2,162**
Change in working capital	*0*	*0*	*0*	*0*
Balance Sheet (INRm)				
Cash and other liquid assets	9	116,610	82,528	154,358
Tangible fixed assets	1,249	10,027	69,601	233,587
Goodwill/intangible assets	0	0	0	0
Associates/investments	412	16,665	16,665	16,665
Other assets	388	1,640	1,804	2,100
Total assets	**2,058**	**144,942**	**170,598**	**406,709**
Interest bearing debt	0	7,150	56,811	218,978
Other liabilities	46	198	198	0
Total liabilities	**46**	**7,348**	**57,010**	**218,978**
Shareholders' equity	2,012	137,911	140,219	140,393
Minorities	0	0	0	0
Total shareholders' equity	**2,012**	**137,911**	**140,219**	**140,393**
Net debt	*-9*	*-109,460*	*-25,717*	*64,621*
Key Company Metrics				
Sales growth (%)	nm	nm	40.9	-58.8
DB EPS growth (%)	na	495.0	3.8	-81.5
EBITDA Margin (%)	60.4	73.7	79.4	38.9
EBIT Margin (%)	60.4	73.7	79.4	30.7
Payout ratio (%)	0.0	0.0	0.0	0.0
ROE (%)	0.6	1.2	0.7	0.1
Capex/sales (%)	0.0	660.6	nm	nm
Capex/depreciation (x)	nm	nm	nm	nm
Net debt/equity (%)	-0.4	-79.4	-18.3	46.0
Net interest cover (x)	1.7	17.0	23.5	5.9

Source: Company data, Deutsche Bank estimates

Investment thesis

Outlook

We downgrade Reliance Power to Sell due to the following reasons:

- Policy proposals by the government of India regarding the supply of natural gas from new gas finds and the press reports on the risk of being denied cheap coal linkage puts at risk the implementation of 14280MW of power plant. Considering the uncertainty of the macro environment, we have extended the commissioning of these plants by 6 months to one year. Our assumptions still factor in the complete commissioning of all plants aggregating 28.2GW by FY17e.
- SEB (largely discom) losses (ex-subsidies) have risen to INR262bn (+24% yoy), with losses (inclusive of subsidies) rising at a faster pace of 27% yoy in FY07. This raises questions about the receivables of power gencos.

Due to a rise in betas of power utility stocks, we have raised the cost of equity for RPL to 15% from our previous assumption of 13%. We lower our target price to INR120/sh (-9% downside).

Valuation

Our methodology for estimating target price remains the same. Based on our revised earnings, we have lowered our target price to INR120/sh based on the average of two methods: (a) a DCF methodology gives a target price of INR98/sh (previously INR246/sh) and (b) a P/E approach leads to a target price of INR143/sh (previously INR262/sh).

Our DCF model follows a three-stage forecast of cash flows. The first stage involves cash flow projections until FY20e. The second stage is the semi-explicit period of FY21e-FY30e with an assumed growth rate of 8% for free cash flows. The third stage is based on a terminal growth rate assumption of 2%, which looks reasonable as the growth of free cash flow is assumed to be lower than the long-term GDP growth in India. Our model uses a cost of equity of 15% (previously 13%, raised due to an increase in equity risk premiums). Accordingly, our DCF model gives a value of INR98/sh.

Our PE methodology is based on determining the value of the company in FY16e at a targeted 8x FY17e (previously 10x FY17e) earnings (first full year of operations) and discounting this value to FY10e at a discount rate (returns expectation) of 15% p.a. (previously 13% but raised due to an increase in equity risk premiums) to get value of INR143/sh.

Risks

Key upside risks are lower-than-expected gas prices, faster-than-expected reforms, lower-than-expected long-term coal prices and higher-than-expected tariffs for open-ended projects. According to our earnings model, if the price of imported coal is reduced by USD5/t vs. our estimate, then the value will increase by 7%. Likewise, if power tariffs (which are currently open ended and are not firmed up) are 10 paise/unit higher (4% higher than our average estimate of INR2.6/unit), the value will increase by INR21/sh. If gas prices are contracted at USD1/mmbtu lower than our estimates, the value could potentially increase 29%. Also, the sector has a high beta and hence any global liquidity drawdown would have a negative impact on the stock price.

Assumption and valuations

Company data points suggest a mild tweaking of assumptions

Figure 274 gives a snapshot of the changes in assumptions for the key parameters. As far as gas-based capacities are concerned, we have extended the commissioning of gas based power plants by one year on the backdrop of the recent guidelines issued by the Empowered Group of Ministers (EGoM) for utilization of gas from the KG D6 field of Reliance Industries Ltd. In this policy, the EGoM clearly prioritizes the allocation of gas in the following order:

1. Existing gas-based urea plants
2. Existing gas-based LPG plants (max of 3 mmscmd)
3. Partial requirement of gas-based power plants lying idle/under-utilized/likely to be commissioned during 2008-09 (up to 18 mmscmd)
4. City Gas Distribution projects for the supply of Piped Natural Gas (PNG) to households and Compressed Natural Gas (CNG) in transport sector (max of 5 mmscmd)
5. Any additional gas available beyond categories (1) to (4) above, would be supplied to existing gas-based power plants, if they require more than 18 mmscmd.

As highlighted, this policy gives higher priority to fertilisers, city gas and existing power assets. Hence, we would like to see how the things shape up in the future. Note that the next hearing for the resolution of the gas supply dispute between Reliance Natural Resources Ltd. (RNRL) and Reliance Industries Ltd. is scheduled for 22 July 2008 in the Mumbai high court. However, the press reports indicate that the RNRL has asked for clarification from the government of India on the utilization of the RIL's KG basin gas for the power plants of RPL. We need to watch out for the response of the government in this regard.

Likewise, we have extended the commissioning of the MP power project by six months due to the press reports on risk of denying cheap coal linkage from the Sasan coal block for the 4000MW MP power project. Note that management has stated that it can get permission to use the coal from the captive mines allocated for the Sasan project for the MP power project as well. According to management, it can use the coal from the captive power block of Sasan for the MP power project as long as it gives a commitment that the Sasan project would get the first right of usage of the coal mined from the captive block. We have raised the cost of debt and cost of working capital by 100 bps to factor in an increase in interest rate in the economy.

Figure 274: Changes in key assumptions

Project	Capacity (MW)	Tariff (INR/unit)		Commissioning date (Unit 1 to last unit)		Fuel cost (Coal in INR/t, Gas in $ /mmbtu)		Capital Cost (INR mn/MW)		Remarks
		Earlier	Revised	Earlier	Revised	Earlier	Revised	Earlier	Revised	
UMPP Sasan	3960	1.196*	No change	Q1FY12 - Q4FY13		315	No change	41	No change	Equipment order yet to be given
UMPP Krishnapatnam	4000	2.336*		Q3FY13 - Q4FY14		2,100		42		Use of low cal fuel can raise capital cost
Rosa Ph I	600	2.6		Q4FY10 - Q1FY11		1,640		45		On schedule
Shahapur (Coal)	1200	2.6		Q3FY12 - Q4FY12		2,900		42		Use of low cal fuel can raise capital cost
Butibori	300	3.5		Q1FY11 - Q2FY11	No change	1,150		47		On schedule
MP Power	3960	2.5		Q3FY13 - Q4FY14	Q1FY14 – Q3FY15	500		42		SEB losses in MP hold the key, Looks delayed
Rosa Ph II	600	2.6		Q2FY11 - Q3FY11	No change	1,640		41		On schedule
Shahapur (Gas)	2800	2.4		Q1FY12 - Q2FY12	Q1FY13 - Q3FY13	5.4		32		Looks delayed
Dadri	7480	2.4		Q4FY11 - Q1FY13	Q1FY12 - Q2FY14	5.4		32		Looks delayed
Urthing Sobla	400	3.8		Q1FY15	No change	NA		52		Still at DPR stage
Tato II	700	3.8		Q1FY15		NA		58		Still at DPR stage
Siyom	1000	3.8		Q1FY16		NA		58		Still at DPR stage
Kalai	1200	3.8		Q1FY17		NA		61		Still at DPR stage

*Source: Deutsche Bank, Company, *As per bid submitted to Power Finance Corporation*

Financial forecast

Based on the above assumptions, earnings in FY17e (first full year of operations of the company) are estimated at INR118bn (previously estimated at INR139bn).

Figure 275: Summary of financial forecast

	FY07	FY08e	FY09e	FY10e	FY11e	FY12e	FY13e	FY14e	FY15e	FY16e	FY17e
Generation Capacity (MW)	-	-	-	300	1,500	6,740	16,660	24,020	27,000	28,200	28,200
Generation (mn units)	-	-	-	295	9,746	33,754	104,360	161,789	196,365	204,823	210,482
Sales (mn units)	-	-	-	275	9,076	31,812	100,543	156,076	187,991	195,607	200,559
Mining (mn t)	-	-	-	-	-	6	15	15	20	30	32
Sales (INR bn)	0.02	1.3	1.9	0.8	27	67	212	358	473	511	537
EBITDA (INR bn)	0.01	1.0	1.5	0.3	13	26	72	139	224	252	272
Net Income (INR bn)	0.01	0.9	0.9	0.2	7.0	4.9	7	33	83	104	118
No. of Shares (mn)	200	2,260	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397
EPS (INR/sh)	0.1	0.4	0.4	0.1	3	2	3	14	35	43	49
Average tariff (INR/unit)	-	-	-	2.80	2.98	2.11	2.11	2.29	2.51	2.61	2.68
Return on Equity (%)	0.6	1.2	0.7	0.1	4.8	3.3	4.5	18.7	35.6	31.8	27.0
Debt : Equity (x)	-	0.1	0.4	1.6	2.7	3.6	4.2	3.8	2.6	1.7	1.2

Source: Deutsche Bank; Company

Average of DCF and P/E approach gives value of INR120/sh

Based on our revised earnings, we have revised our target price to INR120/sh. Our methodology for estimating the target price remains the same. We have arrived at the value of the company based on the average of two methods:

(a) a DCF methodology gives a target price of INR98/sh (previously INR246/sh);

(b) a P/E approach leads to a target price of INR143/sh (previously INR262/sh).

