Company Focus

9 September 2008 | 28 pages

Tata Power (TTPW.BO)

Target price change ☑
Estimate change ☑

Buy: Power Capacity Growth + Coal Hedge + Superior Execution

- **Stock does not look very expensive, and company is delivering —** As Tata Power reports standalone numbers on a quarterly basis, one tends to believe the stock is very expensive. While it trades on a P/E of 36.8x FY09E (EPS CAGR 13%) on parent numbers, it is at 13.8x on a consolidated basis (EPS CAGR 53%). More important, the 5,824MW capacity Tata Power is building is running well on schedule. NDPL's AT&C loss reduction to 18.5% (vs. a target of 22%) in FY09E is another proof of execution.

- **Highly leveraged to coal prices** — 41% of our target price is contributed by the Mundra + Indonesian mines. At a long-term average selling price of US$70/t for coal (vs. current international FOB coal prices at US$163/t), we get a fair value of Rs592/share for the combination. Further, every US$10/t rise/fall in our selling price assumption would cause a Rs121 rise/fall in per-share value.

- **Simplistic view: Long 24mn tonnes of coal** — On our estimates, Mundra UMPP will require 11m tonnes of coal annually, and of this, 55% or 6m tonnes cannot be escalated in the tariffs. As a consequence, if we assume that in the longer term the Indonesian coal mines would produce 100m tonnes per year, Tata Power's 30% ownership would effectively mean that the company is long 24m tonnes of imported coal at an acquisition cost of US$1.2bn.

- **Top India electric utility pick** — We revise our parent EPS estimates (FY09E up by 2% and FY10E/11E down 6-10%) and adjust our target price to Rs1,453 (from Rs1,494). Tata Power is now our top pick in the India Electric Utility universe, replacing NTPC (NTPC.BO; Rs179.35; 1L).

Buy/Low Risk	**1L**
Price (09 Sep 08)	Rs1,076.00
Target price	Rs1,453.00
from Rs1,494.00	
Expected share price return	35.0%
Expected dividend yield	1.1%
Expected total return	**36.2%**
Market Cap	Rs237,560M
	US$5,337M

Price Performance (RIC: TTPW.BO, BB: TPWR IN)

Figure 1. Statistical Abstract

Year to	Parent PAT	Parent FD EPS	Growth	Parent P/E	ROE	Div. Yield	Cons PAT	Cons FD EPS	Growth	Cons P/E
31-Mar	(Rsmn)	(Rsmn)	%	(x)	(%)	(%)	(Rsmn)	(Rsmn)	%	(x)
FY06	4,633	21.79	-	49.4	9.7%	0.8%	4,897	23.0	-	46.7
FY07	5,160	24.27	11.4%	44.3	9.9%	0.9%	5,788	27.2	18.2%	39.5
FY08	5,812	24.95	2.8%	43.1	9.0%	1.0%	7,663	32.9	20.9%	32.7
FY09E	6,805	29.22	17.1%	36.8	8.1%	1.1%	18,125	77.8	136.5%	13.8
FY10E	7,524	32.31	10.6%	33.3	8.0%	1.2%	26,063	111.9	43.8%	9.6
FY11E	8,350	35.86	11.0%	30.0	8.5%	1.3%	27,213	116.9	4.4%	9.2

Source: Company and Citi Investment Research estimates

Venkatesh Balasubramaniam[1]
+91-22-6631-9864
venkatesh.balasubramaniam@citi.com

Deepal Delivala[1]
+91-22-6631-9857
deepal.delivala@citi.com

Atul Tiwari[1]
+91-22-6631-9866
atul.tiwari@citi.com

See Appendix A-1 for Analyst Certification and important disclosures.

[1]Citigroup Global Markets India Private Limited

Fiscal year end 31-Mar	2007	2008	2009E	2010E	2011E
Valuation Ratios					
P/E adjusted (x)	44.3	43.1	36.8	33.3	30.0
EV/EBITDA adjusted (x)	34.3	25.8	20.4	17.1	14.7
P/BV (x)	3.9	3.2	2.7	2.6	2.5
Dividend yield (%)	0.9	1.0	1.1	1.2	1.3
Per Share Data (Rs)					
EPS adjusted	24.27	24.95	29.22	32.31	35.86
EPS reported	32.77	37.35	29.22	32.31	35.86
BVPS	275.42	340.59	398.81	416.15	435.90
DPS	9.51	10.94	12.00	13.00	14.00
Profit & Loss (RsM)					
Net sales	46,590	58,710	66,456	74,193	81,827
Operating expenses	-42,838	-52,698	-58,939	-65,623	-72,013
EBIT	**3,752**	**6,012**	**7,518**	**8,569**	**9,814**
Net interest expense	-1,895	-1,419	-1,911	-2,233	-2,601
Non-operating/exceptionals	4,003	2,256	2,400	2,515	2,610
Pre-tax profit	**5,860**	**6,850**	**8,006**	**8,851**	**9,824**
Tax	-700	-1,038	-1,201	-1,328	-1,474
Extraord./Min.Int./Pref.div.	1,808	2,887	0	0	0
Reported net income	**6,968**	**8,699**	**6,805**	**7,524**	**8,350**
Adjusted earnings	5,160	5,812	6,805	7,524	8,350
Adjusted EBITDA	6,671	8,917	10,886	12,497	14,033
Growth Rates (%)					
Sales	3.7	26.0	13.2	11.6	10.3
EBIT adjusted	-27.4	60.2	25.0	14.0	14.5
EBITDA adjusted	-16.1	33.7	22.1	14.8	12.3
EPS adjusted	11.4	2.8	17.1	10.6	11.0
Cash Flow (RsM)					
Operating cash flow	**7,553**	**829**	**10,827**	**11,059**	**16,294**
Depreciation/amortization	2,919	2,905	3,369	3,927	4,219
Net working capital	-2,553	-10,907	653	-392	3,725
Investing cash flow	**-10,464**	**-20,262**	**-13,665**	**-18,230**	**-17,847**
Capital expenditure	-8,885	-11,664	-4,965	-5,378	-1,000
Acquisitions/disposals	-1,580	-8,599	-8,700	-12,852	-16,847
Financing cash flow	**6,683**	**6,043**	**10,210**	**1,509**	**1,740**
Borrowings	8,784	-5,961	0	5,000	5,500
Dividends paid	-2,202	-2,683	-3,245	-3,515	-3,786
Change in cash	**3,772**	**-13,390**	**7,373**	**-5,663**	**187**
Balance Sheet (RsM)					
Total assets	**114,233**	**129,927**	**150,163**	**161,366**	**173,711**
Cash & cash equivalent	13,677	287	7,660	1,997	2,184
Accounts receivable	14,782	14,145	16,012	17,876	19,715
Net fixed assets	38,114	46,872	48,468	49,919	46,700
Total liabilities	**59,721**	**54,752**	**57,995**	**65,189**	**72,970**
Accounts payable	8,934	9,988	11,306	12,622	13,921
Total Debt	36,334	30,373	30,373	35,373	40,873
Shareholders' funds	**54,512**	**75,175**	**92,168**	**96,177**	**100,741**
Profitability/Solvency Ratios (%)					
EBITDA margin adjusted	14.3	15.2	16.4	16.8	17.1
ROE adjusted	9.9	9.0	8.1	8.0	8.5
ROIC adjusted	6.2	7.9	8.5	9.5	11.3
Net debt to equity	41.6	40.0	24.6	34.7	38.4
Total debt to capital	40.0	28.8	24.8	26.9	28.9

For further data queries on Citi's full coverage universe please contact CIR Data Services Asia Pacific at CIRDataServicesAsiaPacific@citi.com or +852-2501-2791

Powered by: dataCentral

Contents

Investment Thesis and Valuations

Target price Rs1,453. Maintain Buy

- Tata Power is embarking on an ambitious but measured plan of multiplying generation capacity four-fold to 10GW in the next 4 years and six-fold to 13GW in the next 6 years. Given the company's new aggressive management and good execution track record, as evident by the reduction of AT&C losses from 53% before privatization to 18.5% in 6 years in NDPL, Tata Power has, in our view, a realistic chance of achieving these targets.

- Tata Power does not report its consolidated numbers on a quarterly basis and as a result investors tend to focus on standalone parent numbers and see the stock as expensive.