DCF methodology gives a value of INR98/sh

The discounted cash flow (DCF) methodology gives a value of INR98/sh at a 15% cost of equity (previously 13, raised due to an increase in equity risk premiums). Our model follows a three-stage forecast of cash flows during the forecast period.

Figure 276: Discounted free cash flow to equity in explicit forecast period (INR bn)

	FY08e	FY09e	FY10e	FY11e	FY12e	FY13e	FY14e	FY15e	FY16e	FY17e	FY18e	FY19e	FY20e
Net Income	0.9	0.9	0.2	7	5	7	33	83	104	118	130	140	152
Depreciation	-	-	0.1	2	8	28	44	53	54	55	55	55	55
Gross Cash Flows	0.9	0.9	0.2	9	13	35	76	136	158	173	184	195	206
Change in Working capital	-	-	0.1	4	5	24	24	16	3	1	2	2	2
Debt repayment	-	-	-	4	7	31	66	66	66	66	66	67	67
Equity drawdown (initial equity investment)	86	1	37	51	52	53	46	10	8	4	0	0	0
Free Cash Flow to Equity	**(86)**	**0**	**(37)**	**(50)**	**(51)**	**(73)**	**(59)**	**44**	**82**	**101**	**117**	**126**	**138**
Discount factor		100	87	76	66	57	50	43	38	33	28	25	21
Present value of cash flows		0	(32)	(38)	(34)	(42)	(30)	19	31	33	33	31	30

Source: Deutsche Bank

- The first stage involves cash flow projections up to FY20e. Note that the first full year of operation of all projects is FY17e.
- The second stage is the semi-explicit period of FY21e-FY30e, during which we have assumed a growth rate of 8% for the free cash flows.
- Thereafter, the third stage is the terminal value based on a terminal growth rate assumption of 2%, which looks reasonable as growth of free cash flow is assumed to be lower than long-term GDP growth in India.

Refer to Figure 277 for the break-up of value of the explicit, semi-explicit and terminal periods.

Figure 277: Reliance Power DCF valuation

	NPV (INR bn)
Explicit period (up to FY20e)	3
Semi-explicit period (FY21e-FY30e)	212
Terminal period	107
Total	**322**
Less: Equity investment in FY08-09e	**87**
NPV of FCFE	**235**
Value (INR/sh)	**98**

Source: Deutsche Bank

Figure 278 presents the sensitivity of value to the cost of equity (CoE) and the terminal growth rates. According to our earnings model, a 1% increase in the cost of equity reduces the value by ~26%.

Figure 278: Sensitivity on CoE and terminal growth rate

	Cost of Equity (%)		
Terminal growth rate (%)	**14**	**15**	**16**
0	120	92	68
1	125	95	70
2	130	**98**	73
3	136	103	76
4	143	108	80

Source: Deutsche Bank

P/E approach gives a value of INR143/sh

Our P/E methodology is based on determining the value of the company in FY16e at a targeted 8x FY17e (previously 10x FY17e) earnings (first full year of operations) and discounting this value to FY10e at a discount rate of 15% p.a. (previously 13%, raised due to an increase in equity risk premiums) to get a value of INR143/sh.

Figure 279: Sensitivity for CoE and P/E multiple

	P/E Multiple		
Cost of Equity (%)	**8**	**9**	**10**
14%	152	177	197
15%	**143**	167	185
16%	134	157	175

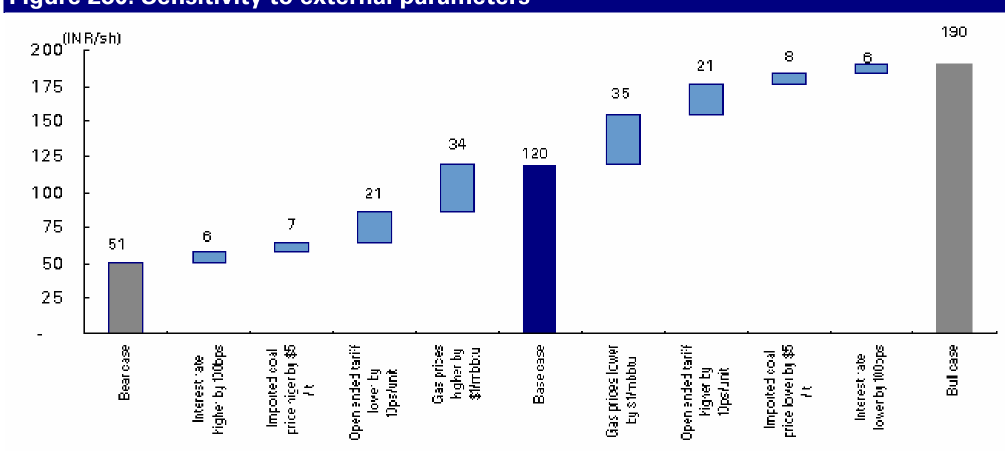
Source: Deutsche Bank

Impact of external factors like tariffs and fuel prices

The impact of external parameters like tariffs for all open-ended projects (70% of total capacity), fuel prices and interest rates is as follows (refer to Figure 280):

- The company indicated that it had tied up ~25% capacity of the MP power plant at a long-term tariff of INR2.45/unit. A 10 paise/unit increase in open-ended tariff for all projects (except Sasan, Krishnapatnam and Rosa Ph I) could increase the value by INR21/sh.
- Though the company has acquired mines in Indonesia, pricing is still uncertain. Further, the coal shipping arrangement has yet to be firmed up. If the price of the imported coal used to fuel 5,200MW of projects were lower by USD5/t, then the value would increase by INR6/sh.

Figure 280: Sensitivity to external parameters



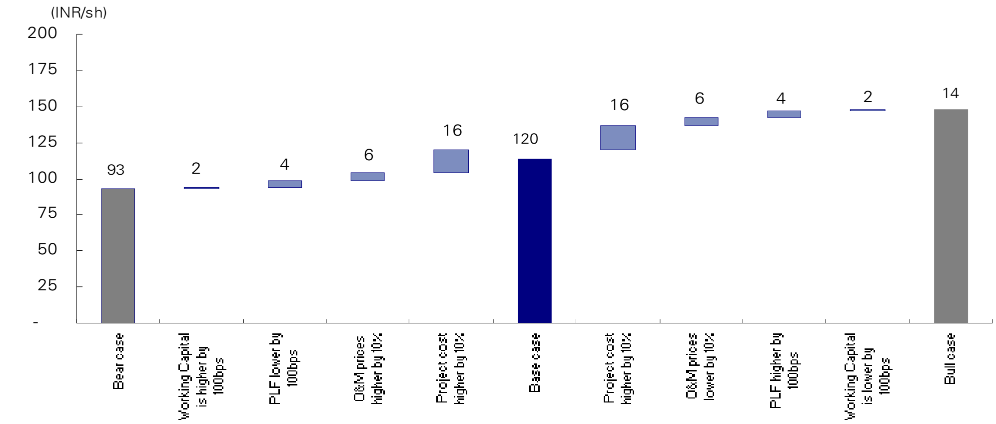
Source: Deutsche Bank

Impact of internal parameters

The impact of internal parameters like capital cost, working capital, O&M expenses and plant load factor is as follows (refer to Figure 281):

- If the capital cost decreases by 10%, the value will increase by INR16/sh – an increase of 13% vs. our estimates.
- If the operation and maintenance expenses are reduced by 100 bps, the value will increase by INR6/sh – an increase of 5% vs. our base case estimates.

Figure 281: Sensitivity to internal parameters



Source: Deutsche Bank

Asia India
Utilities Utilities

18 July 2008

Tata Power

Reuters: **TTPW.BO**

Great business model but rich valuations

Our SOTP suggests 23% downside; Downgrade to Sell

Tata Power (TPWR) is relatively less vulnerable to the coal price spike given its 30% stake in PT Bumi's Indonesian coal mines. Given DB's near term and long term coal price forecast of USD120/t and USD 53/t respectively, the Bumi stake is a hedge against higher coal prices after 2011, and a source of cash dividends until then – but this hedge does not have a stand-alone value in our view. With strong YTD relative performance, valuation is now expensive given high forecast risk for long term coal prices and sharp increase in interest rates. Downgrade to Sell

TPWR stake in PT Bumi cannot be valued independently of its Mundra UMPP

Coal price movements have an opposite impact on Tata Power's investments in overseas coal assets and its Mundra UMPP from 2011 onwards. Until then, higher coal prices benefit TPWR, but thereafter they could hurt. For example, TPWR's FCF could worsen significantly if FOB coal cost post 2011 rises beyond USD70/t and PT Bumi's spot sales as a percentage of total sales remain below 35%.