- As Tata Power reports standalone numbers on a quarterly basis one tends to believe the stock is very expensive. While it trades at a P/E of 36.8x FY09E (EPS CAGR 13%) on parent numbers, it is at 13.8x on a consolidated basis (EPS CAGR 53%). More important, the 5824MW capacity the company is building is running well on schedule. NDPL's AT&C loss reduction to 18.5% (vs. a target of 22%) in FY09E is another proof of execution.

- We maintain our Buy/Low Risk rating on Tata Power, which is now our top pick in our India Electric Utility universe, replacing NTPC.

Figure 2. Tata Power — Parent to Consolidated Profits Reconciliation

Year to Mar 31 (Rsmn)	Stake	FY07	FY08	FY09E	FY10E	FY11E	FY12E	FY13E	FY14E	FY15E
Parent Recurring PAT	**100%**	**5,160**	**5,812**	**6,805**	**7,524**	**8,350**	**9,767**	**11,127**	**12,823**	**14,872**
Indonesian Coal Mines	30%		3,936	13,131	19,942	22,254	20,171	22,513	23,595	24,630
Less: Acquisition Interest			(3,230)	(3,100)	(2,850)	(2,554)	(2,148)	(1,696)	(737)	-
Maithon	74%		-	-	-	(2,458)	1,347	3,142	3,169	3,178
Mundra UMPP	100%		-	-	-	-	(8,147)	58	6,314	6,154
Extra cost of coal	100%						(1,548)	(7,225)	(10,967)	(10,967)
NDPL	51%	923	1,436	1,580	1,738	1,911	2,103	2,313	2,544	2,798
Others		(295)	(290)	(290)	(290)	(290)	(290)	(290)	(290)	(290)
Consolidated Recurring PAT		**6,083**	**7,663**	**18,125**	**26,063**	**27,213**	**21,253**	**29,941**	**36,450**	**40,376**
Exceptional Items		1,808	2,887	-	-	-	-	-	-	-
Consolidated Reported PAT		**7,891**	**10,551**	**18,125**	**26,063**	**27,213**	**21,253**	**29,941**	**36,450**	**40,376**
FD Shares		212.6	232.9	232.9	232.9	232.9	232.9	232.9	232.9	232.9
Stock Price		1,105	1,105	1,105	1,105	1,105	1,105	1,105	1,105	1,105
Parent FD EPS		**24.3**	**25.0**	**29.2**	**32.3**	**35.9**	**41.9**	**47.8**	**55.1**	**63.9**
Growth			2.8%	17.1%	10.6%	11.0%	17.0%	13.9%	15.2%	16.0%
Consolidated FD EPS		**28.6**	**32.9**	**77.8**	**111.9**	**116.9**	**91.3**	**128.6**	**156.5**	**173.4**
Growth			15.0%	136.5%	43.8%	4.4%	-21.9%	40.9%	21.7%	10.8%
Parent P/E		**44.3**	**43.1**	**36.8**	**33.3**	**30.0**	**25.7**	**22.5**	**19.5**	**16.8**
Consolidated P/E		**39.5**	**32.7**	**13.8**	**9.6**	**9.2**	**11.8**	**8.4**	**6.9**	**6.2**

Source: Company and Citi Investment Research estimates

Figure 3. Tata Power vs. BSE Sensex

	1 Month	3 Months	6 Months	1 Yr	2 Yr	3 Yr
Tata Power	3.9%	-13.7%	-3.1%	53.1%	105.0%	138.4%
Sensex	-1.5%	-4.0%	-6.5%	-4.1%	25.4%	85.6%
Relative	5.4%	-9.6%	3.3%	57.3%	79.6%	52.8%

Source: dataCentral

We are cutting our target price to Rs1,453 based on the changes shown in the table below.

Figure 4. Tata Power — Sum of the Parts

Part	Old Method	New Method	Old Value	New Value
Parent Power + SED Business	DCF as of Dec 08 (WACC = 10.3%, g = 2.5%)	DCF as of June 09 (WACC = 13%, g = 2%)	507	538
NDPL (51% stake)	3.0x FY07 Book Value	3.0x FY08 Book Value	42	57
Power Links (51% stake)	2.0x FY07 P/Equity Investment	1.5x FY08 Book Value	20	16
Maithon Project (74% Stake) - 1050MW	DCF Value as of Dec 08 – Re = 12%	DCF as of June 09 – Re = 13%	50	36
IEL - 240MW	-	DCF as of June 09 – Re = 13%	-	16
Mundra UMPP (100% Stake)	DCF Value as of Dec 08 - Re = 12%	DCF as of June 09 – Re = 13%	223	(164)
Indonesian Coal Miness (30% Stake)	Mkt Cap @ 80% of mkt price - Acquisition Amount	DCF as of June 09 – Re = 13%	344	757
Mundra + Indonesian Coal Mines		**@ long term coal price of US$70/tonne**	**568**	**592**
Power + Coal Businesses			**1,188**	**1,256**
TTMSL (11.5% direct/indirect stake)	20% Discount to Current MV	20% Discount to Current MV	27	20
TTSL (11.2% direct stake)	75% Premium to Private Equity Transacted Value	Based CIR Telecom Team Valuations	113	57
VSNL (17.2% direct/indirect stake)	20% Discount to Current MV	20% Discount to Current MV	87	70
Value of Telecom Investments			**227**	**146**
Tata BP Solar (49% Stake)	30x FY07 PAT	20x FY08 PAT	26	10
NELCO (Direct and Indirect Stake 50%)	20% Discount to Current MV	20% Discount to Current MV	7	3
TCS (Indirect 1.4% stake)	20% Discount to Current MV	20% Discount to Current MV	46	38
Other Investments			**80**	**51**
Target Price			**1,494**	**1,453**

Source: Citi Investment Research estimates

Earnings revisions

We have adjusted our earnings estimates up by 1.5% for FY09E and down by 6-10% for FY10E-11E to factor in:

- Higher tariff assumptions post the release of the FY09E tariff order, which has led us to hike our sales estimates by 9-12%;
- This has also led to a 50-80bp hike in our EBITDA margins; and
- However, given the tighter interest rate environment we have raised our interest expense, leading to a 6-10% cut in FD EPS estimates over FY10E and FY11E.

We now expect Tata Power's (parent) FD EPS to grow at a CAGR of 13% over FY08-10E, with RoEs at 8-9%.

Figure 5. Earnings Revisions (Rs M)

	FY09E	FY10E	FY11E
Sales			
Old	60,698	66,260	73,040
New	66,456	74,193	81,827
% Change	9.5%	12.0%	12.0%
EBITDA			
Old	9,407	10,805	12,150
New	10,886	12,497	14,033
% Change	15.7%	15.7%	15.5%
EBITDA Margin %			
Old	15.5%	16.3%	16.6%
New	16.4%	16.8%	17.1%
% Change	88	54	51
Recurring PAT			
Old	6,706	8,048	9,298
New	6,805	7,524	8,350
% Change	1.5%	-6.5%	-10.2%
EPS (Rs)			
Old	28.80	34.56	39.93
New	29.22	32.31	35.86
% Change	1.5%	-6.5%	-10.2%

Source: Citi Investment Research estimates

Indonesian Coal Mines + Mundra Equation

(1) Simplistic Approach = Long 24m tonnes of coal

- Tata Power has a firm offtake agreement with the Indonesian coal mines of 10.1m tonnes (+/- 20%, at the company's option). Based on our estimates of the heat rate of the plant at 1,970 kcal/kWh and gross calorific value of coal of 5,350 kcal/kg, we believe that Mundra UMPP will require ~11m tonnes/year of coal to run at a plant load factor (PLF) of 85%.

- For the first 5 years of the plant, 25% of the requirement (11 X .25 = 2.74m tonnes/year) would come at price of ~ US$45/t and the remaining 75% would come at the prevailing market prices at the time. After 5 years the entire 100% of the requirement would be procured at the prevailing market prices.

- At the other end of the contract, i.e. the tariff of Mundra UMPP, 45% of fuel price component is escalated, which implies that 55% of the fuel price component (55% X 11 = 6.05mn tonnes/year) in the tariff is unhedged.

- Over the longer term if we assume that that the Indonesian coal mines will be producing 100m tonnes/year, Tata Power's stake of 30% is equivalent to the company being long on 30m tonnes of imported coal.

- Simplistically if subtract the unhedged portion of the coal requirement, it effectively means that Tata Power has gone long 24m tonnes of imported coal paying an acquisition cost of US$1.2bn in June 2007 and this trade has proved to be extremely value accretive.

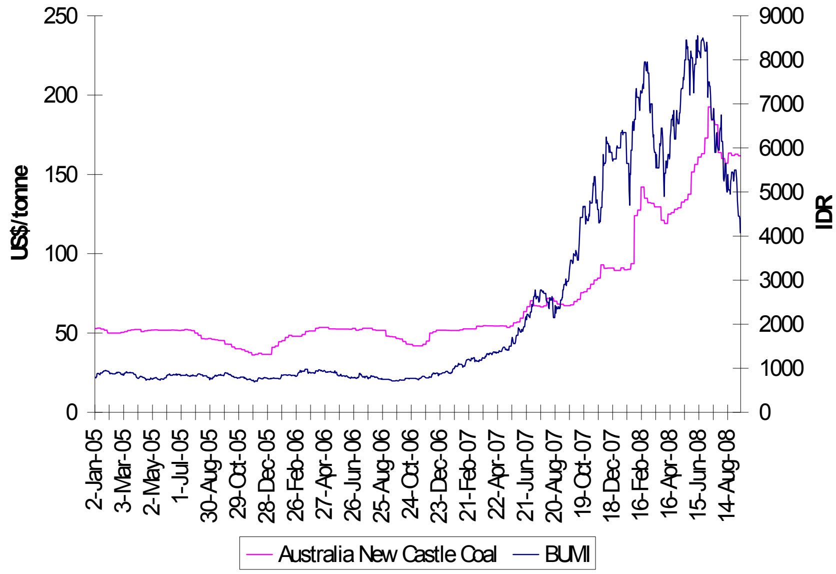
Figure 6. Indonesian Coal Mines + Mundra = Long 24mn Tonnes of Coal

Bumi Resources Stock Price (IDR)	@ CIR TP	7000	6500	6000	5500	5000	Current Price	4000	3500	3000
Shares (mn)	19,404	19,404	19,404	19,404	19,404	19,404	19,404	19,404	19,404	19,404
Price (IDR)	8,300	7,000	6,500	6,000	5,500	5,000	4,425	4,000	3,500	3,000
Bumi's 70% stake in coal mines worth (US$mn)	17,336	14,621	13,577	12,532	11,488	10,443	9,242	8,355	7,310	6,266
Exchange Rate (USDIDR)	9,290	9,290	9,290	9,290	9,290	9,290	9,290	9,290	9,290	9,290
Tata Power's 24% stake in mines worth (US$mn)	5,944	5,013	4,655	4,297	3,939	3,581	3,169	2,864	2,506	2,148
Less Payment Made (US$mn)	(1,200)	(1,200)	(1,200)	(1,200)	(1,200)	(1,200)	(1,200)	(1,200)	(1,200)	(1,200)
Incremental Value Added From Bumi Stake (US$mn)	4,744	3,813	3,455	3,097	2,739	2,381	1,969	1,664	1,306	948
USDINR Exchange Rate Assumed	42	42	42	42	42	42	42	42	42	42
Value to Tata Power (Rsmn)	**199,241**	**160,141**	**145,102**	**130,063**	**115,025**	**99,986**	**82,692**	**69,909**	**54,870**	**39,832**
Incremental value to Tata Power/share	**856**	**688**	**623**	**558**	**494**	**429**	**355**	**300**	**236**	**171**

Source: Citi Investment Research estimates

However, this approach of arriving at the value of Tata Power's stake in the Indonesian coal mines is extremely simplistic and largely dependent on investor sentiments about the Bumi Resources stock. A more rigorous approach would be to do a discounted cash flow analysis of Mundra UMPP and the Indonesian coal mines.

Figure 7. Bumi Resources Stock Price vs. Australia New Castle Coal Prices



Source: Bloomberg and Citi Investment Research

(2) DCF value of Mundra + Indonesian Coal Mines

- In our more rigorous attempt to capture the value in Mundra UMPP + Indonesian coal mines, we have built DCF models for both using a free cash flow to equity approach (FCFE) and using a cost of equity of 13%.
- We have modelled the combination under various long-term (prices from CY11E/FY12E when Mundra UMPP's first unit would get commissioned) coal price assumptions of US$40/tonne to US$120.
- However, it is pertinent to note that at higher coal prices Mundra UMPP might start making losses which might make the normal running unviable in terms of working capital funding and also present a scenario difficult to model from a valuation perspective.
- As a consequence we keep the FOB coal price of Mundra UMPP constant at US$40/tonne. However, we have factored in the differential between the assumed FOB prices and the actual market price and assumed it as a cost which the acquisition SPV or the Tata Power parent would bear. At long term average selling price of US$70/tonne we arrive at a fair value of Rs592/share for Mundra UMPP + the Indonesian coal mines. Further, every US$10/tonne rise or fall in the long term selling price assumption causes a Rs121/share fall in the value of the combination

Figure 8. Indonesian Coal Mines + Mundra UMPP @ Various Long Term (Post CY11E = FY12E) Coal Prices

Long Term Coal Price (US$/tonne)	Coal Mine Value	Mundra with coal @ US$45/tonne	Excess Cost of Coal	Overall Value
US$40/tonne				
- Rsmn	25,544	16,751	11,008	53,303
- per share	110	72	47	229
US$50/tonne				
- Rsmn	75,764	16,751	(11,008)	81,506
- per share	325	72	(47)	350
US$60/tonne				
- Rsmn	125,991	16,751	(33,025)	109,717
- per share	541	72	(142)	471
US$70/tonne				
- Rsmn	176,219	16,751	(55,042)	137,928
- per share	757	72	(236)	592
US$80/tonne				
- Rsmn	226,447	16,751	(77,059)	166,139
- per share	972	72	(331)	713
US$90/tonne				
- Rsmn	276,674	16,751	(99,075)	194,350
- per share	1,188	72	(425)	835
US$100/tonne				
- Rsmn	326,902	16,751	(121,092)	222,560
- per share	1,404	72	(520)	956
US$110/tonne				
- Rsmn	377,129	16,751	(143,109)	250,771
- per share	1,619	72	(615)	1,077
US$120/tonne				
- Rsmn	427,357	16,751	(165,126)	278,982
- per share	1,835	72	(709)	1,198

Source: Citi Investment Research estimates

(3) Sensitivity to coal tax rate assumptions

- Our valuation factors in a tax expense of 30% for the coal mines in Indonesia. We note that Bumi's effective tax rate is much lower compared to the 45% tax rate for coal contracts of work (CCOW) and 30% corporate tax rate for Indonesia. The reason we continue to use an effective tax rate of 30% is because Bumi Resources management maintains the guidance of 30% tax rate going forward (vs. CCoW's tax of 45%) and our Bumi Resources analyst, Erindra Krisnawan, is using these rates.

- However, we have done a sensitivity analysis to various effective tax rates as shown in the table below. For every 5% increase in effective tax rates our Mundra UMPP + Indonesian coal mines value and our target price would fall by Rs68/share. Further, the maximum downside to our valuation is Rs204/share, based on our analysis.

Figure 9. . Indonesian Coal Mines + Mundra UMPP @ US$70/tonne (Post CY11E = FY12E) Coal Prices at Various Tax Rates

Coal Mines Effective Tax Rate	Coal Mine Value	Mundra with coal @ US$45/tonne	Excess Cost of Coal	Overall Value
30.0%				
- Rsmn	176,221	16,751	(55,042)	137,930
- per share	757	72	(236)	592
35.0%				
- Rsmn	160,412	16,751	(55,042)	122,121
- per share	689	72	(236)	524
40.0%				
- Rsmn	144,604	16,751	(55,042)	106,313
- per share	621	72	(236)	457
45.0%				
- Rsmn	128,796	16,751	(55,042)	90,505
- per share	553	72	(236)	389