A big upgrade in FY08-FY10 earnings

Based on DB's 30%-above-consensus forecast for PT Bumi driven by a sharp increase in spot coal prices, our revised consolidated FY09 EPS rises to INR 116/sh (+28% upgrade). However, we note that this increase in spot coal prices is negative for the Mundra UMPP if it persists beyond 2011.

But valuations appear rich - Downgrade to Sell

Our revised valuation for the overseas coal assets plus Mundra is INR91/sh. Higher fuel costs and interest rates has resulted in a lower DCF-based valuation for the stand-alone business to INR312/sh giving overall SOTP at INR765/sh (-23% downside). Key upside risks include power sector reforms and an increase in proportion of spot coal sales by PT Bumi.

Forecasts and ratios

Year End Mar 31	2006A	2007A	**2008E**	2009E	2010E
Sales (INRm)	56,212.6	64,756.4	**108,908.6**	164,027.5	178,200.4
EBITDA (INRm)	10,148.6	10,894.6	**21,328.2**	48,470.8	57,000.2
Reported NPAT (INRm)	7,474.0	7,597.7	**10,550.7**	25,586.8	31,117.5
DB EPS FD (INR)	37.76	38.39	**47.80**	115.92	133.71
OLD DB EPS FD (INR)	37.76	38.39	**63.06**	90.54	78.42
% Change	0.0%	0.0%	**-24.2%**	28.0%	70.5%
DB EPS growth (%)	26.5	1.7	**24.5**	142.5	15.3
PER (x)	11.5	13.9	**21.4**	8.8	7.6
EV/EBITDA (x)	9.3	11.1	**11.8**	5.9	5.3

Source: Deutsche Bank estimates, company data

[1] DB EPS is fully diluted and excludes non-recurring items
[2] Multiples and yields calculations use average historical prices for past years and spot prices for current and future years, except P/B which uses the year end close

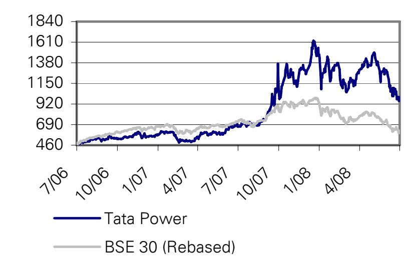
Sell

Price at 17 Jul 2008 (INR)	**1,022.00**
Price target - 12mth (INR)	**765.00**
52-week range (INR)	**1,626.80 - 667.50**
BSE 30	**13,112**

Key changes

Rating	Buy to Sell	↓	
Price target	1,345.00 to 765.00	↓	**-43.1%**
Sales (FYE)	89,303 to 108,909	↑	**22.0%**
Op prof margin (FYE)	13.4 to 14.4	↑	**7.9%**
Net profit (FYE)	13,753.4 to 10,550.7	↓	**-23.3%**

Price/price relative



Performance (%)	1m	3m	12m
Absolute	*-22.9*	*-23.1*	*49.7*
BSE 30	*-16.5*	*-20.4*	*-14.2*

Stock data

Market cap (INRm)	**225,578**
Market cap (USDm)	**5,268**
Shares outstanding (m)	**220.7**
Major shareholders	**Tata Group (32.5%)**
Free float (%)	**66.6**
Avg daily value traded (USDm)	**20.8**

Key indicators (FY1)

ROE (%)	**15.1**
Net debt/equity (%)	**66.4**
Book value/share (INR)	**358.55**
Price/book (x)	**2.9**
Net interest cover (x)	**4.8**
Operating profit margin (%)	**14.4**

Infrastructure Research Team

Deepak Agrawala
Research Analyst
(91) 22 66584214
deepak-m.agrawala@db.com

Manish Saxena
Research Analyst
(91) 22 6658 4034
manish.saxena@db.com

Ravikiran Surana
Research Associate
(91) 22 6658 4207
ravikiran.surana@db.com

Sandeep Palgota
Research Associate
(91) 22 6658 4056
sandeep.palgota@db.com

Model updated:08 July 2008

Running the numbers

Asia

India

Utilities

Tata Power

Reuters: TTPW.BO Bloomberg: TPWR IN

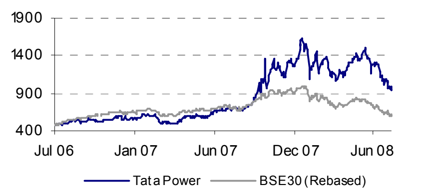
Sell

Price (17 Jul 08)	INR 1,022.00
Target price	INR 765.00
52-week Range	INR 667.50 - 1,626.80
Market Cap (m)	INRm 225,578 USDm 5,268

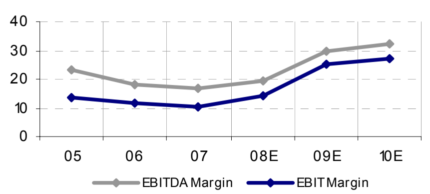
Company Profile

Tata Power is India's largest private sector power utility with an installed generation capacity of over 2300 MW. Tata Power has a presence in all the segments of the power sector viz generation (thermal, hydro, solar and wind), transmission and distribution. The Company won the bid for the first 4000 MW Ultra Mega Power Project at Mundra (Gujarat) and has acquired 30% stake in Indonesian Coal Mines. It has successful public-private partnerships in generation, transmission and distribution.

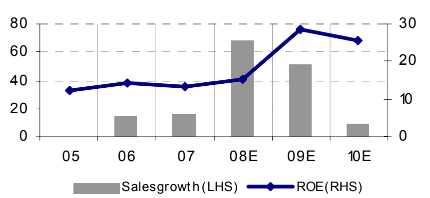
Price Performance



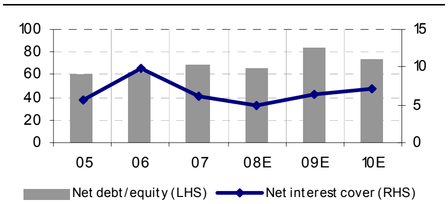
Margin Trends



Growth & Profitability



Solvency



Deepak Agrawala
+91 22 66584214 deepak-m.agrawala@db.com

Fiscal year end 31-Mar	2005	2006	2007	2008E	2009E	2010E
Financial Summary						
DB EPS (INR)	29.86	37.76	38.39	47.80	115.92	133.71
Reported EPS (INR)	29.86	37.76	38.39	47.80	115.92	133.71
DPS (INR)	0.34	0.40	0.38	0.35	0.35	0.35
BVPS (INR)	246.1	275.5	304.0	358.6	461.2	609.9
Weighted average shares (m)	198	198	198	221	221	233
Average market cap (INRm)	64,550	85,812	105,922	225,578	225,578	225,578
Enterprise value (INRm)	66,642	94,810	120,870	251,227	284,879	304,265
Valuation Metrics						
P/E (DB) (x)	10.9	11.5	13.9	21.4	8.8	7.6
P/E (Reported) (x)	10.9	11.5	13.9	21.4	8.8	7.6
P/BV (x)	1.45	2.10	1.68	2.85	2.22	1.68
FCF Yield (%)	5.9	nm	nm	nm	nm	nm
Dividend Yield (%)	0.1	0.1	0.1	0.0	0.0	0.0
EV/Sales (x)	1.4	1.7	1.9	2.3	1.7	1.7
EV/EBITDA (x)	5.8	9.3	11.1	11.8	5.9	5.3
EV/EBIT (x)	10.0	14.2	17.9	16.0	7.0	6.3
Income Statement (INRm)						
Sales revenue	**49,258**	**56,213**	**64,756**	**108,909**	**164,027**	**178,200**
Gross profit	**18,841**	**16,475**	**16,791**	**32,637**	**62,468**	**71,610**
EBITDA	**11,425**	**10,149**	**10,895**	**21,328**	**48,471**	**57,000**
Depreciation	4,751	3,457	4,148	5,593	7,530	8,591
Amortisation	0	0	0	0	0	0
EBIT	**6,674**	**6,691**	**6,747**	**15,735**	**40,941**	**48,409**
Net interest income(expense)	-1,176	-688	-1,097	-3,251	-6,385	-6,820
Associates/affiliates	30	1,102	195	-1,170	475	500
Exceptionals/extraordinaries	0	0	0	0	0	0
Other pre-tax income/(expense)	2,795	2,054	951	3,050	3,142	3,236
Profit before tax	**8,293**	**8,057**	**6,601**	**15,534**	**37,698**	**44,825**
Income tax expense	2,410	1,687	-991	3,765	10,822	12,511
Minorities	3	-2	189	49	1,764	1,696
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	**5,910**	**7,474**	**7,598**	**10,551**	**25,587**	**31,118**
DB adjustments (including dilution)	0	0	0	0	0	0
DB Net profit	**5,910**	**7,474**	**7,598**	**10,551**	**25,587**	**31,118**
Cash Flow (INRm)						
Cash flow from operations	**12,705**	**7,168**	**10,008**	**14,670**	**35,689**	**35,919**
Net Capex	-8,905	-11,500	-12,361	-36,799	-64,323	-62,707
Free cash flow	**3,801**	**-4,332**	**-2,353**	**-22,130**	**-28,634**	**-26,789**
Equity raised/(bought back)	143	295	346	11,439	0	12,120
Dividends paid	-1,471	-2,304	-2,562	-3,609	-3,565	-3,806
Net inc/(dec) in borrowings	16,615	4,727	9,500	59,876	51,180	32,933
Other investing/financing cash flows	-7,127	-1,653	-2,330	136	194	259
Net cash flow	**11,961**	**-3,268**	**2,601**	**45,712**	**19,177**	**14,717**
Change in working capital	*1,425*	*-3,658*	*-2,049*	*-1,960*	*143*	*-6,294*
Balance Sheet (INRm)						
Cash and other liquid assets	10,744	10,793	14,024	59,844	77,730	91,473
Tangible fixed assets	46,745	54,788	63,001	94,208	151,001	205,117
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	28,823	28,632	30,833	31,283	31,733	32,183
Other assets	17,283	22,140	29,293	41,105	47,771	54,912
Total assets	**103,595**	**116,353**	**137,151**	**226,440**	**308,235**	**383,686**
Interest bearing debt	40,703	46,355	57,309	114,123	165,637	198,494
Other liabilities	13,230	13,400	17,172	30,523	37,664	39,395
Total liabilities	**53,933**	**59,755**	**74,481**	**144,646**	**203,301**	**237,889**
Shareholders' equity	48,707	54,530	60,174	79,141	101,807	141,947
Minorities	956	2,068	2,496	2,653	3,126	3,849
Total shareholders' equity	**49,663**	**56,597**	**62,670**	**81,794**	**104,934**	**145,796**
Net debt	*29,959*	*35,562*	*43,285*	*54,279*	*87,907*	*107,021*
Key Company Metrics						
Sales growth (%)	nm	14.1	15.2	68.2	50.6	8.6
DB EPS growth (%)	na	26.5	1.7	24.5	142.5	15.3
EBITDA Margin (%)	23.2	18.1	16.8	19.6	29.6	32.0
EBIT Margin (%)	13.5	11.9	10.4	14.4	25.0	27.2
Payout ratio (%)	1.1	1.1	1.0	0.7	0.3	0.3
ROE (%)	12.3	14.5	13.2	15.1	28.3	25.5
Capex/sales (%)	18.1	20.5	19.1	33.8	39.2	35.2
Capex/depreciation (x)	1.9	3.3	3.0	6.6	8.5	7.3
Net debt/equity (%)	60.3	62.8	69.1	66.4	83.8	73.4
Net interest cover (x)	5.7	9.7	6.2	4.8	6.4	7.1