Source: Citi Investment Research estimates

Figure 10. Bumi Resources — Earnings Model

FY End Dec (US$mn)	Dec-06	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11	Dec-12	Dec-13	Dec-14	Dec-15
	A	A	E	E	E	E	E	E	E	E
Production										
KPC(mn tons)	38	40	41	44	48	58	63	65	66	67
Arutmin (mn tons)	16	16	16	18	20	24	26	27	29	30
Total (mn tons)	**54**	**55**	**57**	**62**	**68**	**81**	**89**	**92**	**94**	**97**
% Change	*19.4%*	*3.6%*	*3.6%*	*8.6%*	*8.6%*	*20.0%*	*10.0%*	*2.9%*	*2.9%*	*2.9%*
Sales										
KPC(mn tons)	35	40	41	44	48	58	63	65	66	67
Arutmin (mn tons)	15	16	16	18	20	24	26	27	29	30
Total (mn tons)	**50**	**55**	**57**	**62**	**68**	**81**	**89**	**92**	**94**	**97**
% Change	*12.6%*	*10.8%*	*3.6%*	*8.6%*	*8.6%*	*20.0%*	*10.0%*	*2.9%*	*2.9%*	*2.9%*
ASP	**41**	**44**	**78**	**92**	**92**	**70**	**70**	**70**	**70**	**70**
ASP Growth	*4%*	*8%*	*76%*	*19%*	*0%*	*-24%*	*0%*	*0%*	*0%*	*0%*
Revenue	**2,041**	**2,438**	**4,456**	**5,738**	**6,228**	**5,681**	**6,249**	**6,428**	**6,614**	**6,807**
GoI Royalty	6%	6%	7%	7%	7%	7%	7%	7%	7%	7%
Revenue post royalty	**1,852**	**2,265**	**4,144**	**5,337**	**5,792**	**5,283**	**5,811**	**5,978**	**6,151**	**6,330**
YoY growth		*22%*	*83%*	*29%*	*9%*	*-9%*	*10%*	*3%*	*3%*	*3%*
COGS	1,322	1,511	2,001	2,263	2,438	2,296	2,526	2,607	2,693	2,782
Gross Profit	**529**	**754**	**2,143**	**3,073**	**3,353**	**2,987**	**3,285**	**3,371**	**3,459**	**3,548**
Gross Margin	**29%**	**33%**	**52%**	**58%**	**58%**	**57%**	**57%**	**56%**	**56%**	**56%**
Selling	128	285	445	572	620	568	624	643	662	683
as % of Revenue	7%	13%	11%	11%	11%	11%	11%	11%	11%	11%
G&A	74	63	112	141	153	138	153	159	169	175
as % of Revenue	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Operating Expenses	202	348	557	713	773	706	777	802	832	858
EBIT	**327**	**406**	**1,587**	**2,361**	**2,580**	**2,281**	**2,508**	**2,569**	**2,627**	**2,690**
Operating Margin	**18%**	**18%**	**38%**	**44%**	**45%**	**43%**	**43%**	**43%**	**43%**	**42%**
Total other expenses	(103)	449	(23)	14	69	121	172	240	305	304
PBT	**225**	**855**	**1,563**	**2,374**	**2,649**	**2,401**	**2,680**	**2,809**	**2,932**	**2,994**
Tax	3	15	469	712	795	720	804	843	880	898
Tax Rate	1.1%	1.7%	30%	30%	30%	30%	30%	30%	30%	30%
Income pre minorities	**222**	**840**	**1,094**	**1,662**	**1,854**	**1,681**	**1,876**	**1,966**	**2,053**	**2,096**
Minority Interest	0	51	367	545	596	527	579	593	607	621
PAT	**222**	**789**	**728**	**1,117**	**1,259**	**1,154**	**1,297**	**1,373**	**1,446**	**1,474**
PAT margin	12%	35%	18%	21%	22%	22%	22%	23%	24%	23%
Dividend	22.2	163.7	512.9	473	558	629	577	648	686	723

Source: Citi Investment Research estimates

Comments by our Indonesian coal analyst

According to Erindra Krisnawan, our Bumi Resources analyst:

Market has priced in worst-case scenarios

- **Over-penalized; reiterate Buy** — Bumi has taken a further hit in recent weeks as the Street has (finally) reacted to cut '08E production and incorporate 'higher risk premium' in valuation. These are in contrast to more clarity on the domestic issues seen of late and the firm coal price at US$163/t. While some uncertainty remains, we believe the current share price has priced in worst-case scenarios and therefore see attractive entry at current prices.

- **More clarity on KPC issue** — Local authorities have reopened six pits at Bumi's KPC mine, thus allowing production to restart. We estimate 1.4-1.6m tons of production loss during the closure – thus, our '08 production forecast of 57m tons should still look realistic.

- **What could still surprise?** — While we do not expect any surprises from the audit process by state auditors on royalty calculation, discrepancies may lie on what might be revealed as the 'actual' sales volume and selling price. Taking a worst-case view on tax, our DCF valuation (Rp8300) could take a 24% hit if Bumi adjusts its past and future tax rate to 45% (in-line with CCOW).

- **Current price implies unrealistic coal price expectation** — We estimate that the current share price implies a coal price of US$90/t (assuming base case tax scenario), which we believe is unrealistic since coal's supply-demand fundamentals remain unchanged. Thus, despite the possible '08 production shortfall and one-off settlement on royalty and tax (largely cash impact), we believe Bumi's strong earnings growth outlook in '09-10E should remain intact.

No surprises in 1H08 results

- **Key takeaways** — With no surprises in the 1H08 audited results (vs. the "estimated" numbers announced earlier this month), the focus is now on 2008 volume achievement, downside risk from the KPC forestry permit situation and tax rates. While the situation is still fluid (especially on the KPC issue), we believe that our numbers have incorporated conservative scenarios. Thus, we maintain our estimates, DCF-based TP of Rp8,300, and Buy/Low Risk rating on Bumi.

- **KPC situation — some light at the end of the tunnel?** — Bumi reveals a worst-case scenario where 74k tons/day of production volume could be affected if the mine/road blockage continues. As Bumi is now looking for a lasting solution to this issue, management claimed that Bengalon hauling road is almost back to normal while the Sangatta mine may resume activity next week.

- **Spotlight on tax** — An issue that caught our attention is the tax benefit that Bumi has continued to book in 1H08 (US$35mn). At the analyst briefing, management commented that this reflects: 1) the sales of coal to SPV IndoCoal. 2) tax-loss carry-forward. Management also maintains guidance of 30% tax rate going forward (vs. CCoW's tax of 45%).

- **Maintaining our 08-10 forecasts and target of Rp8,300** — With still some catching up to do on production in 2H08 and possible downside risk from KPC, Bumi's volume target of 60m tons looks optimistic. Nonetheless, our forecast of 57m tons should already reflect a more conservative expectation. Likewise, we believe our 30% tax rate assumption for 08-10E looks realistic.

Tata Power: Not liable to past dues on account of royalties

- According to Tata Power management it is not liable to any dues on account of royalty payment (~US$200m accruing from CY01) prior to its acquisition of a 30% stake in the coal mines in Indonesia in June 2007.

- The dues are on account of a long-disputed set off of royalty payments against VAT refunds. Coal companies under coal contracts of work (CCOW) have argued that since they are not liable for VAT, they would set off the same against royalty payments. A recent court judgment has ruled that refund of VAT and payment of royalty are separate issues and should not be mixed.

Update on the Mumbai License Area

Tariff order for FY09

- The Maharashtra Electricity Regulatory Commission (MERC) passed the tariff orders for FY09 in respect of generation, transmission and distribution function of Tata Power in the Mumbai licence area. Further, MERC, in the tariff orders has, in accordance with the approved power purchase agreement, considered a capacity of 477 MW from the company's generating capacity in Mumbai and 50MW from the upcoming Unit 8.

ATE order on disallowance of expenditure for FY05/FY06

- MERC, in its order dated October 2006 disapproved a part of the actual expenditure incurred for FY05 and FY06. An appeal was filed by Tata Power in Appellate Tribunal for Electricity (ATE) on these disallowances. The ATE upheld the issues raised by the company in the appeal.

Standby charges vs. Reliance Infrastructure

- On an appeal filed by Tata Power, the Supreme Court has stayed the operation of the ATE order, subject to the condition that the company deposits an amount of Rs2.27bn and submits a bank guarantee for an equal amount and the company has complied with the condition.

- R–Infra has also subsequently filed an appeal before the Supreme Court challenging the ATE Order. Both the Appeals have been admitted, but no date for hearing of the appeals has been fixed.

- The company has filed an appeal with the Supreme Court against the above ATE Order. The hearing was completed in December, 2007 and the judgment is awaited.

Energy charges and take or pay obligation

- MERC directed R-Infra to pay Rs3.24bn to Tata Power towards the difference between the rate of Rs1.77/kwh paid and Rs2.09/kwh payable for the energy drawn at the 220kV interconnection and towards its take-or-pay obligation for the years FY99 and FY00.