Source: Company data, Deutsche Bank estimates

Investment thesis

Outlook

We downgrade Tata Power to Sell due to the following: (1) Our TP of INR765/sh implies potential downside of 23%. (2) Coal price movements have an inverse impact on TPWR's investments in overseas coal assets and its Mundra UMPP from 2012 onwards. Until then, higher coal prices benefit TPWR, but thereafter they could hurt. For example, TPWR's FCF could worsen significantly if FOB coal cost post 2011 rises beyond USD70/t and PT Bumi's spot sales as a percentage of total sales remain below 35%. (3) Based on DB's 30%-above-consensus forecast for PT Bumi driven by a sharp increase in spot coal prices, our revised consolidated FY09 EPS rises to INR 115/sh (+28% upgrade). However, we note that this increase in spot coal prices is negative for the Mundra UMPP if it persists beyond 2011. (4) We estimate the company could be required to dilute equity by 5% to fund their projects. (5) Considering that not much headway has been made by the company in the 2400MW coastal Maharashtra project, we have decided not to assign any equity value for the project. (6) Rising SEB losses, at highs of INR288bn, raise concerns about the ability of discoms to fund new power projects.

Valuation

We have estimated our TP using a SOTP valuation. The individual divisions have been valued by either a DCF/NPV/PE combination or a price-to-book/NPV/PE combination. Using the former methodology, we estimate a TP of INR671sh, while using the latter methodology, we estimate TP of INR862sh. Thus we have an average of INR765/sh.

Method 1: In this methodology, we have used a DCF to value generation, distribution assets in the Mumbai license area, and Tala transmission. The DCF method assumes a CoE of 14% [beta = 1.2 vs earlier estimate of 1.0]. This leads to a value of INR200/sh. We have estimated the value of the combined value of coal assets-cum-Mundra project at INR91/sh using an NPV methodology (CoE of 15%). All the liquid and other investments are valued at INR246/sh (based on cost/realizable value, as per DB TP on holdings). New generation projects (excl Mundra UMPP) are valued using NPV (CoE of 15%) at INR54/sh, and the trading power business is also valued using NPV, at INR10/sh (20xFY10e PE, in-line with comparable peers such as Power Trading Corporation). This gives a value of INR671 (See Figure 294).

Method 2: In this methodology, using peer comparisons, we have assumed a P/BV of 1.2x FY10e for the Mumbai license area and generation assets (having RoE of 10-15%), a P/BV of 1.5x FY10e for Delhi distribution business (RoE of 16-20%), a P/BV of 1.5x FY10e for transmission assets (RoE of 16-18%), and a P/BV of 1x FY10e for investments only in the 240MW projects captive to Tata Steel. Further, the value of combined value of coal assets-cum-Mundra project and other businesses i.e investments in VSNL, BP Solar etc are valued the same way as in Method 1. This gives us a SOTP value of INR862sh. (See Figure 293)

Risks

The key upside risks to our earnings model include (a) sustained higher coal prices in near to medium term (a) If the spot sales of PT Bumi subsidiary mines rises to 50% post then TPWR then SOTP value rises by 5% at USD 70/t of coal price. If the average tariff realized by the company increases by 12% vs. our base case, then our overall SOTP value increases by 14%. On the industry side, the key risks to our call include faster capacity additions by the public and private sectors (which could lead to a power surplus scenario in India), curbs on lending, and the faster implementation of inter-regional transmission capacity to facilitate a smoother flow of power across the country.

A hedge cannot be valued independently

Stake in subsidiaries of PT Bumi is only a hedge for TPWR

High coal prices could impair debt service obligations of Mundra UMPP- but could be offset by higher dividend income from investment of Tata Power in Indonesian coal mines

In our view, Tata Power's stake in subsidiaries of PT Bumi is largely a hedge for coal supplies for 4000MW Mundra project. This hedge does not have a stand-alone value. Benefits from higher dividend income from PT Bumi following large increase in coal price would be offset by a substantially negative impact on cash flows of Mundra UMPP project and vice-versa. We base our assessment due to the following nuances of the deal:

- Tata Power acquired a 30% stake in the subsidiaries mines of PT Bumi. Tata Power has rights for getting annual dividend at pay-out ratio of 100% of the distributable profits (net of capex).. Effectively this implies that Tata Power would get 100% dividend for about 18mnt of coal o/p from 2011 onwards.
- Tata Power has a take and pay contract for 10.5+/-20% mtpa of coal from PT Bumi. The first year of full contracted quantity is in 2011.
- Tariffs of Mundra –the project which would use the coal purchased subsidiary mines of PT Bumi has a pass through for 42% of coal price escalations.

Considering the dynamic nature of cash flows, we believe that valuations of 30% stake in subsidiary of PT Bumi is largely dependent on the impact of that coal purchased by Mundra Mundra power project. Hence our valuation methodology for UMPP and 30% stake in subsidiary of PT Bumi is based on the summation of the following free cash flow:

1. Dividend from SPV (Special Purpose Vehicle) – a 100% subsidiary of Tata power which owns 30% stake in PT Bumi
2. FCF from UMPP project at the coal purchase price from PT Bumi

We note that the dividend from 100% SPV of TPWR to Tata Power would be after meeting debt obligations, and taxes if any paid by the SPV. Note that the SPV has a debt of ~ 950mn USD. Once a consolidated FCF is arrived, the value can be estimated by discounting at the COE of 15%

Stress test on UMPP Mundra for high coal prices

Our base case coal purchase price assumption for 4000 MW Mundra power project- is USD 40/t. This is primarily based on (1) DB long term coal forecast price of USD 58/t (2) Tata Power can buy some proportion of 12.5 mnt coal through fixed price contract.

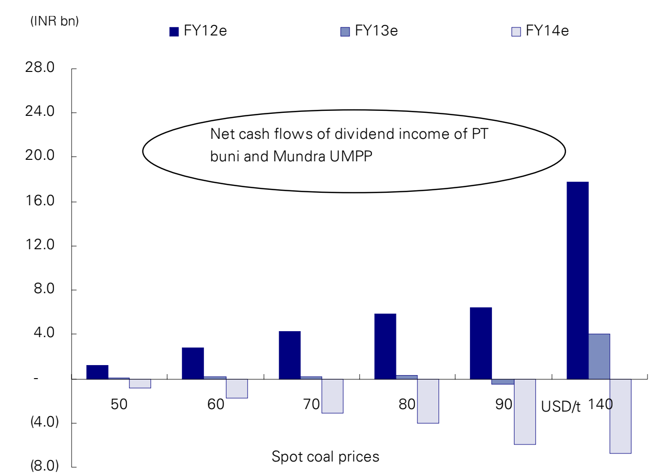
Since the transaction from Tata Power's perspective is clearly a hedge transaction- one need not bother so much on the base coal price- but on the impact of different coal prices for combined stream of cash flows for Tata Power. In absence of any company guidance on the proportion of spot and fixed contract sales from PT Bumi – we have assumed two scenarios:

1. Scenario 1 : Spot sales for PT Bumi's subsidiaries are about 20% of total sales
2. Scenario 2: Spot sales for PT Bumi's subsidiaries are about 50% of total sales.