- On an appeal filed by R-Infra the ATE upheld the company's contention with regard to payment for energy charges but reduced the rate of interest. As per the ATE Order, the amount payable works out to Rs561.2m (including interest), as on 31 May 2008.

- As regards the take-or-pay obligation, the ATE has ordered that the issue should be examined afresh by MERC after the decision of the Supreme Court in the appeals relating to the distribution licence and rebates given by R-Infra. R-Infra has filed an appeal in the Supreme Court against the ATE's Order. The Supreme Court has directed Tata Power not to take any coercive action until it hears R-Infra's application for stay of the ATE Order. Tata Power is in the process of filing its Appeal in the Supreme Court against the same order of the ATE.

Update on Capacity Expansion

(1) 250 MW Trombay Unit 8

- The 250MW imported coal-based plant at Trombay is progressing as per plan and is scheduled to be commissioned in 2Q FY09. The capacity is proposed to be sold to BEST, Tata Power distribution in the Mumbai licence area and Tata Power Trading.

(2) Mumbai diesel

- Of the planned 100MW capacity, 40MW machines are in an advanced stage of commissioning and are expected to be synchronized by 2Q FY09. The installation of the remaining 60MW engines is under review in the light of high fuel cost.

(3) Wind farm projects

- Would commission additional capacity of 22.5MW in Maharashtra and 100.8MW in Gujarat and Karnataka in 3Q FY09.

(4) 120MW power project at Haldia

- Unit - I of the 45MW project has been synchronized with the grid and is expected to enter commercial production in 2Q FY09. The second unit of 45MW is expected to be commissioned in 3Q FY09.

- Tata Power is also setting up an additional unit of 30MW, which is expected to be commissioned in 4Q FY09. The plants will utilize hot coke oven gases to produce steam for power generation.

- The company has tied up 20MW of power sales to West Bengal State Electricity Board. The sale of balance power will be through Tata Power Trading.

(5) Captive power projects for Tata Steel

Industrial Energy Limited (IEL), a joint-venture company promoted by Tata Power (74%) and Tata Steel Limited (Tata Steel) (26%), is implementing the following projects:

- A 120MW power plant is being constructed at Tata Steel works, Jamshedpur for use by Tata Steel. The plant will utilize waste blast furnace and coke oven gases of Tata Steel to generate power. The project is expected to be commissioned by 3Q FY09.

- A 120MW power plant is planned at the company's existing site at Jojobera. IEL has placed orders for major equipment. The project is expected to be commissioned in 3Q FY10.

- Tata Power is in the process of taking further steps in acquiring land in Orissa for setting up captive units for Tata Steel. The company is also acquiring land at the same location to set up IPP plants using coal blocks allotted to the company.

(6) 4000MW, Mundra UMPP

Tata Power was the first to be awarded a Ultra Mega Power Project (UMPP). On 24 April, 2007, Tata Power signed a power purchase agreement (PPA) for the 4,000MW UMPP in Mundra in coastal Gujarat. The special purpose vehicle (SPV) set up for the project, Coastal Gujarat Power Ltd (CGPL), has been transferred and is now a 100% subsidiary of Tata Power.

- **Funding:** The project of approximately Rs170bn is being funded through a debt equity mix of 75:25. The financing comprises equity of Rs42.5bn, external commercial borrowings (ECB) of up to US$1.8bn and rupee loans of up to Rs58.5bn. Coastal Gujarat Power Limited (CGPL) has successfully tied up the entire debt requirement through a consortium of overseas and domestic lenders, namely The Export-Import Bank of Korea, International Finance Corporation, Asian Development Bank, Korea Export Insurance Corporation, BNP Paribas and a consortium of Indian banks led by State Bank of India, including India Infrastructure Finance. The financing agreements were signed in April, 2008.

- **Offtake:** Mundra's generation capacity is 4,000MW (5 x 800 MW), with saleable power of 3,800MW. After completion of the project, it is expected to supply power to Gujarat (1,805 MW), Maharashtra (760 MW), Punjab (475 MW), Haryana (380 MW) and Rajasthan (380 MW).

- **Status update:** Land acquisition activities have been almost completed and site work is in progress. In addition to the orders for boiler island and turbine generators awarded earlier in the year, 72% of the equipment ordering has been done and civil works have commenced at site.

- **Logistics:** Tata Power has formed a 100% subsidiary TPC Energy Asia Pte, now renamed as Trust Energy Resources Pte, as the vehicle for owning ships and for meeting the coal logistics requirements. CGPL has formed a 100% subsidiary in Singapore, Energy Eastern Pte. Ltd. (EEPL). EEPL has already entered into long-term charter party agreements which will meet a part of the shipping requirements of CGPL.

- **Commissioning:** All other arrangements for making speedy progress have been made. CGPL is targeting an accelerated schedule, with the first of the 5 units to be commissioned in September, 2011.

(7) 1050MW Maithon Power Project

- Maithon Power Limited (MPL), a joint venture between the company and Damodar Valley Corporation (DVC), has signed contracts for all major equipments. Civil works have commenced on the site.

- Of the 1,050MW, MPL proposes to sell 300MW to DVC and is in active discussions with various distribution licencees for sale of the balance power.

- The first unit is expected to be commissioned in 3Q FY11 and the second unit by end-FY11. The estimated project cost of Rs44.5bn is being funded on a debt-equity ratio of 70:30.

- MPL completed debt syndication with a consortium led by State Bank of India for rupee term loans aggregating Rs31.15bn in February 2008 and has drawn down the initial from all the lenders.

Figure 11. Current Projects Under Implementation

Project	Capacity (MW)	Fuel	Cost (Rsmn)	Cost (US$mn)	Per MW	Debt	Stake FC	CoD	- Status
Capacity Through Parent									
Trombay Expansion	250	Imported Coal	10,660	266.5	42.6		100% Done	Oct-08	- Main and BOP Order To BHEL/Boiler Drum Lifting Completed/ Boiler Hydro in Feb 2008/ Existing land in Trombay
Diesel Gensets	40	Diesel	1,400	35	35.0		100% Done	2QFY09	- Advanced stages of CoD. Remaining 60MW under review on high fuel cost
Haldia Power Plant	90	Hot Flue Gases	4,538	113	50.4		100% Done	Unit 1 - Sep08 and Unit 2 - Dec08	- Waste heat recovery plant/ 6MW to fuel supplier
Haldia Power Plant	30	Hot Flue Gases	1,513	38	50.4		100% Done	Mar-09	- Boiler - Thermax, Turbine - BHEL, BOP - Tata Projects
Samana, Gujarat	50.4	Wind	2,577	64	51.1		100% Done	Feb-09	- Orders placed with Enercon
Gadag, Karnataka	50.4	Wind	2,577	64	51.1		100% Done	Feb-09	- Orders placed with Enercon
Maharashtra	23.0	Wind	1,176	29	51.1		100% Done	Sep-08	- Orders placed with Enercon
Total	**533.8**		**24,440**	**611**	**45.8**				
Capacity Through Subsidiaries									
Mundra	4000	Imported Coal	170,000	4250	42.5	75%	100% Done	Unit I by Sep11 and other units at 4-month intervals. Full COD Jul12.	- Land Acquired/ Coal from Bumi Resources - 10 MMTPA (+/- 20%)
Maithon	1050	Domestic Coal	44,500	1100	42.4	70%	74% Done	U1 - 3QFY11 and U2 - 4QFY11	- 1120 acres (80% of land acquired)/ BHEL for BTG/Long term coal linkage of 4.86MMTPA from BCCL/ PPA for 300MW with DVC, MoU with TPTCL for 750MW
IEL									
- Jamshedpur	120	Coke oven gas - Tata Steel	4,900	122.5	40.8	70%	74% Done	Dec-08	- Order placed with BHEL and Alstom/Land from Tata Steel
- Jojobera	120	Domestic Coal	6,200	155.0	51.7	70%	74% Done	Dec-09	- Order placed with various vendors/Land from Tata Steel
Total	**5290**		**225,600**	**5628**	**42.6**				

Source: Company and Citi Investment Research

- Tata Power is also evaluating projects with capacity to the tune of 5,970MW as part of its perspective plan as shown below.

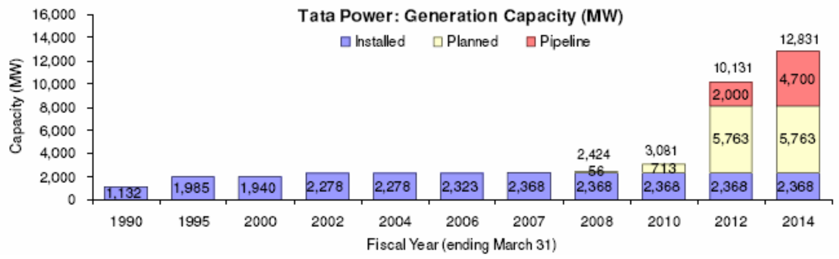
Figure 12. Tata Power — Generation Projects in the Pipeline

Project	Capacity (MW)	- Fuel
Coastal Maharashtra	2400	- Imported coal
Naraj Marthapur IPP	1000	- Mandakini coal block
Naraj Marthapur CPP	1270	- Supply by procurers
Tubed IPP	500	- Captive coal
Jharkand CPP	500	- Supply by Tata Steel
Wind Power	300	- Wind
Total	**5970**	

Source: Company and Citi Investment Research

- Tata Power has ambitious expansion plans to increase generation capacity 4-fold to 10GW in the next 4 years and 6-fold to 13GW in the next 6 years.

Figure 13. Perspective Plan Till FY14



Source: Company and Citi Investment Research

Investment in Indonesian Coal Companies

- Considering the importance of imported coal, Tata Power has integrated backwards in an effort to secure its energy requirement for its power projects. An equity interest in a coal asset provides a hedge for the power business against rising coal prices.

- During FY08, Tata Power completed its acquisition of a 30% stake in two major Indonesian coal companies, PT Kaltim Prima Coal and PT Arutmin Indonesia and related trading companies owned by PT Bumi Resources Tbk for a consideration of approximately US$1.2bn.

- The acquisition was made through special purpose vehicles (SPVs) formed in Mauritius and Cyprus. The acquisition was funded by a one-year bridge loan of US$950m fully guaranteed by the company. The company recently refinanced this bridge loan. The refinancing consists of two long-term facilities, a non-recourse facility for US$590m and a facility of US$270m with recourse to the company.

- The balance bridge facility amounting to US$90m has been repaid through a short-term loan of US$40m, usage of surplus funds of US$20m and the company remitting US$30m from India.

- The company has also entered into an off-take agreement which entitles the company to 10.1m tonnes (+/- 20%, at the company's option). Along with existing contracts, this would cover the bulk of the company's requirement of imported coal till 2014.

- Post the acquisition, the company has been taking adequate steps to monitor the performance of the coal companies. PT Kaltim Prima Coal and PT Arutmin Indonesia together produced 54.2m tonnes of coal in 2007, as against 50.7m tones in 2006.

Captive Coal Block Allocation

(1) Tubed Coal Block in Jharkhand

- Tata Power was allotted the tubed coal block jointly with Hindalco. This block is estimated to have about 120m tonnes of reserves and is located in the Latehar district of Jharkhand. The company's share of coal mined is expected to support a 500MW coal fired thermal plant.

- Hindalco and Tata Power have formed a joint-venture company, Tubed Coal Mines Limited, to mine the coal. The allotment of the coal block has been challenged in the Calcutta High Court and the hearing is in progress.

(2) Mandakini Coal Block in Orissa

- The screening committee of Ministry of Coal has allotted Mandakini Coal Block in Orissa with proven reserves of 291m tonnes jointly to Tata Power, Jindal Photo and Monnet Ispat.

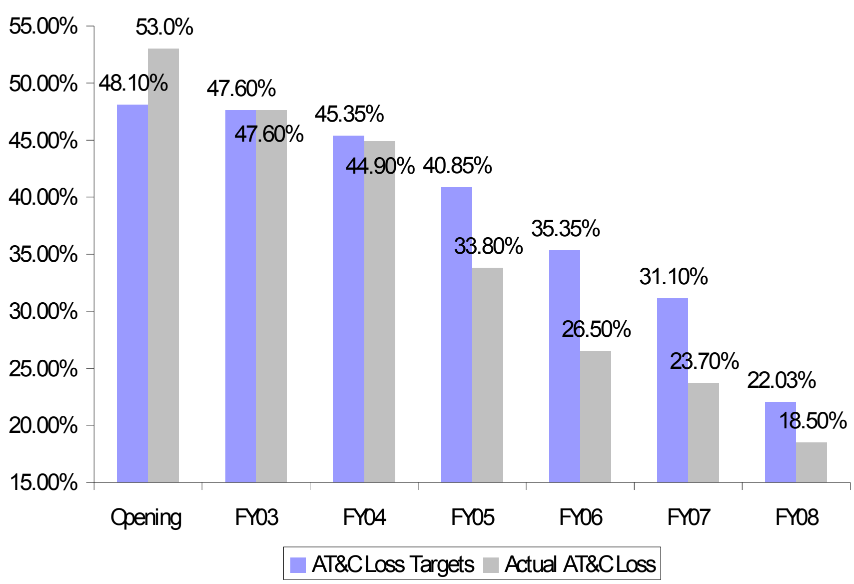
- The company's share of coal mined is expected to support a 1000MW coal fired power plant.

Updates on Subsidiaries

North Delhi Power Limited (NDPL)

- NDPL is a 51:49 JV of Tata Power and Delhi Vidyut Praday Nigam (a Government of Delhi undertaking). NDPL services over 1m consumers spread over 500 sqkm in the north Delhi area. The peak load in this area is about 1,150 MVA, with energy consumption of over 5,900m kWh
- During 2007-08, NDPL earned revenue of Rs22.8bn and a PAT of Rs2,816m. In six years of its operations, NDPL has reduced its AT&C losses from a high of 53% to 18.5% in FY08.
- Measures like energy audits, replacement of old meters with theft-proof electronic meters, automated meter reading, aggressive enforcement and public–NGO–company awareness drives have reduced the current AT&C loss percentage to well below the target loss level committed to the regulatory authorities.

Figure 14. NDPL AT&C Loss Reduction v/s Targets



Source: Citi Investment Research and Company

Powerlinks Transmission Limited (PTL)

- PTL is a 51:49 JV between Tata Power and Power Grid Corporation of India (PGCIL). PTL transmits power from the 1,020MW Tala hydro electric power project in Bhutan and surplus power from the eastern/north-eastern region of India through its transmission lines between Siliguri (West Bengal) and Mandola (Uttar Pradesh), spanning a distance of 1,166km.
- With a total investment of Rs15.6bn, the project, consisting of 440 KV double-circuit transmission lines, was completed within the scheduled time frame and cost estimates. In all, 13 states (West Bengal, Bihar, Jharkhand,

Orissa, Sikkim, Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir, Uttaranchal, Rajasthan, Uttar Pradesh, and Delhi) benefit from this project.

- Maintaining an average availability of 99.7%, the project is an important link in the national power grid and is the first inter-state transmission project that has been implemented through the PPP route.

- During FY08, which was its first full year of operations, PTL earned revenue of Rs2,450m with a PAT of Rs580m.

Tata Power Trading Company Limited

- Tata Power Trading was incorporated in 2003 and was the first company in India to receive a power trading licence from the CERC in June 2004. Tata Power Trading is in the business of trading electrical power in India.

- Tata Power Trading sources surplus power from various state/private sector power generation utilities, captive power plants and state-owned electricity boards. Its trading partners include the Maharashtra State Electricity Board, the Madhya Pradesh State Electricity Board, the West Bengal State Electricity Board, the Power & Electricity Department of Government of Mizoram, the Damodar Valley Corporation, the Haryana Power Generation Corporation and Delhi Transco, among others.

- Tata Power Trading has also commenced trading surplus power from the captive power plants belonging to Hindustan Zinc Limited (Rajasthan), and the Jindal Thermal Power Company Limited (Karnataka).

- The company earned revenues of Rs8,835m with PAT of Rs43m in FY08.

Other Developments

Preferential issue of shares and warrants

- Tata Power made a preferential Issue of equity shares and warrants to Tata Sons and accordingly, the company allotted 9.9m equity shares at Rs587.08 per share in FY08.
- Further 10.4m warrants were issued to Tata Sons which is exercisable after 1 April, 2008 but on or before 17 December, 2008. The warrants are convertible into equity shares at a price not lower than Rs1,351.63.