A stress test on our earnings model of both PT Bumi as well as Mundra Power for the impact of change in coal prices on the combined cash flows of dividend income from PT Bumi and Mundra power project is done using 2 scenarios – (a) Spot sales for PT Bumi at 20% and (b) Spot sales at 50%.

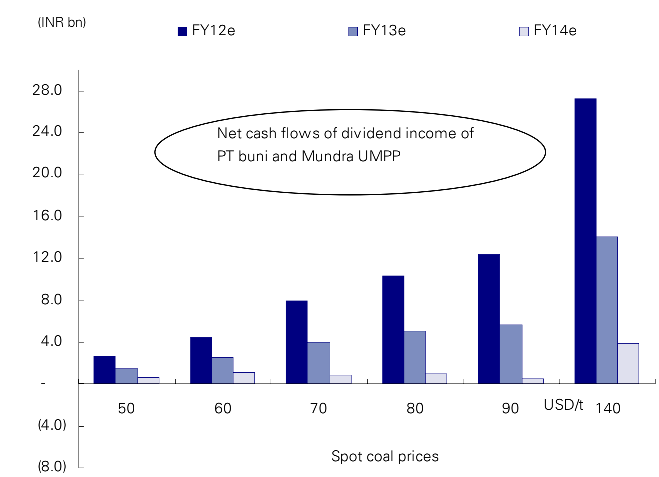
As seen in Figure 282, the combined cash flows from dividend income from PT Bumi and UMPP project at Mundra yields negative cash in FY14e. However, in case spot sales form 50% of output from PT Bumi, (Refer Figure 283) the combined cash flows remain positive in FY14e - the first full year of operations of 4000MW UMPP project.

Figure 282: Scenario I: PT Bumi sells 20% of o/p in spot



Source: Deutsche Bank

Figure 283: Scenario II: PT Bumi sells 50% of o/p in spot



Source: Deutsche Bank

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Assumptions

Key changes in assumptions

The changes in the assumptions of the key parameters are highlighted in Figure 284. These include:

- Based on DB's 30%-above-consensus forecast for PT Bumi driven by a sharp increase in spot coal prices, our revised consolidated FY09 EPS rises to INR 116/sh (+28% upgrade).
- Based on tariff orders, we have raised our tariff by 5-7% for FY09-12e. Note that this is marginally lower than the increase requested by the company to cover the rising fuel cost.
- Looking at the progress of key elements for the completion of the UMPP Mundra project, we now estimate that the Mundra UMPP will be commissioned between Oct-11 and Apr-13. According to the management, their contract value is much lower than their assumptions at the time of bidding. In addition, an early commissioning of the Mundra Power project could help Tata Power save ~INR12-13bn in interest (the "interest during construction" component of capital costs). In Maithon's case, the benefits of completing a year early could be ~INR3.6bn. In addition, a lower capital cost reduces the hurdle for returns.

Figure 284: Changes in key assumptions

	FY09e	FY10e
Capacity addition (MW)		
Old estimate	2,999	3,119
New estimate	2,899	3,119
% change	*(3)*	-
Electricity Sales (bn units)		
Old estimate	22	24
New estimate	21	24
% change	*(4)*	*(2)*
Average tariff (INR/unit)		
Old estimate	3.86	3.72
New estimate	4.13	3.91
% change	*7*	*5*

Source: Deutsche Bank

- We have revised the debt: equity for Mundra since the financial closure was achieved at 75:25. Our assumptions include an average cost of debt of 10-11% and an exchange rate of INR43/USD. For Mundra UMPP, the company has managed to secure long-term (20 year) loans from the IFC for up to USD450mn. The financial closure of its minor projects (i.e., Jojobera and other 240MW) was concluded a day before RBI increased their repo rate, and it looks like that the company may have received benefits of much lower rate. We are not unduly worried about the financial closure for its Orissa project of 500MW, as that is a captive supply for Tata steel (definitely a superior customer to a SEB).

Figure 285: Financial closure achieved for 5050MW

Project	Project cost (INR bn)	Equity (%)	Rupee Debt (%)	Foreign currency Debt (%)
4000MW UMPP at Mundra	170	25	33	42
1050MW Maithon project	45	30	70	-

Source: Deutsche Bank, Company

- We now estimate that 2400MW coastal Maharashtra could see delays. Accordingly we have pruned the shortfall on additional equity funding at INR 12 bn v/s INR 40 bn assumed earlier. The fresh equity could be funded through (1) Conversion of warrants held by Tata Sons which could result in the dilution of ~4.9%. The other option is dilution at current market price, which implies a dilution at ~5.4% (assumed in our model). However, in case the dilution is at our TP, the extent of dilution could be much higher.

Forecast

Our earnings model indicate that at the consolidated level, the revenues is estimated to grow at 28% CAGR during FY08-10e driving the earnings growth at 28% CAGR during the same period.

Figure 286: Consolidated summary financials

	FY07	FY08e	FY09e	FY10e
Revenue	65	109	164	178
Operating Expenses	54	88	116	121
EBITDA	11	21	48	57
Depreciation	4	6	8	9
Interest	3	5	8	8
Earnings b/f taxes	7	16	38	45
Tax	(1)	4	11	13
Net Income (after minority interest)	8	11	26	31
No. of shares	198	221	221	233*
EPS (INR/sh)	38	48	116	134
RoE (%)	14	14	27	23
RoCE (%)	7.2	6.4	10.4	9.7
Debt:Equity (x)	1.0	0.7	0.6	0.7

*Source: Deutsche Bank, Company, *No of shares are higher due to equity dilution,*

DB vs consensus

Our earnings estimates are higher by 47% in FY09e and 26% in FY10e.

Figure 287: Our estimates are significantly above consensus

	FY09e			FY10e		
	DB	Consensus	% Variance	DB	Consensus	% Variance
Revenue (INR bn)	164	98	68	178	111	60
EBITDA (INR bn)	48	24	106	57	30	91
EPS (INR/sh)	116	79	47	134	106	26

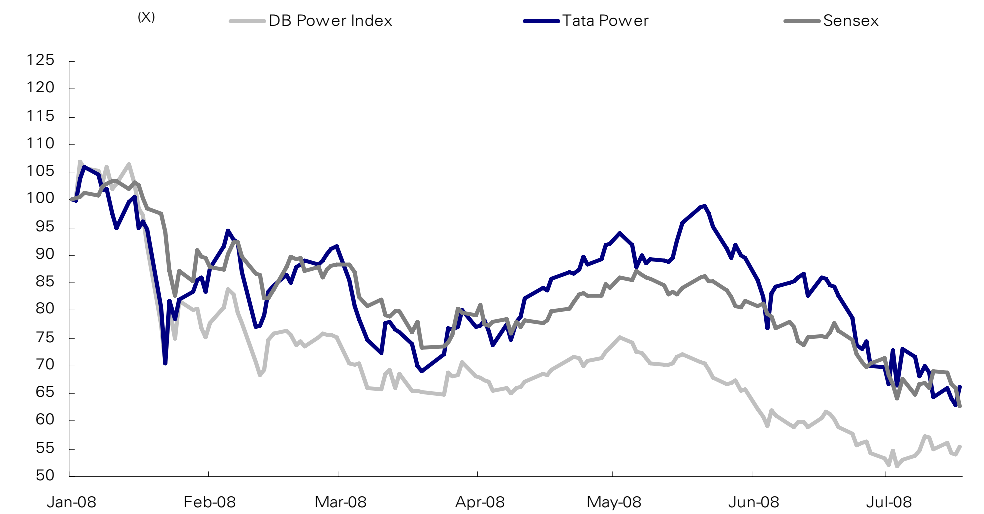
Source: Deutsche Bank, Bloomberg

Valuation

Stock performance

Despite a YTD fall of 34% TPWR has outperformed the DB power index and performed in line with broader BSE Sensex index. This is indeed a surprise as its peers have largely under-performed the market.

Figure 288: Tata Power's stock performance is in line with the Sensex



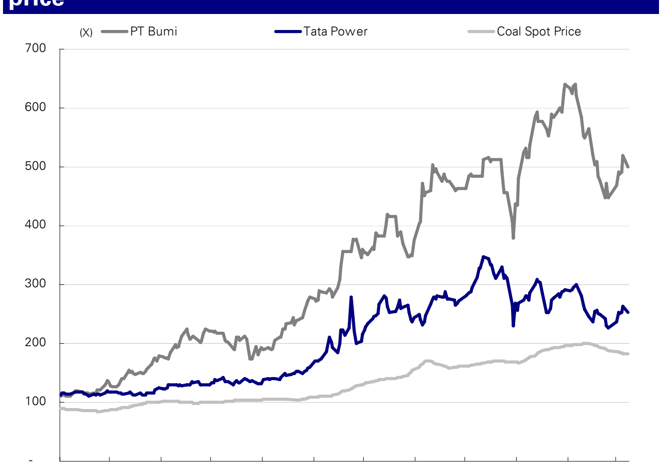
Source: Deutsche Bank, Bloomberg

Tata Power's stock performance over the last four months seems to decouple from international coal prices.