Decides to acquire 10% stake in Geodynamics, Australia

- Tata Power has announced its decision to acquire (either by itself or through one or more of its subsidiaries in India or abroad) 29.4m shares of Geodynamics, a listed Australia-based organization specializing in geothermal energy and enhanced geothermal systems (EGS), representing 11.4% of the current issued share capital (equivalent to 10% of the increased share capital after allotment by Geodynamics). The shares will be acquired by Tata Power at an issued price of A$1.50 per share, entailing a total investment of A$44.1m (~Rs1,650m) in absolute terms.
- As part of the investment, Tata Power will also get a directorship on the board of Geodynamics. In addition to the cornerstone investment above, the companies have agreed to review the potential of geothermal prospects outside Australia by leveraging the companies' respective strengths. Further, this alliance also helps in securing a foothold in the growing renewable energy market in Australia.
- Geodynamics is the industry leader in EGS with a market capitalization in excess of A$350m (August, 2008). Geodynamics has geothermal exploration interests in 3 Australian states including the license for exploring 2000 sqkm of area in the Cooper Basin. Geodynamics tenements in the Cooper Basin contain the hottest granites on earth and are estimated to provide a thermal resource equivalent of 50bn barrels of oil.

Tata Power

Company description

Tata Power is a leading Indian power utility with interests in generation (2368MW of capacity), distribution (Delhi license area), transmission (Tala Transmission Project) and trading (Tata Power Trading).

Investment strategy

We maintain our Buy/Low Risk rating on Tata Power. It has historically been slightly conservative in its plans. The company's approach to growth has, however, undergone a sea change with the appointment of Prasad Menon as the MD and Gerald Grove-White as the COO prior to the bidding of the Sasan and Mundra UMPPs. With these appointments it has started taking what we believe are measured risks. The key element of the Mundra bid was the management of imported coal prices. With the acquisition of the 2 coal mines of Bumi Resources, Tata Power has not only secured fuel supply for Mundra, but also acquired world-class assets. Tata Power is embarking on an ambitious multiplication of generation capacity by four-fold to 10GW in the next four years, and six-fold to 13GW in the next six years. Given the new aggressive management and a good execution record clearly evident from the bringing down of AT&C losses from 53% before privatization to 18.5% in six years in NDPL, we believe Tata Power has a realistic chance of achieving these targets.

Valuation

Our Rs1,453 target price is based on a sum-of-the-parts approach:

- Parent business using DCF as of June 2009, using a WACC of 13% (Rm-Rf = 6%, Rf = 9%, Beta = 1.05, After Tax Cost of Debt = 6%, Debt/Capital = 25% and Equity/Capital = 75%);
- Tata Power's 51% stake in NDPL is valued at 3.0x FY08 P/BV;
- Tata Power's stake in Powerlinks is valued at 1.5x FY08 P/BV;
- Holdings in Tata Teleservices (Maharashtra) and VSNL are valued at a 20% discount to market value;
- Stake in Tata Teleservices is based on CIR telecom team valuations;
- Mundra UMPP using FCFE and Cost of Equity = 13%;
- The Maithon project is valued like Mundra UMPP;
- 30% stake in Bumi's coal mines at FCFE and Cost of Equity = 13%;
- Stake in NELCO is valued at a 20% discount to market value;
- 51% stake in Tata BP Solar at 20x FY08 PAT; and

- Indirect 1.4% stake in TCS at a 20% discount to market value.

Risks

We rate Tata Power shares Low Risk based on our quantitative risk-rating system, which tracks 260-day historical share price volatility. The key downside risks which could prevent the shares from reaching our target price include:

- Unfavorable judgment in the MERC order petition and the standby charges case vs. R-Infra could negatively impact Tata Power's financials;
- The power sector is gradually liberalizing, but the regulatory and tariff structures are still evolving. Companies in the sector are vulnerable to delays, mid-term corrections and dramatic policy changes; under the existing system, litigation following any discord may be time consuming, and the lack of precedents adds to the uncertainty;
- Delays and cost escalation in its capacity expansion and an unfavorable interest rate environment;
- Downside risks to our target price also relate to the nature of the Asian coal market. Inability to fill orders or expand capacity in the Indonesian coal mines will have a material impact on profitability, as will regional coal prices; and
- The coal mines are also heavily reliant on its contract miners; changing relations with these could materially affect operations.

Other companies

NTPC

Valuation: Our valuation methodology for NTPC involves setting a floor price for the stock and then valuing the value of growth opportunity (VGO) captured by our DCF calculation. We set a floor price of Rs171 for the NTPC stock using replacement cost of assets methodology and adding the value of power bonds and coal mining. However, we believe the replacement cost of method does not fully capture the upside inherent in NTPC's unprecedented capacity addition plan against a backdrop of persistent peak and base load deficits in India that is further exacerbated by rapid economic growth. To capture this value, we use a DCF methodology and set a target price of Rs235.

Risks: We rate NTPC as Low Risk according to our quantitative risk-rating system, which tracks 260-day historical share price volatility. Key risks to NTPC's operations and our earnings forecasts and target price could emanate from: 1) NTPC's operations depend on timely availability of fuel. NTPC's gas based plants have been hampered by poor fuel supply, resulting in sub optimal capacity utilization; 2) NTPC is implementing larger modules and newer technologies such as 660MW and 800MW super-critical technology and alternative fuels such as gas and hydro more aggressively. These initiatives could place demands on the company's project management and technology absorption skills; 3) NTPC's regulated rate of return for the period FY05-09 was reduced from 16% to 14% (post tax ROE) due to falling interest rates and the presence of a payment security mechanism. Any further reduction post FY09 would affect earnings and profitability; and 4) The UI rates are high compared to normal tariffs and there could be pressure from the SEBs to reduce this spot market premium.

Bumi Resources (BUMI.JK; Rp3,950; 1L)

Valuation: Our target price of Rp8,300 imputes an 11.3x 09 P/E, which we see as reasonable given that we are likely around the peak of the current coal price cycle. The target price is based off a two-stage earnings growth model, with earnings growth at 28% for 2007-10E as per our forecast and a long-term GDP growth rate of 6.5% thereafter. We impute a cost of equity for this model of 13% from a risk-free rate of 10%, a market risk premium of 5%, and a beta of 1x. (Bumi's equity beta should have fallen following its de-levering.)

Risks: We rate Bumi shares Low Risk based on our quantitative risk rating system, which tracks share price volatility. Upside risks that could cause the shares to trade above our target price are: 1) Any further upside to coal prices, and ongoing strength in global energy prices; 2) Any corporate finance transactions, or deals to acquire further mineral deposits in Indonesia. Downside risks to our target price relate principally to the nature of the regional coal market. Inability to fill orders, or expand capacity, will have a material impact on profitability, as will regional coal prices. Bumi is also heavily reliant on its contract miners; changing relations with these could materially affect operations. Finally, we see governance risk. Bumi is looking to diversify its resource holdings and is actively courting transactions. Not only is there a risk that Bumi's business profile will change sharply but also dissenting shareholders would be unlikely to prevent any transactions they find unappealing given the current board structure.

Appendix A-1

Analyst Certification

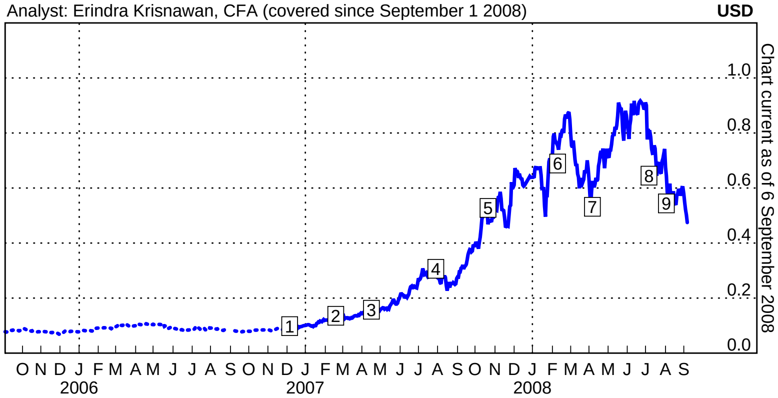
Each research analyst(s) principally responsible for the preparation and content of all or any identified portion of this research report hereby certifies that, with respect to each issuer or security or any identified portion of the report with respect to an issuer or security that the research analyst covers in this research report, all of the views expressed in this research report accurately reflect their personal views about those issuer(s) or securities. Each research analyst(s) also certify that no part of their compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this research report.

IMPORTANT DISCLOSURES

Bumi Resources (BUMI.JK)

Ratings and Target Price History - Fundamental Research

Analyst: Erindra Krisnawan, CFA (covered since September 1 2008)



#	Date	Rating	Target Price	Closing Price
1:	6 Dec 06	1L	0.11	0.09
2:	19 Feb 07	1L	*0.16	0.13
3:	17 Apr 07	1L	*0.20	0.15
4:	30 Jul 07	1L	*0.34	0.29
5:	22 Oct 07	*3L	*0.40	0.47
6:	11 Feb 08	3L	*0.63	0.75
7:	6 Apr 08	*1L	*0.67	0.62
8:	7 Jul 08	1L	*1.04	0.80
9:	4 Aug 08	1L	*0.91	0.64

*Indicates change.

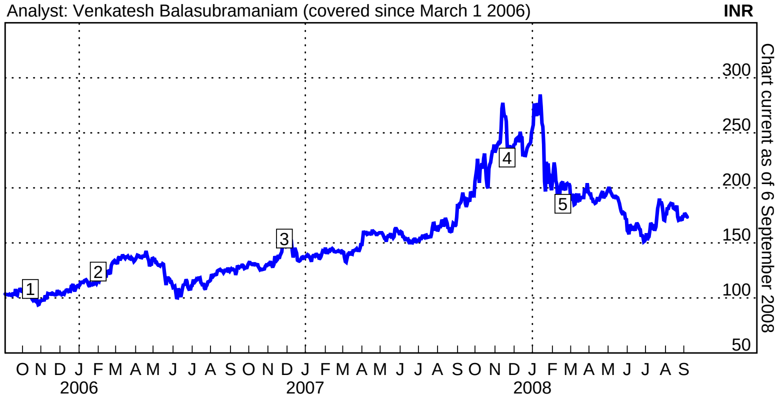
Covered
Not covered

Rating/target price changes above reflect Eastern Standard Time

NTPC (NTPC.BO)

Ratings and Target Price History - Fundamental Research

Analyst: Venkatesh Balasubramaniam (covered since March 1 2006)



#	Date	Rating	Target Price	Closing Price
1:	14 Oct 05	1L	*120.00	102.65
2:	1 Feb 06	1L	*137.00	115.75
3:	28 Nov 06	1L	*181.00	149.85
4:	21 Nov 07	*3L	*231.00	239.50
5:	19 Feb 08	*1L	*235.00	204.60

*Indicates change.

Covered
Not covered

Rating/target price changes above reflect Eastern Standard Time

Tata Power (TTPW.BO)

Ratings and Target Price History - Fundamental Research

Analyst: Venkatesh Balasubramaniam (covered since March 1 2006)

#	Date	Rating	Target Price	Closing Price
1:	24 Mar 06	*3L	*579.00	588.70
2:	13 Jul 06	*1L	*557.00	493.65
3:	8 Feb 07	*2L	*648.00	605.05
4:	8 Oct 07	*1L	*1,078.00	900.45
5:	30 Jan 08	1L	*1,494.00	1,317.75

*Indicates change.

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of NTPC.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from NTPC.

Citigroup Global Markets Inc. or its affiliates expects to receive or intends to seek, within the next three months, compensation for investment banking services from NTPC.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from NTPC and Tata Power in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following company(ies) as investment banking client(s): NTPC.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following company(ies) as clients, and the services provided were non-investment-banking, securities-related: NTPC.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following company(ies) as clients, and the services provided were non-investment-banking, non-securities-related: NTPC and Tata Power.

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability, which includes revenues from, among other business units, the Private Client Division, Institutional Sales and Trading, and Investment Banking.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Investment Research product ("the Product"), please contact Citi Investment Research, 388 Greenwich Street, 29th Floor, New York, NY, 10013, Attention: Legal/Compliance. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's disclosure website at www.citigroupgeo.com. Private Client Division clients should refer to www.smithbarney.com/research. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Historical disclosures (for up to the past three years) will be provided upon request.

Citi Investment Research Ratings Distribution

Data current as of 30 June 2008	**Buy**	**Hold**	**Sell**
Citi Investment Research Global Fundamental Coverage (3096)	50%	36%	14%
% of companies in each rating category that are investment banking clients	53%	52%	42%

Guide to Fundamental Research Investment Ratings:
Citi Investment Research's stock recommendations include a risk rating and an investment rating.
Risk ratings, which take into account both price volatility and fundamental criteria, are: Low (L), Medium (M), High (H), and Speculative (S).
Investment ratings are a function of Citi Investment Research's expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating.
For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings are: Buy (1) (expected total return of 15% or more for Low-Risk stocks, 20% or more for Medium-Risk stocks, 30% or more for High-Risk stocks, and 40% or more for Speculative stocks); Hold (2) (5%-15% for Low-Risk stocks, 10%-20% for Medium-Risk stocks, 15%-30% for High-Risk stocks, and 20%-40% for Speculative stocks); and Sell (3) (5% or less for Low-Risk stocks, 10% or less for Medium-Risk stocks, 15% or less for High-Risk stocks, and 20% or less for Speculative stocks).
Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.

Guide to Corporate Bond Research Credit Opinions and Investment Ratings: Citi Investment Research's corporate bond research issuer publications include a fundamental credit opinion of Improving, Stable or Deteriorating and a complementary risk rating of Low (L), Medium (M), High (H) or Speculative (S) regarding the credit risk of the company featured in the report. The fundamental credit opinion reflects the CIR analyst's opinion of the direction of credit fundamentals of the issuer without respect to securities market vagaries. The fundamental credit opinion is not geared to, but should be viewed in the context of, debt ratings issued by major public debt ratings companies such as Moody's Investors Service, Standard and Poor's, and Fitch Ratings. CBR risk ratings are approximately equivalent to the following matrix: Low

Risk -- Triple A to Low Double A; Low to Medium Risk -- High Single A through High Triple B; Medium to High Risk -- Mid Triple B through High Double B; High to Speculative Risk -- Mid Double B and Below. The risk rating element illustrates the analyst's opinion of the relative likelihood of loss of principal when a fixed income security issued by a company is held to maturity, based upon both fundamental and market risk factors. Certain reports published by Citi Investment Research will also include investment ratings on specific issues of companies under coverage which have been assigned fundamental credit opinions and risk ratings. Investment ratings are a function of Citi Investment Research's expectations for total return, relative return (relative to the performance of relevant Citi bond indices), and risk rating. These investment ratings are: Buy/Overweight -- the bond is expected to outperform the relevant Citigroup bond market sector index (Broad Investment Grade, High Yield Market or Emerging Market); Hold/Neutral Weight -- the bond is expected to perform in line with the relevant Citigroup bond market sector index; or Sell/Underweight -- the bond is expected to underperform the relevant Citigroup bond market sector index. Performance data for Citi bond indices are updated monthly, are available upon request and can also be viewed at http://sd.ny.ssmb.com/ using the "Indexes" tab.

OTHER DISCLOSURES

The subject company's share price set out on the front page of this Product is quoted as at 09 September 2008 10:24 AM on the issuer's primary market.

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to NTPC. (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at www.citigroupgeo.com.)

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the subject company(ies) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Investment Research does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of Citi Investment Research to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Smith Barney clients can ask their Financial Advisor for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in Australia to wholesale clients through Citigroup Global Markets Australia Pty Ltd. (ABN 64 003 114 832 and AFSL No. 240992) and to retail clients through Citi Smith Barney Pty Ltd. (ABN 19 009 145 555 and AFSL No. 240813), Participants of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in Brazil by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários, BACEN - Brazilian Central Bank, APIMEC - Associação Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBID - Associação Nacional dos Bancos de Investimento. Av. Paulista, 1111 - 11º andar - CEP. 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of Canada by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. The Product is made available in France by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 1-5 Rue Paul Cézanne, 8ème, Paris, France. The Product may not be distributed to private clients in Germany. The Product is distributed in Germany by Citigroup Global Markets Deutschland AG & Co. KGaA, which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). Frankfurt am Main, Reuterweg 16, 60323 Frankfurt am Main. If the Product is made available in Hong Kong by, or on behalf of, Citigroup Global Markets Asia Ltd., it is attributable to Citigroup Global Markets Asia Ltd., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Product is made available in Hong Kong by The Citigroup Private Bank to its clients, it is attributable to Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. The Citigroup Private Bank and Citibank N.A. is regulated by the Hong Kong Monetary Authority. The Product is made available in India by Citigroup Global Markets India Private Limited, which is regulated by Securities and Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. The Product is made available in Indonesia through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in Italy by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. Foro Buonaparte