Stock movements suggest Tata Power won't always follow coal

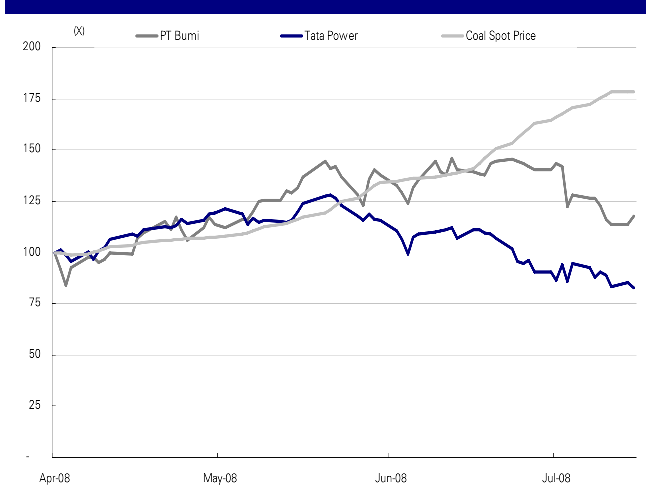
Tata Power's stock performance over the past four months appears to show some signs of decoupling from the international coal prices. Earlier in FY08, the stock had reacted far more to the newsflow concerning rising coal prices and the stock movements of PT Bumi.

Figure 289: Tata and PT Bumi move in line with coal price



Source: Deutsche Bank, Bloomberg

Figure 290: Tata Power moving inversely vs. coal price

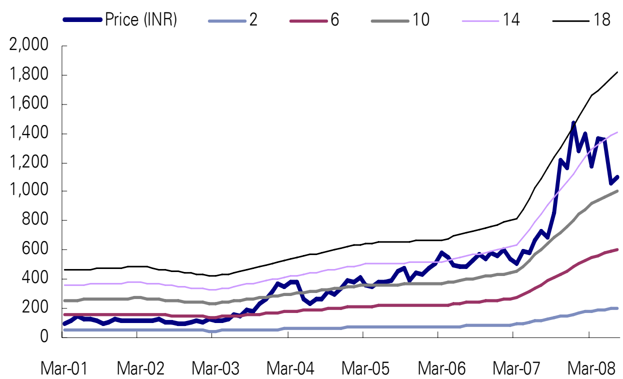


Source: Deutsche Bank, Bloomberg

Trading bands

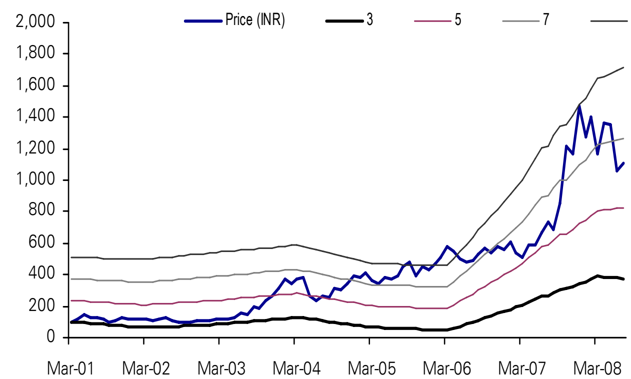
Despite hardening of interest rate, high energy cost and benefits from PT Bumi largely offsetting loses in Mundra UMPP, Tata Power is currently trading within the upper half of the trading band. This is an anomaly which we expect the market to correct through stock correction.

Figure 291: 12-month forward P/E



Source: Deutsche Bank, Bloomberg

Figure 292: 12-month forward EV/EBITDA



Source: Deutsche Bank, Bloomberg

SOTP methodology is used to value the company

We have estimated the TP using a SOTP valuation. The individual divisions have been valued by either a DCF/NPV/PE combination or a price-to-book/NPV/PE combination. Using the former methodology, we estimate a TP of INR761/sh while using the latter methodology, we estimate a TP of INR862/sh, giving an average TP of INR765/sh.

Method 1: SOTP valuation based on DCF/NPV/PE

Based on our revised assumptions, we arrive at an SOTP value of INR671/sh. The existing business of generation and distribution in the Mumbai license area as well as the generation assets contribute to 30% of the value. Likewise, the combined value of coal asset + Mundra UMPP is estimated at INR91/sh (14% of the SOTP value), while all the new generation projects constitute ~8% of the total value.

Figure 293: Sum-of-parts valuation on DCF

Businesses	Description	Equity Value (INR bn)	Value (INR/share)	Valuation methodology
Value of business which currently generate cash flows plus current investments				
Generation and distribution	Mumbai license area and generation assets	46	200	DCF on standalone business @14%CoE, 2% Terminal Growth
Distribution	Delhi distribution	14	62	2x P/BV FY10e for Delhi Circle as RoE looks sustainable at 16-22%
Transmission	Tala transmission	2	10	NPV at CoE of 14%
Trading	Power Trading	2	10	P/E 20 FY10e in line with PTC- comparable peer
Mining + Mundra UMPP	Equity stake in PT Bumi Resources + Mundra UMPP of 4000MW	21	91	NPV @15% Cost of equity
Investments in VSNL	Direct/indirect stake in VSNL~16.3%	27	118	As per TP of INR 560/sh set by telecom team of DB
Other Investments	Tata Teleservices, PTC, Nelco, and others	30	127	As per FY07 annual report
Sub-Total		**144**	**617**	
Value of business which would yield cash flows in the medium term				
Generation assets for Tata Steel	Jojobera, Jamshedpur - 240 MW	1	4	NPV at CoE of 15%
Generation asset with DVC	Maithon - 1050MW	4.2	18	NPV at CoE of 15%
Add. generation assets for Tata Steel	Orissa - 500MW	7.3	31	NPV at CoE of 15%
Sub-Total		12	54	
	Total	**156**	**671**	

Source: Deutsche Bank

Method 2: SOTP valuation based on price-to-book/NPV/PE

Figure 294 indicates a valuation based on the price-to-book value basis. We have assumed a P/BV of 1.2x FY10e for the Mumbai license area and generation assets, a P/BV of 1.5x FY10e for Delhi distribution business, a P/BV of 1.5x FY10e for transmission assets, and a P/BV of 1x FY10e for investments that are only in the 240MW projects captive to Tata Steel. Further, the value of combined value of coal assets-cum-Mundra project and other businesses i.e. investments in VSNL, BP Solar etc are valued the same way as in Method 1.Based on this approach, we get a SOTP value [of INR862/sh .

Figure 294: SOTP valuation on price-to-book value

Businesses	Description	Equity Value (INR bn)	Value (INR/share)	Valuation methodology
Generation and Distribution	Mumbai license area and generation assets	99	425	1.2x FY10e True book
Distribution	Delhi distribution	11	47	1.5x FY10e True book
Transmission	Tala transmission	9	39	1.5x FY10e True book
Trading	Power Trading	2	7	P/E 20 FY09e in line with PTC- comparable peer
Mining + Mundra UMPP	Equity stake in PT Bumi Resources + Mundra UMPP of 4000MW	21	91	NPV @15% Cost of equity
Generation assets for Tata Steel	Jojobera, Jamshedpur - 240 MW	2	8	1x FY10e True book
Others (Investments in VSNL and other Investments)		57	245	Same as above
	Total	**200**	**862**	

Source: Deutsche Bank

Sensitivity analysis

The key parameters that could impact the SOTP are:

- **Capital cost:** If the capital costs of the projects decreases by 10%, the SOTP would increase by 5%

- **PLF:** A 1% rise in PLF over our estimates for power stations would increase the overall SOTP value by 3% vs. the base case.

Figure 295: Sensitivity analysis

Impact on Equity value/share (%	Base Case SOTP Value	Change in Capital Cost		Chg in PLF		Chg in Interest rate		Chg in coal cost – domestic coal		Chg in Re/$ Depreciation	
		-10%	10%	+1%	-1%	-100bps	+100bps	-10%	10%	+1%	-1%
Existing (Generation and Distribution)*	643	0	(0)	1	(1)	(0)	0	1	(1)	-	(0.0)
Equity value in Bumi Resources + Mundra UMPP	91	34	(34)	11	(11)	12.88	(12.88)	-	-	16	(15)
Generation assets for Tata Steel**	6	10	(10)	3	(3)	4	(4)	17	(17)	-	-
Generation asset with DVC	9	32	(32)	9	(9)	8	(8)	31	(31)	(0.0)	-
Add. Generation assets for Tata Steel***	16	12	(12)	3	(3)	3	(3)	7	(7)	-	-
Overall value	765	5	(5)	3	(3)	1.7	(1.7)	1.6	(1.6)	2	(2)

*Source: Deutsche Bank, *Include Mumbai & Delhi distribution, Tata transmission, trading, generation on standalone basis; **Include project implemented under separate subsidiary – Jamshedpur, Jojobera ***Orissa project*

- **Interest rate:** A 1% drop in interest rate of the debt below our estimates for all the power stations can increase the overall SOTP value by 2% vs. the base case. The change in the interest rate would be passed on to consumers for capacities based on regulated model.
- **Rp/$ change:** The impact of Rupee-dollar exchange rate fluctuation: a 1% INR/USD depreciation has an impact of 2% on the SOTP value vs. the base case.

Appendix 1

Important Disclosures

Additional information available upon request

Disclosure checklist			
Company	**Ticker**	**Recent price***	**Disclosure**
ABB Ltd India	ABB.BO	865.50 (INR) 17 Jul 08	17
BHEL	BHEL.BO	1452.50 (INR) 17 Jul 08	14
Larsen & Toubro Ltd	LART.BO	2440.40 (INR) 17 Jul 08	6,14
NTPC Limited	NTPC.BO	164.70 (INR) 17 Jul 08	NA
Siemens India Ltd	SIEM.BO	469.80 (INR) 17 Jul 08	6

*Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank and subject companies.

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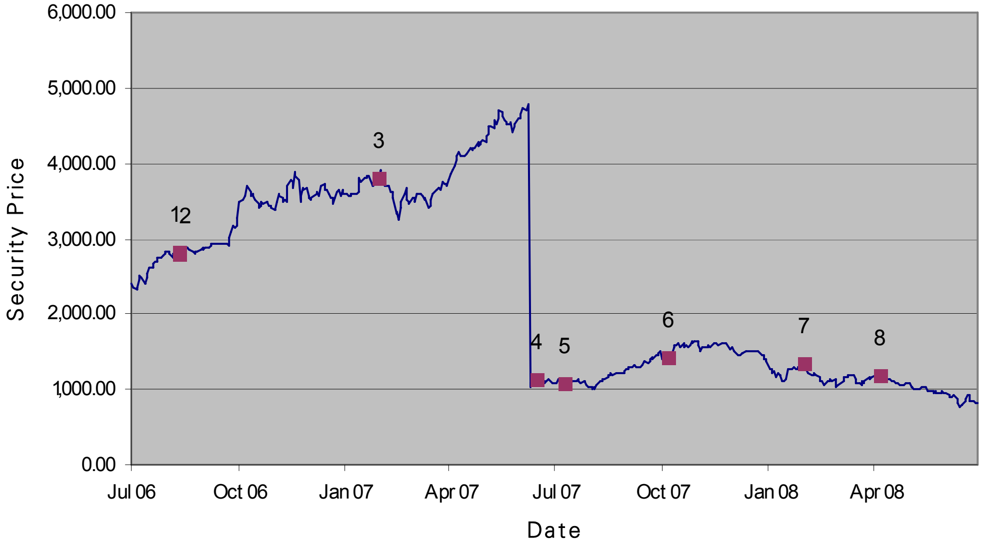
Historical recommendations and target price: ABB Ltd India (ABB.BO)

(as of 7/17/2008)



Previous Recommendations

Strong Buy
Buy
Market Perform
Underperform
Not Rated
Suspended Rating

Current Recommendations

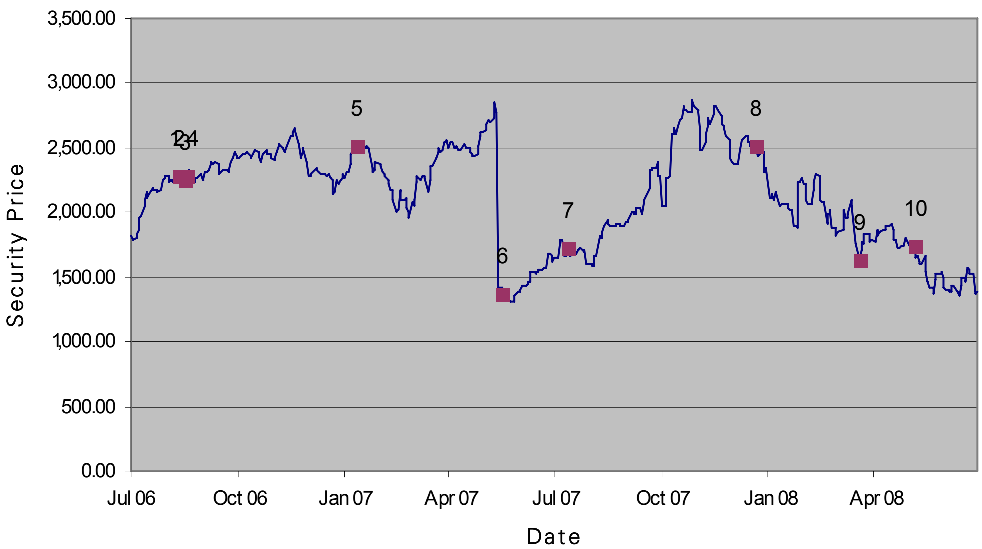
Buy
Hold
Sell
Not Rated
Suspended Rating

*New Recommendation Structure as of September 9, 2002

1.	29/8/2006:	Buy, INR579.00	5.	27/7/2007:	Buy, Target Price Change INR1,470.00
2.	30/8/2006:	Buy, Target Price Change INR4,250.00	6.	25/10/2007:	Buy, Target Price Change INR1,730.00
3.	18/2/2007:	Buy, Target Price Change INR4,850.00	7.	19/2/2008:	Buy, Target Price Change INR1,500.00
4.	3/7/2007:	Buy, Target Price Change INR970.00	8.	25/4/2008:	Buy, Target Price Change INR1,430.00

Historical recommendations and target price: BHEL (BHEL.BO)

(as of 7/17/2008)



Previous Recommendations

Strong Buy
Buy
Market Perform
Underperform
Not Rated
Suspended Rating

Current Recommendations

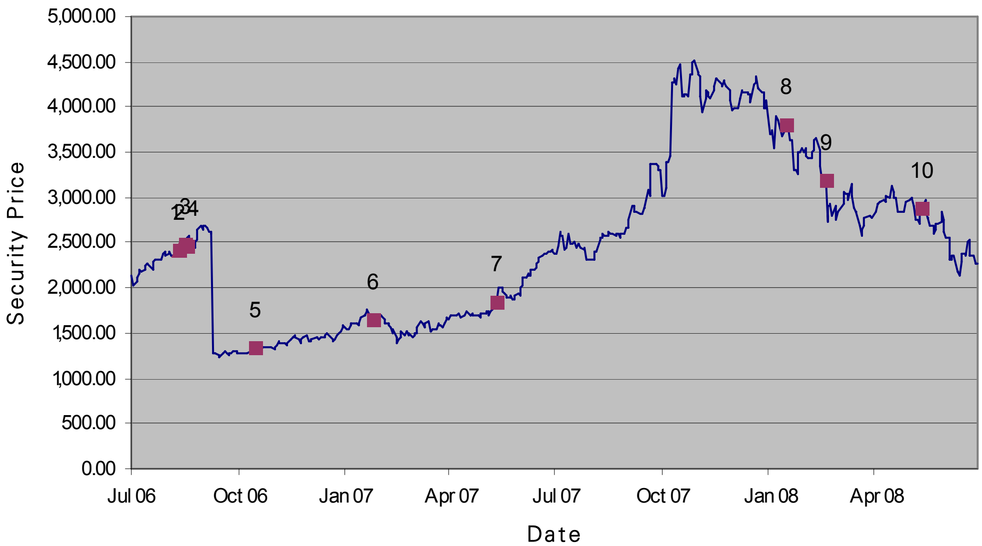
Buy
Hold
Sell
Not Rated
Suspended Rating

*New Recommendation Structure as of September 9, 2002

1.	29/8/2006:	Buy, Target Price Change INR3,100.00	6.	5/6/2007:	Buy, Target Price Change INR1,751.00
2.	30/8/2006:	Buy, Target Price Change INR2,970.00	7.	31/7/2007:	Buy, Target Price Change INR2,000.00
3.	4/9/2006:	Buy, Target Price Change INR3,100.00	8.	8/1/2008:	Buy, Target Price Change INR3,070.00
4.	5/9/2006:	Buy, Target Price Change INR2,970.00	9.	7/4/2008:	Buy, Target Price Change INR2,100.00
5.	29/1/2007:	Buy, Target Price Change INR3,125.00	10.	25/5/2008:	Buy, Target Price Change INR2,000.00

Historical recommendations and target price: Larsen & Toubro Ltd (LART.BO)

(as of 7/17/2008)



Previous Recommendations

Strong Buy
Buy
Market Perform
Underperform
Not Rated
Suspended Rating

Current Recommendations

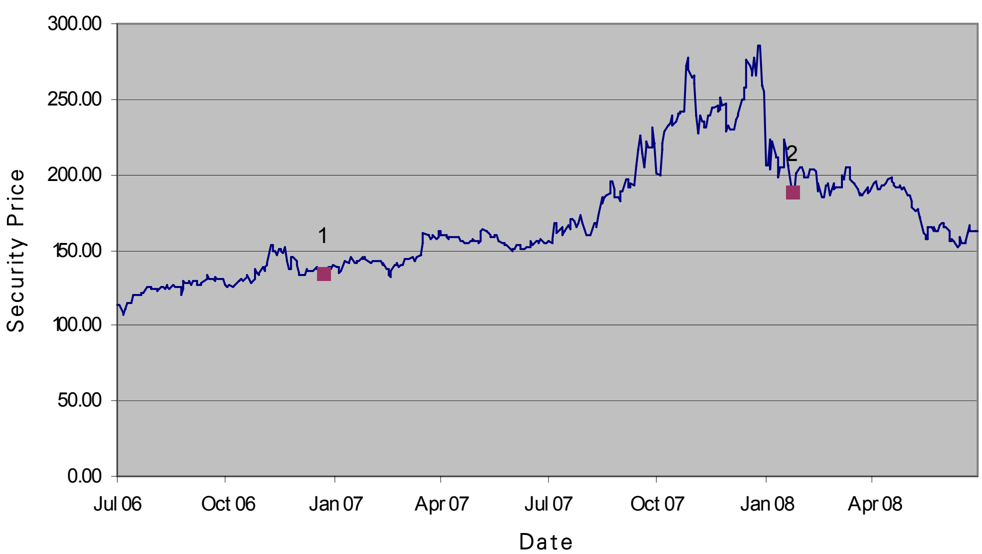
Buy
Hold
Sell
Not Rated
Suspended Rating

*New Recommendation Structure as of September 9, 2002

1.	29/8/2006:	Upgrade to Buy, Target Price Change INR2,700.00	6.	12/2/2007:	Buy, Target Price Change INR2,088.00
2.	30/8/2006:	Buy, Target Price Change INR2,750.00	7.	30/5/2007:	Buy, Target Price Change INR2,590.00
3.	4/9/2006:	Buy, Target Price Change INR2,400.00	8.	4/2/2008:	Buy, Target Price Change INR4,200.00
4.	5/9/2006:	Buy, Target Price Change INR2,750.00	9.	9/3/2008:	Buy, Target Price Change INR3,960.00
5.	3/11/2006:	Buy, Target Price Change INR1,375.00	10.	30/5/2008:	Buy, Target Price Change INR3,600.00

Historical recommendations and target price: NTPC Limited (NTPC.BO)

(as of 7/17/2008)



Previous Recommendations

Strong Buy
Buy
Market Perform
Underperform
Not Rated
Suspended Rating

Current Recommendations

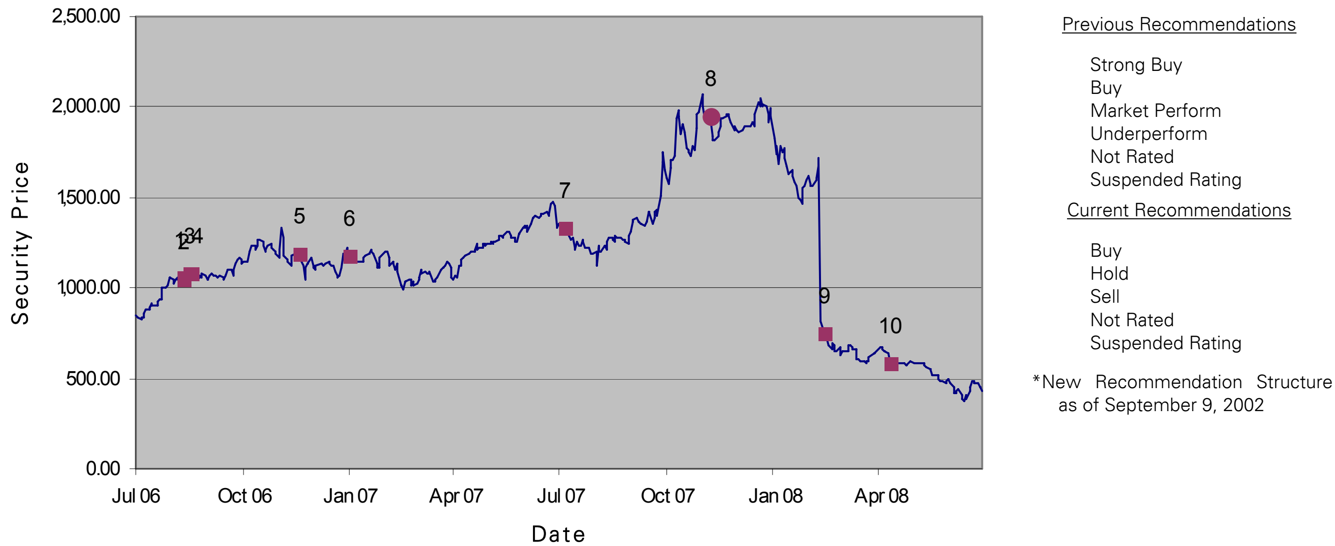
Buy
Hold
Sell
Not Rated
Suspended Rating

*New Recommendation Structure as of September 9, 2002

1.	10/1/2007:	No Recommendation, Target Price Change INR0.00	2.	12/2/2008:	Buy, Target Price Change INR220.00

Historical recommendations and target price: Siemens India Ltd (SIEM.BO)

(as of 7/17/2008)



1.	29/8/2006:	Buy, Target Price Change INR1,250.00	6.	19/1/2007:	Buy, Target Price Change INR1,486.00
2.	30/8/2006:	Buy, Target Price Change INR1,196.00	7.	24/7/2007:	Buy, Target Price Change INR1,550.00
3.	4/9/2006:	Buy, Target Price Change INR1,250.00	8.	26/11/2007:	Downgrade to Hold, Target Price Change INR2,000.00
4.	5/9/2006:	Buy, Target Price Change INR1,196.00	9.	4/3/2008:	Hold, Target Price Change INR1,000.00
5.	7/12/2006:	Buy, Target Price Change INR1,343.00	10.	29/4/2008:	Hold, Target Price Change INR580.00

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Buy: Based on a current 12- month view of total share-holder return (TSR = percentage change in share price from current price to projected target price plus pro-jected dividend yield) , we recommend that investors buy the stock.

Sell: Based on a current 12-month view of total share-holder return, we recommend that investors sell the stock

Hold: We take a neutral view on the stock 12-months out and, based on this time horizon, do not recommend either a Buy or Sell.

Notes:
1. Newly issued research recommendations and target prices always supersede previously published research.

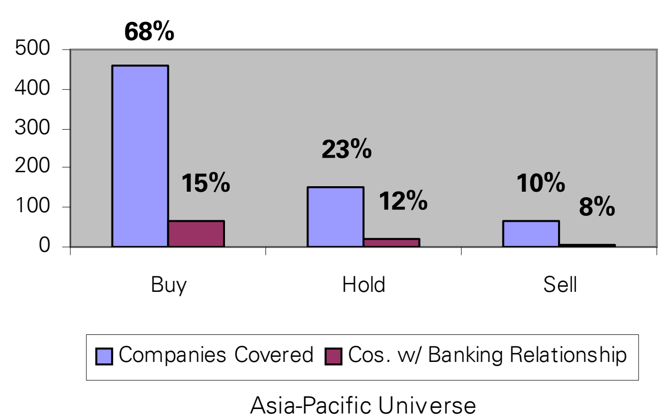
2. Ratings definitions prior to 27 January, 2007 were:

Buy: Expected total return (including dividends) of 10% or more over a 12-month period

Hold: Expected total return (including dividends) between -10% and 10% over a 12-month period

Sell: Expected total return (including dividends) of -10% or worse over a 12-month period

Equity rating dispersion and banking relationships



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Asia-Pacific locations

Deutsche Bank AG
Deutsche Bank Place
Level 16
Corner of Hunter & Phillip Streets
Sydney, NSW 2000
Australia
Tel: (61) 2 8258 1234

Deutsche Bank AG
Level 55
Cheung Kong Center
2 Queen's Road Central
Hong Kong
tel: (852) 2203 8888

Deutsche Equities India Pte Ltd
DB House, Ground Floor
Hazarimal Somani Marg
Fort, Mumbai 400 001
India
Tel: (91) 22 5658 4600

Deutsche Securities Inc.
2-11-1 Nagatacho
Sanno Park Tower
Chiyoda-ku, Tokyo 100-6171
Japan
Tel: (81) 3 5156 6701

Deutsche Bank (Malaysia) Berhad
Level 18-20
Menara IMC
8 Jalan Sultan Ismail
Kuala Lumpur 50250
Malaysia
Tel: (60) 3 2053 6760

In association with
Deutsche Regis Partners, Inc.
Level 23, Tower One
Ayala Triangle, Ayala Avenue
Makati City, Philippines
Tel: (63) 2 894 6600

Deutsche Securities Korea Co.
17th Floor, YoungPoong Bldg.,
33 SeoRin-Dong,
Chongro-Ku, Seoul (110-752)
Republic of Korea
Tel: (82) 2 316 8888

Deutsche Bank AG Singapore
One Raffles Quay
South Tower
Singapore 048583
Tel: (65) 6423 8001

Deutsche Securities Asia Ltd
Taiwan Branch
Level 6
296 Jen-Ai Road, Sec 4
Taipei 106
Taiwan
Tel: (886) 2 2192 2888

In association with
TISCO Securities Co., Ltd
TISCO Tower
48/8 North Sathorn Road
Bangkok 10500
Thailand
Tel: (66) 2 633 6470

In association with
PT Deutsche Verdhana Indonesia
Deutsche Bank Building,
6th Floor, Jl. Imam Bonjol No.80,
Central Jakarta,
Indonesia
Tel: (62 21) 318 9541

International locations

Deutsche Bank Securities Inc.
60 Wall Street
New York, NY 10005
United States of America
Tel: (1) 212 250 2500

Deutsche Bank AG London
1 Great Winchester Street
London EC2N 2EQ
United Kingdom
Tel: (44) 20 7545 8000

Deutsche Bank AG
Große Gallusstraße 10-14
60272 Frankfurt am Main
Germany
Tel: (49) 69 910 0

Deutsche Bank AG
Deutsche Bank Place
Level 16
Corner of Hunter & Phillip Streets
Sydney, NSW 2000
Australia
Tel: (61) 2 8258 1234

Deutsche Bank AG
Level 55
Cheung Kong Center
2 Queen's Road Central
Hong Kong
Tel: (852) 2203 8888

Deutsche Securities Inc.
2-11-1 Nagatacho
Sanno Park Tower
Chiyoda-ku, Tokyo 100-6171
Japan
Tel: (81) 3 5156 6701

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